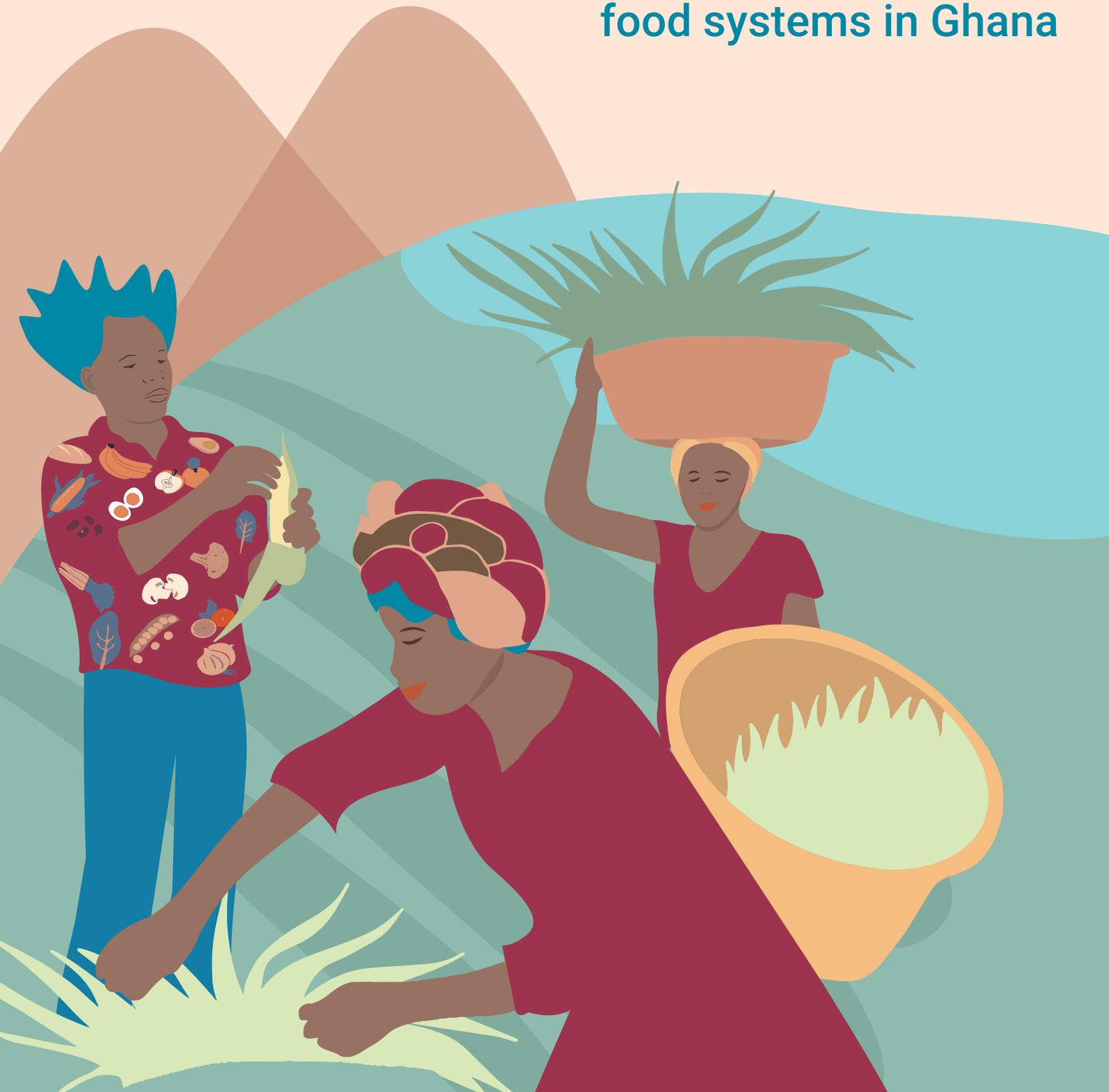




Food and Agriculture Organization
of the United Nations

Involving women and youth in responsible investment

in agriculture and food systems in Ghana





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▶▶ Abbreviations and acronyms

1D1F	One District One Factory
AGRA	Alliance for a Green Revolution in Africa
CFS RAI	CFS Principles for Responsible Investment in Agriculture and Food Systems
D4Ag	Digitalization for agriculture
DoC	Day-old chick
FAO	Food and Agriculture Organization of the United Nations
FBU	Family Business Unit
FDA	Food and Drug Authority
FFF	Farm and Forest Facility
ICT	Information and Communication Technology
ITC	International Trade Centre
GBC	Gender-Based Constraints
GDP	Gross Domestic Product
GHS	Ghanaian Cedi
GIFT	Genetically Improved Farmed Tilapia
GNADP	Ghana National Aquaculture Development Plan
GPP	Ghana Poultry Program
HACCP	Hazard Analysis and Critical Control Point
IAWG	Inter-agency Working Group
MoFA	Ministry of Food and Agriculture
NRDS	National Rice Development Strategy
OECD	Organisation for Economic Co-operation and Development
QA	Quality assurance
RAF	FAO Regional Office for Africa
RAI	Responsible Investment in Agriculture and Food Systems
SMEs	Small and Medium Enterprises
SWOT	Strengths, Weaknesses, Opportunities and Threats
WYE	Women and Youth-led Agro-enterprises

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▶▶ Executive summary

Between 2015 and 2017, FAO organized a series of multistakeholder workshops on Responsible Investment in Agriculture and Food Systems (RAI) in Ghana, Malawi, Mozambique, Senegal and Tanzania as part of the Inter-agency Working Group (IAWG) programme on principles guiding new investment in agriculture. In Ghana, workshop participants identified gender and youth issues as particularly relevant to their needs and interests in relation to RAI. Based on these findings, in 2018–2019, FAO supported an initiative on the involvement of women and youth in responsible investment in agriculture and food systems in Ghana.

Women and youth-led agro-enterprises (WYE), which may also be operating as family businesses, in agricultural value chains have been identified as catalysts for rural transformation, given their potential for creating employment and stimulating value addition both on and off farm. Given that agriculture and food systems are likely to remain the key generators of employment in Ghana over the coming decades, and that 80 percent of all activities in the midstream of food value chain are undertaken by small and medium enterprises (SMEs) in Africa, the strategic link to the empowerment of women and youth-led agribusinesses in Ghana is clear (AGRA, 2019). However, knowledge on such businesses in Ghana, especially those led by women and youth beyond primary agriculture, appears to be limited.

This exploratory study represents a first step towards generating evidence to support the argument that family, women and youth-led agribusinesses have a key role to play in the rural transformation under way in Ghana. The survey uncovered practical insights from 26 WYEs operating in rural, peri-urban and urban areas. The 26 participating WYEs operated in diverse value chains across four main subsectors: horticulture (3), food crops (4), fish (8) and livestock and poultry (11). It is anticipated that the findings from this study will be used as inputs for the development of an agenda on this topic by RAF.

Drawing on issues identified by Ghanaian stakeholders and a thorough literature review, including on rural transformation and the role of SMEs in Africa, the history and growth of family businesses in Ghana, and other critical issues identified as inhibiting the development of women and youth-led agro-enterprises, an analytical framework was developed, which applies five analytical lenses – labour, enterprise, livelihood, gender and value chain. It is also guided by an investment focus linked to the CFS Principles for Responsible Investment in Agriculture and Food Systems (CFS RAI), and an analysis of the enabling environment for SMEs in the agricultural sector. The analytical framework guided the design of a semi-structured survey consisting of ten parts:

1. Profile of the enterprise
2. Business operations (Start-up phase Year 1–2 and beyond)
3. Enabling environment
4. Products and production process
5. Food safety and quality assurance
6. Value chain analysis (WYE as focal actor)
7. Competitor analysis
8. Assessing financial performance
9. SWOT analysis
10. Conclusions and recommendations

Selection of the 26 WYEs was purposefully based on a set of minimum criteria to allow for greater insights into the motivation for starting the business and current operational successes and challenges. Where possible, the enterprises must have been in operation for a minimum of three years (at least from 2016), be self-classified as a woman or youth-led enterprise (or both), and may or may not also be classified as a family business depending on the extent of involvement of family members in the business (i.e. minimum of two members from the same family). An attempt was also made to take into consideration the geographical representation of the enterprises, with an objective of achieving 50 percent selection from rural areas and 50 percent from peri-urban and urban areas. This was mostly achieved with 46 percent (i.e. 12 enterprises) operating in areas that could be classified as “rural”, 38 percent (10 enterprises) from peri-urban areas and the remaining 16 percent (4 enterprises) identified from urban locations. The key findings from all sections of the survey are provided below.

General findings and conclusions

Classification of WYEs. From the 26 enterprises selected, 54 percent (14 businesses) were female-led enterprises with 36 percent of these (i.e. 5 of the 14) classified as both youth and woman-led, 31 percent (8) were male youth-led businesses with owners under the age of 35, and 15 percent (4) were adult male-led businesses but were selected on the basis that they had started out as youth-led businesses or were also classified as family businesses. A total of 54 percent (14 businesses) were also classified as family businesses, thus confirming the close interconnection between family businesses and youth and female-led SMEs. The longevity of the business operations varied: 27 percent (7 businesses) had been in operation for more than ten years (i.e. established); 38 percent (10) for between four and nine years (i.e. growth phase); and 35 percent (9) had been in operation for three years or less (i.e. start-up phase). From the 26 enterprises, sixty-two percent (16) of the WYEs were officially registered businesses as either limited liability companies (4), SMEs (1) or sole proprietorship businesses (11).

Human resources. For the majority of the business owners, running the business was their full-time job; however, eight of the owners were only managing their business part-time while maintaining careers in other fields. The qualifications of the owners were higher than expected. Sixty-two percent (16 owners) had Bachelor-level university degrees or higher in a range of disciplines, 23 percent (6) had only completed junior high school, and these were predominantly from rural areas. The majority of staff hired in full-time positions had only junior or senior high school-level qualifications and on-the-job training was considered a prerequisite to overcome the skills gap. A number of businesses used the services of a bookkeeper, accountant or a trained economist who is a family member or a friend, to assist with the elaboration of the business plan. Retention of staff/staff turnover was an issue for 50 percent of the WYEs, because of competition for farm labour within the community, or the draw of better paid industries. The lack of commitment by youth workers in general, was raised as a major challenge.

Motivation to begin the business. Motivations for starting up a WYE were found to be diverse. For about a third of the interviewees (9 businesses), the motivation came from traditional sources (i.e. inherited family business, parents were farmers, grew up in rural communities etc.). For the remaining enterprises, more modern perspectives prevailed, such as: recognising clear market opportunities for new products; social motivations to solve youth unemployment through agribusiness; capitalizing on educational qualifications and research findings; and a need to generate additional income for the family or create self-employment opportunities. Several of the business owners also came from diverse professional (non-agricultural) backgrounds such as business and finance, sociology, engineering and graphic design. This is a positive indicator that the agribusiness sector in Ghana is currently viewed as

offering strong market opportunities, which in turn are motivating entrepreneurs to invest despite their limited experience in the sector.

Under the **labour** “lens”, the study investigated the extent to which the enterprises can create and sustain decent employment opportunities. Key conclusions were as follows:

- The generation of self-employment for the owners as well as employment opportunities for both family and non-family members highlights the potential of SMEs operating in the midstream of food value chains to combat unemployment. A total of 98 full-time jobs were created by the WYEs interviewed, with 21 of these classified as self-employment for the owners and 71 new full-time jobs generated for family and non-family members. An additional 47 part-time or permanent casual jobs were also reported.
- Salary levels were relatively low and one can doubt if all jobs can be considered “decent” or providing a “living wage”. Many owners are aware of this, but they are currently constrained by very small net profits. The average monthly salary reported for full-time workers was GHS 400–500 (USD 75–94).¹
- The Ghana Statistical Service reported in 2016 that the average monthly earnings by all paid employees in the agriculture, forestry, and fishing sector in Ghana is USD 184 (Ghana Statistical Service, 2016). This would classify the reported monthly salaries as indecent employment conditions.

Under the **enterprise** lens, the **main income-generating activity** of the business was examined in detail, including the products offered and production processes. An assessment was made on the level of **access to resources** needed to run the business, including **land, education and training, ICT hardware and software, mechanization**, and implementation of **quality assurance systems**. The **financial analysis** section assessed the profitability of the business over the previous financial year (2018), as an indicator of the current viability and future sustainability of the business. Key conclusions were as follows:

- **Subsectors and products.** The participating WYEs operated in diverse value chains and activities, under four main subsectors: horticulture (3); food crops (4); fish (8); and livestock and poultry (11). Final products included spices, fruit juices and vegetables; cassava and cassava powder, maize, brown rice and rice flour products, oil palm and cocoa; fresh and smoked fish, processed fish, including fish sausages, fish patties and grilled fish; goat and processed goat meat, dressed chickens, live chickens, chicks and eggs, dressed and grilled rabbit, pigs and pork meat.
- **Value addition.** The majority of the enterprises were involved in processing (77 percent or 20 WYEs) and of these, many were also directly engaged in on-farm production activities (60 percent (12 out of 20)). Those engaged solely in wholesale or processing had direct links to local farmers, which again confirms the importance of SMEs in the midstream of the value chain and the strong backward linkages to production i.e. supporting WYEs’ results for both farmers and SMEs. This is consistent with the findings from AGRA (2019).
- **Awareness of value-chain constraints:** Despite the earlier mentioned linkages between farmers and WYEs, a limited number (<30 percent) of the WYEs included in the study were able to identify specific value chain constraints in the SWOT analysis. While many of the WYEs are operating in the midstream of the chain, it appears that their understanding of both upstream and downstream value chain constraints is largely limited. Some exceptions were noted, however, in the poultry, pig and rabbit sectors, where specific value-chain constraints were identified, including the poor quality of day-old chicks (DoCs), the cost of feed, the difficulties associated with mastering biosecurity measures and a lack of access to veterinary services, and lack of Food and Drug Authority (FDA) certificate were mentioned as constraints.

¹ At the time of writing, USD 1 equaled approximately GHS 5.34.

- **Access to land.** Twenty-three of the companies have access to land. The remaining three are not involved in production, and none of them reported problems accessing land. Only three of the companies reported concrete problems related to land access or tenure security, indicating that securing access to land was not considered a major impediment for the viability or sustainability of the business for the majority. Respondents indicated that accessing land was only possible when you have the funds to secure it, irrespective of being male or female.
- **Training and education.** During the start-up phase, most of the enterprises received some form of technical training in production or processing, in addition to basic record-keeping/financial management and/or development of a business plan. Eighty-eight percent (23) of the enterprises reported that they had had some form of financial management/record-keeping training. In the poultry value chain, many of entrepreneurs are currently benefitting from training delivered by the USDA Ghana Poultry Project (GPP) and are hoping for further training if selected as part of the One district One Factory government programme. The most commonly reported training need at the time was for traditional and digital marketing. Many enterprises felt that they did not have sufficient knowledge on how to effectively market their products more broadly than to local customers or wholesale markets, where they felt they were rather price-takers.
- **ICT access and use.** Mobile phones were reported as the main business-related communication device for 100 percent of the companies. Laptops were the second most common device used by the business, with 58 percent of the enterprises (15) reporting that they owned and used these mostly for record-keeping. The universal adoption of mobile phones regardless of gender is a positive sign for Ghana given that women in Africa are 14 percent less likely to own a mobile phone than men (CTA, 2019a). The most commonly reported ICT Apps used to market products were Facebook, WhatsApp, Instagram, Twitter, Yahoo, YouTube and email. This explains the urgent request made by many enterprises for digital marketing training. Only three (12 percent) of the enterprises already had their own company website, used mainly for marketing purposes, and only two enterprises (8 percent) had ever used the services of an ICT provider (i.e. the e-commerce platform Hartel) to set up a virtual shop and to notify customers via SMS about their products. This finding suggests that the market for ICT services is insufficiently developed to match the needs of WYEs and poorly targeted to date.
- **Mechanization** of business operations remains low with relatively basic equipment used. One of the major inhibitors to WYEs taking operations to the next level is the inability to purchase the (processing) machinery required to do so. Many of the enterprises knew exactly what hardware they needed to grow their businesses but simply could not afford to purchase it.
- **Quality assurance.** A varying degree of awareness of basic food safety was displayed by many of the enterprises, but only a few of them are officially certified. Six of the enterprises (23 percent) had some type of certification and another six (23 percent) aimed at or were in the process of being certified. Sixteen of the enterprises (62 percent) communicated no quality requirements at all to their suppliers, thus, the market for end products has not yet reached the level of sophistication required to demand high levels of traceability and quality assurance from raw material suppliers. Similarly, only four customers made any specific requests to WYEs regarding the quality of the products purchased. This indicates that official certification may not be a prerequisite to operate in some segments of the value chain or when targeting local markets at present. However, all enterprises involved in agriculture and food value chains need to consider food safety and quality, particularly to remain competitive in modernising markets. Capacity development in this area is needed.
- **Financial performance.** While the majority of business owners had received training in financial management, many of them could not provide the details needed to complete the marginal analysis

for the previous financial year. There were a number of gaps in the variable costs reported and many businesses stated that they had no fixed costs (which seems highly unlikely) or did not know what these were. Financial management/book-keeping and basic accounting skills are clearly an area that needs further reinforcement for all WYEs. Record-keeping also needs to be improved, as many enterprises could not accurately report on the quantities of raw materials purchased or units of product sold. This can also be attributed to a lack of technical ability to accurately forecast some production characteristics (e.g. average yield, total inputs required to achieve yield, etc.). The production figures reported by some of the WYEs were unrealistic for their current scale and this can contribute to difficulties in price-setting and limit the overall profitability of the business.

- **Net profit.** 19 WYEs (73 percent) were generating a net profit which ranged from the highest earner with a net income of GHS 517 112 to the lowest earner with a net income of GHS 740. In total, five (19 percent) WYEs were earning more than GHS 100 000 net income, one WYE was earning between GHS 50 000 and GHS 100 000; five (19 percent) were earning between GHS 5 000 and GHS 20 000; and eight WYEs (31 percent) were earning less than GHS 5 000. The five highest earning WYEs were all engaged in some form of value addition (processing) or the production and marketing of cash crops (oil palm and cocoa), and four of them had been in business for 5 to 30 years. Six of the WYEs earning less than GHS 5 000 were engaged in primary production with no value-addition activities, indicating that higher income is more likely when WYEs engage in midstream value chain activities.
- **Living income.** Based on the above findings, if we compare the net income earned by the WYEs with both the national average per capita income estimated at GHS 11 742 (USD 2 200) (freedomfromhunger.org), and a recent estimate of the living income for two adults with three children in Ghana, GHS 17 568 per annum (GIZ, 2018), only eight of the WYEs (31 percent) were found to be earning more than the average annual per capita income, and only five (19 percent) are earning what could be considered a living wage for a family. This finding is consistent with the literature on youth entrepreneurship that found that many youth-led enterprises remain engaged in subsistence activities that struggle to return a decent living wage for the owners (OECD, 2017).
- **Operating at a loss.** Based on the gross margin analysis for 2018, six WYEs (23 percent) were found to be operating at a loss that ranged from GHS 1 168 176 to GHS 4 350. Five of the six enterprises operating at a loss are engaged in fish and poultry production. To some extent, these losses can be explained by high feed costs and other inputs (e.g. fingerlings). During the interviews, many of the fish and poultry production enterprises made requests for support to learn how to produce their own feed, and the findings from the financial analysis section clearly indicate that feed cost is a critical issue affecting the survival of these businesses.
- **Overall,** the findings provide a rough snapshot of the current financial health of the WYEs and unfortunately, the picture is not particularly bright, with over 50 percent of the enterprises either returning low net profit to owners (i.e. 31 percent earning less than GHS 5 000) or operating at a loss (23 percent) based on the reported 2018 financial year figures. Even for those enterprises making very small profits or operating at a loss, many of the business owners thought that the enterprises could still be considered “viable” based on the potential size of the market to absorb their products. This clearly indicates that greater financial management skill is needed in both analysing and managing the accounts for the business in order to identify ways to increase profitability by reducing costs or increasing sales/diversifying products, rather than relying on general market trends as an indicator of viability. This also needs to be combined with an increased understanding of the value chain in which they operate and the technical coefficients that are needed to improve their production.

Investment findings. Key conclusions were as follows:

- **Start-up capital.** Consistent with findings in the literature, almost all of the enterprises used personal savings as initial start-up capital, with relatively few taking loans. Ninety-two percent (24) of the enterprises interviewed stated that the initial start-up capital came from personal savings, with commonly reported levels of investment ranging from GHS 40 000 to 60 000 in the first two years. Only two enterprises reported the main source of start-up capital as coming from grants or loans.
- **Start-up investments.** Start-up capital was used to establish or expand the raw material production activities for the business or externally source raw materials, and purchase machinery and equipment required for value addition. Yet the technical capacities needed to initiate or upgrade production and processing in order to make these investments worthwhile was sometimes lacking, and as such did not always have the anticipated positive impact on business performance.
- **Access to finance during start-up and growth phase: loans.** Apart from the interest-free three-year loans from NIEP made available to four of the enterprises, only three enterprises had taken out any commercial loans during the first-two years of the business. When asked about how easy it was to access loans for agribusinesses, 70 percent (18) of the businesses reported that it was very difficult. The most commonly reported challenges were collateral requirements, followed by high interest rates (20 percent and more per annum). This is consistent with the broader findings on access to finance for SMEs in Ghana (ITC, 2016).
- **Private equity.** Again, consistent with the literature, only one enterprise made any reference to or showed an interest in seeking private equity investment.
- **Working capital and savings.** All of the enterprises used income generated from sales of products as working capital. Hundred percent also reported that they annually reinvested a proportion of net profits into the business. Fifty-eight percent (15) claimed to reinvest 100 percent of any profits into the business with no salary taken for the owners, while others saved between 10 percent and 50 percent of net profit and reinvested the rest into the business.

Enabling environment: Key conclusions were as follows:

- **Infrastructure.** Access. Almost all WYEs had access to electricity (88 percent) and water (70 percent). Sixty-two percent had access to good roads and 38 percent said their internet and telecommunications services were adequate. Seven WYEs had access to a retail markets and four already sold to wholesale markets.
- **Limitations.** Access to good roads was the most common complaint with eight WYEs (31 percent) stating that this was a major issue that had a negative impact on business growth because of higher costs associated with transportation and loss of customers because of access issues. Two WYEs had no access to electricity at all and four had no access to running water. Lack of access to both of these critical inputs were negatively impacting on the growth of the business in terms of value addition options (processing) and increased production costs (purchase of water). Three firms complained of extremely poor internet and telecommunication connections that were limiting customer relationship development, marketing and sales. Access to wholesale markets to grow the business was considered necessary by three WYEs, and storage (cold storage and silos) was raised by five WYEs as another factor significantly limiting the growth of their businesses.
- **Enabling policy environment.** Knowledge of government policies was found to be low, and the majority of WYEs did not believe that there were any policies that specifically targeted them. This is consistent with the “hidden middle” argument that despite the significant economic and social

role that SMEs play in the midstream of the food value chain, they are not recognized in the policy discussions (AGRA, 2019). Five WYEs had no knowledge of any policies; another five were aware that general agricultural/fisheries policies existed but could not name any or provide any details; and 15 WYEs (58 percent) reported that no policies that specifically targeting women and youth existed.

- The most commonly reported national policies that WYEs were aware of were:
 - » The Planting for Food and Jobs (PFJ) and the Planting for Export and Rural Development (PERD) programmes mentioned by six WYEs with three already benefitting from subsidized seeds, fertilizer and agricultural extension training;
 - » The One District One Factory (1D1F) policy mentioned by three WYEs with one WYE earmarked for inclusion in the programme.
- In the poultry sector, one of the WYEs mentioned the Broiler revitalization programme introduced in 2014, which is also supported by the poultry and livestock import policy that was designed to reduce the country's import of chicken meat. The policy limits imports to 60 percent, meaning that importers must buy 40 percent of their produce from local sources. In 2013 the Government of Ghana also removed customs duties on poultry inputs such as feed, additives, drugs and vaccines, and has facilitated improved access to veterinary services to support the development of the sector. Two of the poultry sector WYEs were also found to be benefitting from the USDA Ghana Poultry Project.
- **Dialogue platforms.** WYEs were asked if they were aware of or had participated in any policy dialogue platforms established to provide feedback to the government on issues affecting WYEs. Very few WYEs had any experience with this type of platform and the six that did felt that these platforms were highly politicised and rarely translated into any pragmatic activities that support business growth. One WYE also felt that opportunities to participate in dialogue platforms are usually given to larger industry players rather than SMEs.
- **Negative policies.** WYEs identified a number of policy issues that they believed had a negative impact on their businesses. These included inadequate support to access affordable credit; negative impacts on consumer spending as a result of the financial sector clean-up policy; unfair tax policies (with the exception of the fisheries sector where no tax was charged); high fuel costs; inadequate support to farmers to encourage adoption of good agricultural practices; costly bureaucracy related to annual fees for business registration and land registration; poorly targeted and politicised policies that do not reach those enterprises who need them most.
- **Overall,** WYEs felt that the government was not doing enough to support the development of their businesses and that addressing some of the earlier mentioned infrastructure limitations and negative policy issues would be a step in the right direction. This is an accurate interpretation as policies more often target producers in Ghana rather than processors and traders. These findings are also consistent with the recommendations in the AGRA (2019) report which suggests that unless enabling environment issues are addressed, governments will not realise the full economic and social benefits of stimulating growth of agri-SMEs. Policies should take a value chain approach and consider the needs of all value chain stakeholders. Producer associations were often mentioned while trader and processors' associations were not present in all subsectors. These associations could be part of a value chain platform and help to lobby for inclusive policies for WYEs.

The **value chain** analysis examined the position of the WYEs in the value chain *vis-à-vis* linkages to upstream suppliers and downstream customers and access to necessary support services. Key conclusions were as follows:

- **Suppliers.** Seven of the enterprises (27 percent) sourced raw materials directly from farmers or farmer groups/associations. This close relationship with community farmers as suppliers of raw materials again highlights the interconnected nature of SMEs operating in the midstream of the value chain and farmers producing raw materials (AGRA, 2019). However, a vibrant private sector for inputs also exists in Ghana, with 65 percent of WYEs (17) sourcing some raw material from commercial suppliers (which include green houses for vegetables, commercial farms for fruits, fishing boat operators, private hatcheries and feed companies for poultry and fish feed, providers of veterinary services). Fish feed can also be purchased through a public supplier (the Fisheries Commission District Office) although some issues with supply were raised. Nine of the enterprises (35 percent) produce some of their own raw materials and only source outside if their own supplies are insufficient.
- Offering credit was considered as one of the key attributes that would make a good supplier even better. Six enterprises (23 percent) had an agreement for some form of credit/part-payment option with their suppliers. No enterprises had had any experience sourcing raw materials through online platforms, and only two WYEs were aware that this was possible but felt that the current scale of the business did not warrant sourcing in this manner. Again, this supports the findings that current adoption rates of ICT services are low, and they may not be tailored to suit the business needs of SMEs/WYEs.
- **Customers.** The WYEs sell their products to a range of customers, including individuals through direct-to-consumer sales (either at farm gate or retail activities such as food and drink stands). They also sell to corporate clients, wholesalers, local market agents (market women), food vendors, hotels, restaurants and chop bars. Only two WYEs had had experience supplying to a supermarket and shopping malls.
- When asked if their products could adequately meet the expectations of their clients, 69 percent (18) of the enterprises answered that they could. Three reported that they could meet quality but not the quantity demanded by their customers, and there was no mention by any of the WYEs of collaborative arrangements or sub-contracting other producers/WYEs as a solution to respond to this demand.
- Twenty-one of the WYEs (81 percent) had long-term customers of two years or more, which is a good indicator of the market demand for their products and their ability to meet this demand.
- In terms of a customer development strategy, only 12 WYEs (46 percent) were able to verbalise their approach. Common approaches include participating in trade fairs, business-to-business meetings, distributing free samples at social events such as weddings, focusing on increasing sales to existing customers, and introducing new product lines and packaging. 42 percent (11) of the WYEs reported using social media to help market products, but no other ICT solutions were mentioned.
- **Support services.** Seven of the WYEs (27 percent) reported no use of any support services, except for training that was provided to them during the start-up phase. Nineteen WYEs used some form of support service to run their business. The most common service used was transport, with 11 WYEs (42 percent) engaging services of public bus, car, truck, motorbike and tricycle drivers to both deliver finished products and source raw materials. This was followed by finance (5 WYEs); waste collection services for the waste generated from cold rooms (2 WYEs); extension services provided by the District Extension Office (2 WYEs); packaging material (1 WYE); outsourcing of primary processing of raw materials to a farmers' association (1); and carpentry services (1).
- A number of gaps exist in service provision to agro-enterprises in Ghana. No enterprises reported to have engaged with any ICT service providers and there was also a noticeable lack of quality assurance inspection service providers, consistent with the findings stated earlier that standardization of products is lacking and this is reflected in the low adoption of quality systems.

- **Associations.** Thirteen of the enterprises (50 percent) were members of some form of association. The recently established Fish Processors and Traders Association was very popular amongst WYEs operating in the fishery/aquaculture sector, and other WYEs were members of a range of commodity associations, including rice planters association, oil palm growers association, cocoa growers association, poultry growers association and the rabbits association of Ghana. Non-commodity associations that were also popular were the African Women in Agribusiness online platform and the Young Professionals in Agricultural Development Network. Despite recommendations made during the FAO RAI workshop in August 2019, none of the WYEs were members of any village savings and loan associations (VSLA) and did not see these as suitable for agribusinesses as their capital requirements differ and their activities are not homogenous. WYEs prefer to be involved in commodity-based associations with members who share common production and marketing interests, although there was no evidence of any collaborative marketing occurring among the WYEs involved in the study. In terms of services provided, several of the WYEs wished their associations would also help facilitate access to (affordable) finance.

For the **livelihood** lens the study explored how profit from the business feeds back into supporting families (i.e. dependents) and sought to identify risk elements that can affect the **sustainability** of the business. A **SWOT analysis** of each business was also conducted along with a **competitor analysis**. Key conclusions were as follows:

- **Dependents.** A high number of dependents were supported from the income generated by the enterprises, indicating the clear positive social externalities of investing in WYEs. An estimated 108 dependents are supported by the owners of the 26 businesses.

Sustainability

- **Business plan.** Around half of the enterprises had a business plan. The main constraints to achieving their plan included lack of capital, technical and marketing know-how, insufficient raw material supply, lack of government support/unfavourable policies, climate change and disease outbreaks, and poor infrastructure.
- **Succession plan.** Many of the companies had succession plans, but 15 percent of the enterprises (4) had no succession plan in place and were unsure who would be able to manage the business in the absence of the owner on a short-term or more permanent basis. Sixty-two percent of the enterprises (16) identified family members who they hoped would take over the business. This is not surprising, given that 54 percent of the enterprises (14) interviewed were classified as family businesses. Many of these businesses had been proactive in getting children and partners already involved in the business. In the fisheries sector, several of the business owners had been involved themselves in the business since childhood; therefore, the tradition of family ownership and succession of the business by family members (i.e. owners' children) was strong. Several of the non-family businesses also had succession strategies in place to ensure that partners or employees would step up and take over operations if needed. This is a positive sign that may help the long-term sustainability of these enterprises.
- **Risk factors leading to failure.** Some of the most commonly perceived reasons for the failure of WYEs were desire for rapid growth and "quick money" during the start-up stage; lack of capital to sustain growth of the business; poor record-keeping and financial management and insufficient reinvestment; a lack of commitment and passion; for female-led enterprises, time constraints, family commitments and lack of support from husbands; high raw-material costs; lack of market access; and lack of government support. Gender-based constraints (GBC) may result in lower value addition undertaken by women compared to men. However, more in-depth analysis is needed to help inform policy dialogue on GBC.

- **SWOT analysis.** The most important **strengths** as perceived by the enterprises can be categorised as (1) intangible assets, such as social networks and relationships with consumers and suppliers; (2) technical skills, such as knowledge of farming and processing; and (3) quality of the products.
- The most important **weaknesses** can be categorised as (1) lack of quality assurance; (2) lack of value-addition; (3) limited access to capital, infrastructure and markets; (4) constraints in meeting consumer demand; and (5) “other”, including weak bargaining position and low market share.
- The most important **opportunities** were (1) market opportunities; (2) ability to meet demand (related to the first); and (3) ability to diversify.
- The biggest **threats** were related to (1) competition, (2) enabling environment factors and (3) biosafety and other environmental factors. Specific value chain constraints were seldom mentioned.
- Many of the enterprises perceived a lot of competition in their value chain. Some of the companies seem to have good strategies for defending their share of the market by offering quality products, finding a niche or diversifying into other value chains or segments of their value chain. Many are, however, without clear strategies.

Finally, the **gender** lens aims to understand any differences in terms of access to resources, services, decision-making and political voice between men, women and youth-run enterprises, as well as differences between family and non-family businesses. Key conclusions were as follows:

- Only one firm raised a gender-specific issue about managing and retaining staff: Oak Farms was attempting to train women to operate heavy farm machinery, yet the owner felt that cultural norms made it difficult for them to stay in these roles as they were perceived as “men’s jobs”.
- Eighty-eight percent of the enterprises felt that it was equally difficult for women and youth-led agribusinesses to access loans as it is for any other SME operating in the agricultural sector; yet eleven percent (three) felt that there were additional challenges for women and youth-led businesses. One WYE reported that women are often seen as “weak” by the banks and considered less able to repay loans, and two others felt that youth enterprises could also be disadvantaged because of perceptions of inexperience in running businesses.
- Only three enterprises reported using no mechanization at all in on-farm and processing activities because of the cost of acquiring such equipment. While this is not a representative sample, all these three businesses were women-led enterprises, which may suggest that women have greater difficulties acquiring or hiring necessary machinery.
- Fifty percent (13) of the enterprises felt that access to education and training was equal regardless of gender and age. Twenty-seven percent (7) did not comment on this issue, and 23 percent (6) felt that access was not equal, with adult males receiving preferential access to training because of their connections, longer standing in the community, additional resources to pay for training, and greater knowledge on where to look for training opportunities.
- For woman-led businesses, family commitments, time constraints, extra household work and a lack of support by husbands were cited as key reasons for early failure. Also, women-led businesses often support many dependents, leaving little over for reinvestment, i.e. double burden of caring for children and at the same time trying to grow the business.
- Some differences between family and non-family businesses were identified when discussing succession plans. While family businesses mostly identified family members as their successors, several non-family businesses had developed succession strategies that do not rely heavily on the ongoing involvement of the business founder or specific individuals, but rather are looking at new

models of operation to secure the long-term sustainability of the enterprise including private equity investors. This is perhaps one advantage that non-family enterprises have over family enterprises: the ability to recognise changing circumstances in the future and the freedom to adapt accordingly without the constraints of family ties.

Recommendations

Based on the extensive findings from the surveys, the following recommendations can be made:

- **Access to affordable capital and mechanization.** Without a doubt, access to capital was the most pressing issue raised by all WYEs throughout almost all sections of the survey. Innovative solutions supported by government are required to address unrealistic collateral requirements, high interest rates and a lack of tailoring of financial products to agribusiness activities. Lack of capital is greatly restricting the further growth and income-generating potential of the businesses, and this is having impacts on all areas of their operations, e.g. human resources (low salaries paid to workers), quality assurance (lack of capital to invest in QA systems), but it is a particular issue when it comes to mechanization. Mechanization of business operations in terms of input supply (e.g. feed production) primary production, post-harvest and processing remains low with relatively basic equipment used. Many of the enterprises wanted to expand/upgrade value-addition activities by acquiring processing machinery, but access to affordable asset loans does not appear to exist. Options must be investigated to overcome this issue. If the Government of Ghana intends to truly capitalize on the growth potential of WYEs operating in the “hidden middle”, then something must be done to address the issue of access to capital to support agro-industrial mechanization in the midstream of the food value chain. Preferential policies (that are embedded in a value-chain upgrading vision) to support women-led agribusiness enterprises to access mechanization may also be needed, as anecdotal evidence suggests that it is even more difficult for women to acquire or hire necessary machinery than for male youth-led enterprises because of cultural norms.
- **Training and education – ICT use, marketing, quality assurance and financial management.** These are the four critical areas where upskilling is required by all WYEs. However, in addition to these, many WYEs still require further training in basic technical production aspects to protect their businesses from unexpected shocks (e.g. climate change, pest and disease outbreaks etc.).
- **ICT.** Despite high use of mobile phone technology and widespread use of social media Apps for marketing products, adoption rates of other ICT solutions are low (e.g. platforms/Apps that could be used for accessing agricultural knowledge and advice, machinery hire services, weather forecasts, market and price information). Training and education are needed to increase awareness of the availability of ICT services and use of ICT solutions to support the growth of women-and youth led agribusinesses. Dialogue platforms between agri-WYEs and ICT providers should also be encouraged so that services can be developed that are better tailored to meet their diverse needs. WYEs are open to the adoption of ICT solutions but are lacking the skills and knowledge of how this can be achieved. They specifically requested support to develop websites, create Apps that would allow them to communicate with their suppliers (farmers) and customers, set up e-commerce platforms for the trading of livestock and use drones to monitor on-farm input use.
- **Marketing.** The majority of WYEs lacked a marketing strategy and also made no reference to horizontal or vertical integration options that could potentially improve their businesses. Given the lack of a strategy to defend their share of the market among many companies, there is a need for advice and capacity development in this area. Traditional marketing, and digital marketing training in particular, could help the businesses to target and reach specific customer groups. However,

beyond marketing, enterprises involved in value addition appeared to be in a better position to set prices than those who were only involved in production. Therefore, those WYE engaged solely in production may need support in diversifying into midstream segments of the value chain and exploring horizontal collaboration options.

- **Quality assurance.** While official certification may not be a prerequisite at this stage to operate in some segments of the value chain or when targeting local markets, all enterprises involved in agriculture and food value chains need to consider food safety and quality to remain competitive. Capacity development in this area is needed to train all WYEs in basic food safety and hazard management processes (e.g. HACCP) and related requirements under government certification schemes. Adoption of quality standards in the future will facilitate the access of safe and nutritious food for domestic consumers as well as increase the competitiveness of Ghanaian WYEs to supply to customers in higher value markets. There is a need for standardization procedures to be developed to support startups and rural enterprises.
- **Financial management.** Over 50 percent of the enterprises were either returning low net profit to owners (with 31 percent earning less than GHS 5 000) or operating at a loss (23 percent) based on 2018 figures. Many struggled to identify their variable and fixed costs and for several WYEs it was difficult for them to estimate their total production outputs and raw material inputs per year. This clearly indicates that better financial management skills and improved record-keeping is needed in order to keep track of the growth and development of the business and identify ways to increase profitability by reducing costs or increasing sales/diversifying products, rather than relying on general market trends as an indicator of the viability of the business. One such option would be to undertake financial business appraisals of the enterprises in a group setting with simultaneous training on advanced record-keeping and basic financial analysis tools to improve levels of financial literacy.
- **Upgrading of public infrastructure.** Consistent with the recommendations in AGRA (2019), findings from the study indicate that urgent investments must be made to ensure all WYEs in rural, peri-urban and urban areas all have a minimum access to electricity, running water, good road networks and telecommunications. These are the fundamental needs for running an agribusiness and without them production costs increase, making it very difficult for the enterprises to generate a profit and remain viable. Access to wholesale markets are also needed to grow the business as well as storage facilities (cold storage and silos).
- **Designing policies to target the “hidden middle” and addressing the impact of existing negative policies.** Most of the enterprises were involved in processing (77 percent or 20 WYEs) and many were also directly engaged in on-farm production activities (60 percent, or 12 out of the 20). Those engaged solely in wholesaling or processing had direct links to local farmers, which again confirms the importance of SMEs in the midstream of the value chain and the strong backward linkages to production. Therefore, any policies targeting WYEs must also consider the importance of this dyadic relationship and aim to maximise the growth opportunities for both sets of actors either as individuals or as joint enterprises. Gender-based constraints also need to be specifically addressed where evidence indicates that action is needed, particularly to support the upgrading of value-addition activities for women-led enterprises.
- Dialogue platforms established to provide feedback to the government on issues affecting WYEs were considered to be ineffectual by several WYEs. The major complaint raised was that they never result in actions. While these vehicles can provide a valuable forum for enterprises to share their constraints and grievances with government, and for government to use the issues raised as inputs into the design of targeted policies, the purpose of these initiatives must be clear from the outset.

In order to build trust with WYEs in the policy-making and implementation process, at least some concrete actions must result from these initiatives. These platforms can often be used to support the development of chain-specific upgrading plans and may prove a useful way of recognizing the potential role that WYEs can play in the midstream of the chain.

- The perception among the WYEs that there was a lack of enabling environment and a number of policies negatively affecting small agro-enterprises should be addressed. Policies to increase access to affordable credit may be put in place and adoption of good agricultural practices can be supported by government interventions. Various bureaucratic hurdles and taxes for SMEs may also be scrutinized and possibly lowered, such as fees for business and land registration.
- **Vertical integration of feed production (aquaculture and poultry enterprises).** Given the high cost of poultry and fish feed and low profit margin of many companies operating in the aquaculture and poultry subsector, coordinated efforts must be made to lower feed costs. For the poultry sector, there are already several ongoing initiatives both in research and in the USDA GPP donor project to begin to address this issue. However, during the interviews, many of the fish production and poultry enterprises made requests for support to learn how to produce their own feed, and the findings from the financial analysis section clearly indicate that feed cost is a critical issue affecting the survival of these businesses. Technical support and financial assistance should be provided where possible to assist enterprises to diversify into feed production activities, and outgrower arrangements for the production of feed should be explored.
- **Future-proofing WYEs against the negative impacts of climate change and biosecurity risks.** When undertaking the SWOT analysis, several of the WYEs identified the impacts of climate change and biosecurity risks (partly lack of availability of veterinary services, access to inputs and lack of training) as key threats to their business that they believed would gain in significance in coming years. Specific policies should be put in place to assist enterprises to design and implement climate proofing strategies and training should be provided to all poultry and livestock WYEs in animal biosecurity measures to prevent disease outbreaks.
- **Increased efforts to understand the differences in challenges facing adult women, female and male youth-led enterprises, and family versus non-family enterprises.** The findings from this survey did not uncover many clear differences in terms of gender-disaggregated access to resources, services, decision-making and political voice between men, women and youth-run enterprises, as well as differences between family and non-family businesses. However, the sample size for the survey was small and is by no means representative of all WYEs participating in the agricultural sector. Increased effort should be made to conduct further research in this area so that policies and strategies can be developed to address any differences that may emerge in an attempt to create a level the playing field that supports the growth of all agro-enterprises regardless of gender, age and family status.



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▶▶ 1. Background

Between 2015 and 2017, FAO organized a series of multistakeholder workshops on Responsible Investment in Agriculture and Food Systems (RAI) in Ghana, Malawi, Mozambique, Senegal and United Republic of Tanzania, as part of the Inter-agency Working Group (IAWG) programme on principles guiding new investment in agriculture. Workshop participants discussed general and context-specific issues related to responsible investment in agriculture and food systems. In Ghana, workshop participants identified gender and youth issues as particularly relevant to their needs and interests in relation to RAI.

Based on these findings, in 2018–2019, FAO supported an initiative on the involvement of women and youth in responsible investment in agriculture and food systems in Ghana. Women and youth involved in the agricultural sector and other key stakeholders, including the government and service providers, engaged in an initial round of online dialogue and face-to-face discussions to identify challenges and opportunities to enable women and youth to participate more meaningfully in agricultural value chains. The initiative was a practical way to support the operationalization of the CFS Principles for Responsible Investment in Agriculture and Food Systems (CFS RAI), and is particularly aligned with Principle 3 on gender equality and women's empowerment, and Principle 4 on engagement and empowerment of youth.

The second period of online discussions took place from 29 April to 6 August 2019, and a one-day workshop was organized by FAO in Accra on 1 August 2019 to give online forum participants the opportunity to meet in person, to further exchange views, and to know more about the various initiatives that were mentioned online. Participants discussed a draft action plan and concrete activities that had been raised during earlier events and on the online forum. These activities related to land access, rural knowledge networks, innovation and Information and Communication Technology (ICT), women and youth-led agribusinesses and public-private partnerships. Many of the participants in the initiative are also engaged in small-scale household agribusiness enterprises, therefore several of the activities that were suggested aimed at addressing the challenges and opportunities for women and young people to start and operate enterprises along agricultural value chains.

Women and youth-led agro-enterprises (WYE) (which may also be operating as family businesses) in agricultural value chains have been identified as catalysts for rural transformation, given their potential for creating employment and stimulating value addition both on and off farm. However, knowledge on such businesses in Ghana, especially those led by women and youth beyond primary agriculture, appears to be limited. A study on the composition and needs of such businesses was suggested as a result of the earlier mentioned initiative to better understand how this target group may be supported by FAO in the future.



NAME: ALOE VERA
SCIENTIFIC NAME: ALOE BARBADENSIS
PLANTING CULTURE: VEGETATIVE PROPAGATION
FAMILY: LILIACEAE (ASPHODELACEAE)
MATURITY PERIOD: 6 MONTHS
TYPE: PERENNIAL
SPACING: 3x3
WATER USE: MODERATE
PRODUCTIVITY: 1000g/kg/ACRE PER YEAR
(ONCE ESTABLISHED)
USE: FOOD, COSMETICS, NATURAL/MEDICINAL

► 2. Justification for the focus on women and youth-led agribusiness enterprises in Ghana

Decent work opportunities and the “hidden middle” of food value chains

High economic growth rates in Ghana during recent decades led to an increase of employment rate to almost 80 percent. However, the labour force participation of women did not increase at the same rate as of that of men. A high incidence of people in vulnerable employment, characterised by poor working conditions, no social security and limited earnings, coupled with a large number of young people entering the workforce each year, means that the underemployment challenge will increase in coming decades (ILO, UNICEF and World Bank, 2016). There is thus a need to develop sectors with a high employment-generation potential.

Consistent with other African countries, over 50 percent of Ghana’s labour force is engaged in agriculture (FAO Ghana webpage, 2019). Many people who are engaged in agricultural production are also likely to be involved in other livelihood activities, within and outside of agriculture value chains. According to AGRA (2019), approximately 40 percent of non-farm work (and 25 percent of all work) in Africa occurs within the agriculture and food value chains, such as wholesale, logistics, processing, and retail. Agriculture and related sectors will likely continue to be the dominant sector moving forward, providing employment for the majority of young women and men in Africa over the next few decades, where the young population is expected to double to 830 million by 2050 (OECD 2018; Badiane et al., 2018). In recognition of the need to address this issue of burgeoning un- and under-employment of youth, in 2017 the G20 pledged to support the African Union to double the total productivity and increase youth employment by 30 percent in the agricultural sector by 2030.

Both the agricultural and non-agricultural sectors in Ghana are characterised by a high degree of informality. Over half of the adult workforce are self-employed or engaged in family-related economic activities. Less than 25 percent of the total adult workforce is engaged in formal wage employment and only 13 percent of adult women have formal jobs. This is consistent with findings across the continent, where it is estimated that only 15 percent of jobs in African countries are in formal wage labour (Dekker and Hollander, 2017). Overall, labour productivity in Ghana is low. A high incidence of child labour is also a major concern, and employment conditions for females in urban areas are considered to be particularly precarious. The employment situation for young people between 15 and 34 years of age is also challenging as most are engaged in low skilled, informal jobs. Child labour and the lack of decent work² opportunities reduces the resilience of people and communities by exacerbating social vulnerability, marginalization, poverty, underemployment and low wages (ILO, UNICEF and World Bank, 2016).

As rural transformation unfolds, the share of the workforce engaged in wage labour will grow. However, at present, wage labour is often less remunerative and more temporary than self-employment in many African countries. Women are also more likely than men to be engaged in self-employment activities than wage labour, which suggests untapped potential for harnessing the entrepreneurial spirit of women and increasing employment prospects through the strengthening of women-led agribusinesses as important actors in the food value chain (World Bank, 2016; Bishop and Sato, 2017). This is particularly the case in the midstream of the chain which consists of traders, transporters and processors.

² According to the International Labour Organization (ILO), decent work involves opportunities for work that are productive and deliver a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.

The midstream of the value chain is estimated to account for about 40 percent of the total gross value of food value chains in sub-Saharan Africa, and 80 percent of the actors operating in this segment are SMEs (AGRA, 2019). This indicates that private sector investment in food value chains is thriving across the continent, with SME businesses purchasing commodities directly from smallholder farmers and then processing, packaging, transporting, and selling food products to the urban and rural consumers, who make 80 percent of total food consumption in Africa. These SMEs also play a large role in providing inputs to farmers, such as fertilizer and seed, as well as farm machinery and pesticides. For this reason, this critical group should not be considered as “missing middle” but more accurately as the “hidden middle” of agrifood value chains in Africa, as they are often neglected from the policy debate with little attempt made to specifically create policies and incentives to support their plight.

Since SMEs are the key employers in this sector and important purchasers of farm outputs, their performance and survival is intertwined with that of rural family farmers. Forty percent of rural employment time is estimated to be spent in self-employed farming, with an additional 25 percent generated in the midstream segment of the chain (processing, wholesale and logistics) (AGRA, 2019). Thus, these two sources of job creation are interdependent, which makes their survival and growth even more crucial, with women and youth particularly benefiting. The creation of an enabling environment for micro, small and medium enterprises through public investment in necessary infrastructure and the reduction of transaction costs for SMEs are also key to the generation of decent jobs (AGRA, 2019).

The SME sector in Ghana is estimated to account for 85 percent of all businesses and contributes about 70 percent of Ghana’s GDP. The sector also provides more than half of all full-time employment in the country (ITC, 2016). While the exact number of family businesses is unknown (because of the informal nature of these businesses), it is estimated that up to 60 percent of these SMEs are likely to have started as family businesses. There is no agreed upon definition of what constitutes a family business; however, some common characteristics have been identified. A family business is one that involves two or more members of a particular family, with financial control and management over the administration, operations and strategic direction of the company (Yensu *et al.*, 2015). In Ghana, family businesses in the agricultural sector are often informal and can be characterised by a low starting point in terms of skills and capital. In many cases, the founders have limited prior experience in the main income-generating activity undertaken by the enterprise. They often employ other family members who may not have completed secondary education yet represent the majority of new entrants to the labour market into sub-Saharan Africa (Filmer and Fox, 2014).

Despite their overall contribution to private sector investment and GDP, the sustainability of family businesses has been questioned. The Family Firm Institute estimates that globally, only 30 percent of family businesses survive to the second generation of family members, 12 percent to the third generation, and 3 percent to the fourth generation and beyond (FFI, 2019). Anecdotal evidence from Ghana suggests similar findings. A recent study of Ghanaian family businesses across a range of sectors sought to uncover the factors that affect the sustainability of family businesses in the Ghanaian context. According to Muithi (2018), of all the factors that affect sustainability, succession planning and family dynamics were found to have the most impact, followed by *founder’s syndrome*, whereby the owners of the family businesses exert excessive control over their businesses to the detriment of the growth and sustainability of the enterprise.

Differences have also identified between women and male-led family enterprises. According to a study conducted by (Carranza *et al.*, 2018), 58 percent of male-owned family businesses were found to have been operating for six or more years compared to only 43 percent of female-headed enterprises. While

the reasons for the higher failure rate of women-led enterprises need to be analysed further, household risk and competing family obligations are likely to be contributing factors in Ghana. Youth enterprises also face their own set of challenges. According to the OECD (2017), the majority of young people in developing countries are self-employed and are, therefore, referred to as “entrepreneurs”, yet in reality they choose to be self-employed for lack of better options and most remain engaged in subsistence activities. They are held back by low levels of education, limited access to finance, high levels of informality and poor or inadequate physical infrastructure. Young women entrepreneurs tend to be even more disadvantaged than men (OECD, 2017).

Other challenges that reportedly inhibit the successful operation of family businesses in Ghana include limited access to finance, low IT capability and access to ICT technology, poor governance mechanisms and a lack of professional management skills. During the workshop held in Accra, access to land was also identified as a key issue for women and youth aiming to start up or expand agricultural-based businesses (FAO, 2020b and 2020c).

In relation to finance, it is generally acknowledged that founders or owner-managers of family businesses in Ghana use equity financing as a source of start-up capital with investment coming from family and friends and partners alone. As the business matures, reinvestment from retained earnings is the predominant model for business expansion as access to capital from commercial banks can be both difficult and costly because of high interest rates (Sarbah and Wen, 2013; Yensu *et al.*, 2015; ITC, 2016). External private investment is rare and in most cases is actively avoided to reduce the potential for loss of control over the family business. This is common worldwide for SMEs and family businesses in particular in both developed and developing countries. Studies have shown that debt finance and private equity are often avoided in favour of equity raised internally by partners or through familial networks, along with retention of profits for reinvestment. Private equity is avoided unless absolutely necessary, with a view to ensuring retention of control over the business and a common strategic objective of pursuing longer-term sustainability over short-term growth in profits (Braidford *et al.*, 2014; Yensu *et al.*, 2015).

However, a compilation of lessons learned by the World Bank from financing SMEs around the world has shown that SMEs (including family businesses) need different types of financing that can change and evolve as they grow. While equity financing from family and friends may be sufficient during the start-up phase of the business and is particularly common in Africa, over time, alternative forms of financing will be needed to prevent stagnation or ultimate death of the business (Alibhai, Bell and Conner, 2017). Reforms to the banking sector and a proliferation of microfinance institutions in Ghana in recent years have reportedly made it easier for SMEs to access debt capital, yet high interest rates remain the main deterrent (ITC, 2016). Calls have also been made to private investors to increase private equity in family businesses as an untapped investment opportunity, particularly in East Africa (Ethiopia and Kenya), where such businesses are entering into second and third generation phases with market capitalization of between USD 10 million and 100 million and changing attitudes towards outside investment in order to remain competitive (Withagen, 2019). In other parts of the world, recommendations have been made to promote financial products better suited to the ethos of family business, such as patient capital (Braidford *et al.*, 2014). For small start-up agricultural enterprises in Ghana, positive experiences accessing (affordable) credit through village savings and loan associations (VSLA) were reported during the FAO workshop, with support for VSLAs proposed as a potential solution to ease access to credit, and working capital in particular (FAO, 2020b).

Although Ghana was one of the first African nations to have established widespread Internet infrastructure, large gaps in access to and use of Information and Communication Technology (ICT)

services by SMEs have been identified (ITC, 2016). Low levels of IT capabilities in family businesses also inhibit the potential of these businesses to effectively manage inventory, reduce lead time of supplies and capitalize on strong social ties with customers through social networks (Donkor *et al.*, 2017). The adoption of ICT in agriculture has the potential to provide solutions which significantly reduce the costs of service, inputs, and information delivery for farmers and other value chain intermediaries (CTA, 2019b). These technology-based solutions can help address three critical challenges facing African countries, with women and youth reportedly benefiting: increasing productivity, access to finance, and market linkages. Yet a number of challenges remain to be addressed on both the demand and supply side of ICT. *The Digitalisation of African Agriculture Report 2018–2019* (CTA, 2019a) highlights that (i) although 30 million smallholders are registered in digital applications, this represents just 10 percent of the market; (ii) only 25 percent of users are women; and (iii) 75 percent are in the ‘youth’ age group, despite the average farmer age being much higher.

The high share of youth engagement in ICT in agriculture is good news, and perhaps unsurprising, given the high rate of adoption of smartphones among youth, which is one of the key technologies that is opening up opportunities for farmers and agribusiness firms to gain access to agricultural knowledge and advice, machinery hire services, weather forecasts, digital banking, market information, and more (USAID, 2018; FAO, 2019d). A recent spike in donor and government-supported e-agribusiness competitions have also highlighted the tech-savvy nature of youth entrepreneurs and their ability to develop ICT solutions for agriculture (CTA, 2018).

However, women are in danger of being left behind. Women in Africa are 14 percent less likely to own a mobile phone than men, which means that they have more limited access to the mobile phone-enabled services that are helping farmers and enterprises to stay informed, receive financial support and reach higher-value markets (CTA, 2019a). Women are also under-represented in the development of ICT solutions and e-agribusinesses, as well as in the formation of data policy (CTA, 2018). Overall, it appears that companies are not sufficiently prioritising gender as part of their product design, marketing and user-engagement efforts (CTA, 2019b). During the FAO workshop, both women and youth participants reported limited access to ICT solutions in Ghana and stated that there was often a mismatch between the services offered that were biased towards monoculture, and the technology solutions needed by women and youth to support diversified agribusiness operations (FAO, 2020b). More work is clearly needed in this area to make ICT solutions better tailored to the needs of women and youth and more available to women in particular.

In relation to access to land, it is a well-known fact that agricultural producers with secure tenure rights have a greater ability and incentive to make long-term and sustainable investment. Yet, in many countries the process of accessing land is complicated, and the protection of legitimate tenure rights is limited. Landlessness is an important driver of rural–urban migration (IFAD, 2014). People with difficulties in accessing farmland may often attempt to engage in off-farm livelihood activities within or outside of the agricultural sector. However, because of the limited development of the industry and service sectors, land (including farmland, pasture, forests, fisheries, etc.) is still a key factor of production and source of livelihood in low-income developing countries.

The protection of tenure rights of women and young people are often particularly weak, their access to land may depend on their relationship to elder males, and access on a permanent basis is limited. Across sub-Saharan Africa, it has been estimated that only 15 percent of landholders are women (CTA, 2018). Landholders may be unwilling to grant access of land to youth since their own plots are already small because of demographic pressures (IFAD 2014).

Both women and youth that participated in the FAO workshops and the online forum expressed constraints in accessing land for agricultural production (FAO, 2020b). Ghana has a pluralistic tenure system, where customary and statutory frameworks overlap (FAO, 2020c).³ The literature is divided on the extent and impact of discrimination in land tenure governance in Ghana. However, it has been reported that customary authorities often treat land as their private property. Even though they hold land in trust for their community and kinship members, they may allocate and withdraw rights without consideration of broader community interests and needs, and legal prescriptions of equality such as equal inheritance rights of women and men may be ignored (FAO, 2013). Persistent patriarchal norms, and increasing commercial pressures that enable landholders to extract higher rents from external investors, are other factors that may have a negative impact on poor women and young people. Donor-driven initiatives to improve tenure governance through privatisation have reportedly also failed to address discriminatory practices, because of the inability to incorporate gender and equity dimensions (Britwum *et al.*, 2014). Thus, it appears that challenges associated with land remain to be addressed when it comes to empowering women and youth agribusiness enterprises in Ghana.

In sum, the importance of SMEs and family businesses as key contributors to job creation and the economic development of the African economy as a whole, and the Ghanaian economy in particular, is clear; yet significant internal and external (enabling environment) challenges remain that inhibit their ability to thrive. Given that agriculture and related industries are likely to remain the key sector for employment in Ghana over the coming decades, and that 80 percent of all activities in the midstream food value chain are undertaken by SMEs in Africa, the strategic link to the empowerment of women and youth-led agribusinesses in Ghana is clear, given that these two groups are more likely to be self-employed than engaged in wage labour. On this basis, there is an urgent need to better understand the factors that motivate the success, failure and sustainable growth of these businesses. This exploratory study represents a first step towards generating evidence to support the argument that family, women and youth-led agribusinesses have a key role to play in the rural transformation under way in Ghana. The survey seeks to uncover practical insights from a group of 26 women and/or youth-led businesses operating in rural and peri-urban areas in Ghana, with the view to developing recommendations that can help to guide the development of an agenda on this topic for the FAO Regional Office for Africa (RAF) moving forward.

The value chains from which the WYEs were chosen included fish and aquaculture, poultry, pig, rabbit, goat, rice, fruit juice, spices, cassava flour, yam, maize and bean value chains. Some characteristics of these value chains are provided in Annex 3.

³ The Constitution of Ghana vests State/government land in the State, customary land in clans, extended families and customary authorities and individual/private land in individuals or private entities. Depending on under which type of tenure a piece of land is governed by, it may be accessed through market mechanisms such as leasing, purchasing, share cropping or non-market mechanisms such as inheritance, gift, or usufruct rights of common property.



▶▶ 3. Analytical framework

The issues identified during the online forum and workshop held in Accra in August 2019 were used as the starting point for guiding the development of this study. They were further validated and enhanced by a supplementary review of the literature covering topics such as rural transformation and the role of SMEs in Africa, the history and growth of family businesses in Ghana, and other critical issues identified as inhibiting the development of women and youth-led agro-enterprises such as access of women and youth to ICT and finance, education and training, mechanization and land. A number of discussions with the RAF Gender Team were also undertaken prior to the development of an agreed analytical framework for this study.

The framework applies five analytical lenses – **labour, enterprise, livelihood, gender and value chain** – and is guided also by an investment focus linked to the CFS RAI principles, and an analysis of the enabling environment for SMEs in the agricultural sector. Each of these lenses have been deconstructed to incorporate specific questions in the survey guide developed (Annex 1) to gain insight into the history of the enterprises and challenges and opportunities faced under each category and at different stages of development (e.g. start-up versus growth phase). For example, under the **labour** lens, we are predominantly interested in determining the extent to which the enterprises can create and sustain decent employment opportunities; under the **enterprise** lens we explore the main income-generating activity of the business and any threats to survival such as competition and seasonality issues. A financial analysis section was also added to assess the financial health of the business over the previous financial year of operations (2018), as an indicator of the future sustainability of the business. The **value chain** analysis equally contributes to understanding the potential for growth and survival of the business by examining its overall position in the value chain vis-à-vis linkages to upstream suppliers and downstream customers and access to necessary support services. For the **livelihood** lens, we explore how profit from the business feeds back into supporting families and seek to identify household risk elements that can affect the business (e.g. childcare, illness, lack of succession planning). Finally, the **gender** lens aims to understand any differences in terms of access to resources, services, decision-making and political voice between men, women and youth-run enterprises.



▶▶ 4. Findings from the surveys

Based on the analytical framework described above and supporting literature review, a semi-structured survey was designed in ten parts to cover the full scope of social, financial and sustainability issues identified as relevant to women and youth-led agricultural enterprises (WYE) in their early stages of investment in Ghana (Annex 1):

1. Profile of the enterprise
2. Business operations (Start-up phase Year 1–2 and beyond)
3. Enabling environment
4. Products and production process
5. Food safety and quality assurance
6. Value chain analysis (WYE as focal actor)
7. Competitor analysis
8. Assessing financial performance
9. SWOT analysis
10. Conclusions and recommendations.

Selection of WYEs. A total of 26 WYEs participated in the survey (Annex 2). Selection was purposeful based on a set of minimum criteria to allow for greater insight into the motivation for starting the business and current operational successes and challenges. Where possible, the enterprises must have been in operation for a minimum of three years (at least from 2016), be self-classified as a woman or youth-led enterprise (or both), and may or may not also be classified as a family business depending on the extent of involvement of family members in the business (i.e. minimum of two members from the same family). Seven enterprises were pre-selected based on their participation in the online forum and FAO workshop held in August 2019, and the remaining nineteen were selected based on information provided by key informants or following a snowball sampling technique based on recommendations from other participating enterprises. An attempt was also made to take into consideration the geographical representation of the enterprises, with an objective of achieving 50 percent selection from rural areas and 50 percent from peri-urban and urban areas. This was mostly achieved with 46 percent of enterprises (i.e. 12 enterprises) operating in areas that could be classified as “rural”, 38 percent (10 enterprises) from peri-urban areas and the remaining 16 percent (4 enterprises) identified from urban locations. WYEs were also purposely selected to represent businesses operating in a number of diverse value chains and activities. They operated in four main subsectors: horticulture (3); food crops (4); fish (8); livestock and poultry (11).

1. Profile of the enterprises

To begin, each enterprise was required to provide some basic information on the history of the enterprise and current business operations. Table 1 provides a summary of this information. From the 26 enterprises selected, 54 percent (14 businesses) were female-led enterprises with 38 percent of these (i.e. 5 out of the 14) classified as both youth and woman-led, 31 percent (8) were male youth-led businesses with owners under the age of 35, and 15 percent (4) were adult male-led businesses but were selected on the basis that they had started out as youth-led businesses (i.e. owners began the business when they were less than 35 years old) or were also classified as family businesses. A total of 54 percent (14) were also classified as family businesses, thus confirming the close interconnection between family businesses and youth and female-led SMEs.

The longevity of the business operations also varied: 27 percent (7 businesses) of the businesses had been in operation for more than 10 years (i.e. established); 38 percent (10) for between 4 and 9 years (i.e. growth phase); and 35 percent (9) had been in operation for three years or less (i.e. start-up phase). Compared to the frequently reported lack of formality in the SME sector in Ghana, a high proportion of the businesses were officially registered with the appropriate authorities (e.g. Registrar General Department and/or the National Board for Small Scale Industries (NBSSI). 62 percent (16) of the WYEs were officially registered as either limited liability companies (4), SMEs (1) or sole proprietorship businesses (sole trader) (11). This relatively high level of registration indicates that the business registration process in Ghana is not considered to be particularly onerous, with no enterprise reporting difficulties in completing the process, and those who were not registered either expressed an intention to do so in the future, or felt it was not necessary as their business had yet to achieve the scale of an “official business”. The assumption that enterprises located in rural areas are also less likely to be registered was not proven here, as of the ten unregistered businesses, five were located in rural areas and the remaining five in peri-urban/urban areas. Apart from geographical location, the sector may also influence registration given that 100 percent of the WYEs in the fisheries sector are registered.

WYEs were also purposely selected to represent businesses operating in a number of diverse value chains and activities. They operated in four main subsectors: horticulture (3); food crops (4); fish (8); livestock and poultry (11); and 77 percent (20 enterprises) were also engaged in some form of value-adding activities such as primary processing and packaging for sale of products to wholesalers and consumers. Again, this finding is consistent with the AGRA (2019) report that highlights the important role of SMEs in the midstream of the food chain and their strong backwards linkages to production activities. In this case, 60 percent (12/20) of the enterprises involved in processing were also directly engaged in on-farm production activities, and those engaged solely in wholesaling or processing activities had direct links to local farmers as suppliers of choice (see Section 4.6 VCA Suppliers).

Table 1 Summary of background information on WYEs

Company Name	Value chain	Business Type	Location type	Woman or Youth	Family Business	Date begun	Registered (Year)
Adom Marada Farms	Poultry	Production	Peri-urban	Youth	No	2016	2019 as a SME
Anderson Agumbilla	Pigs	Production	Peri-urban	Adult male	No	2017	No
Acquatic World Industries	Fish	Processing	Peri-urban	Woman	No	2014	Yes 2014 Ltd enterprise
Ayeh Farms	Rabbits	Production and processing	Rural	Women	Yes	2014	Yes 2014 Ltd company
Benjbelle Company	Catfish	Production & processing	Peri-urban	Youth	Yes	2014	Yes 2019 as Ltd company
Cecilia Fish Products	Fish	Processing	Rural	Woman	Yes	Began about 30 years ago (1990)	Yes 2005
Daniel Oppong	Poultry	Production	Rural	Adult male (ex-youth)	Yes	2011	No
David Kuwornu Akumani	Pigs	Production processing and retailer	Rural	Adult male	Yes	2006	No
Doris Ahadzi Enterprise	Fish	Processing	Peri-urban	Woman	Yes	1993	Yes 2009
E-Juice Company	Fruit	Processing	Urban	Woman	Yes	2013	Yes 2016 Limited company
Emmanuel Gyabaah	Poultry	Production	Rural	Adult male (ex-youth)	Yes	2017	No
FAAMA MICK	Catfish	Production & processing	Urban	Youth	Yes	2018	Yes 2019 as sole trader

Company Name	Value chain	Business Type	Location type	Woman or Youth	Family Business	Date begun	Registered (Year)
FarmHup	Vegetables	Vegetable wholesaler	Peri-urban	Both	Yes	2016	Yes 2018
Fertile Acres Farms	Poultry	Production and processing	Peri-urban	Both	No	2015	Yes 2016 Sole trader
Goat Masters	Goat	Production and processing	Peri-urban	Youth	No	2000	Yes 2016 as Ltd company
Jesko Farms	Catfish	Production & marketing	Rural	Youth	Yes	2004 started with poultry	Yes 2012
Kenny Farms	Cassava, vegetables, cereals, coconut	Primary production	Rural	Youth	No	2009; 2014 cassava cultivation began	Not yet
Mariseth Farms	Oil palm, cocoa, rice, plantain and maize	Production and wholesale	Rural	Both	No	2012	Yes 2016 as sole trader
Mountain Brown Rice	Brown rice and processed rice products	Production, processing and wholesaler	Rural	Woman	Yes	Began in 2000	Yes 2004
Mr Kitchen	Spices, vegetable puree, beverages	Processing	Peri-urban	Youth	No	2017	Yes 2017 Sole trader
Nyame Dekyere Farms	Cassava and rabbits	Production & limited processing	Rural	Woman	Yes	Cassava farm handed over from her parents	Not yet
Oak Farms	Maize, beans, poultry	Production	Peri-urban	Both	No	2016	2018 Ltd company
Oserby Unique Ventures	Poultry, pigs, catfish	Production and processing	Rural	Women	Yes	2010	2010 Ltd company
Rabbits Republic GH	Rabbits	Production and processing	Urban	Youth	No	2017	No the owner considers it a "cottage business"
Wontesty Ventures	Catfish	Processing	Peri-urban	Youth	No	2016	Yes 2019 as sole trader
Yehowa Nye KIporldanye Fish Processing	Fish	Fishing & Processing	Rural	Both	Yes	2014	Yes 2014 sole trader

The next section of the survey covered the history of the enterprise, including the motivation to begin the business, an assessment of the human resources available to the businesses, scale of the businesses in terms of annual sales and income, and future plans for business growth and success.

Scale of the Business and Human Resources

To better understand the size of the business, enterprises were asked to report their annual sales and income for the previous financial year (2018) and the number of dependents they were supporting either fully or partially with the income generated by the business. They were also requested to provide a detailed breakdown of the human resources employed in the business and the education levels and qualifications of both the owners and their employees. Table 2 provides a summary of this information.

From a livelihood perspective, it is important to note that from the income generated by the 26 enterprises, an estimated 108 dependents are supported by the owners of the businesses, indicating the clear positive social externalities of investing in WYEs. Ninety-eight full-time jobs were also created, with 21 of these classified as self-employment for the owners, and 71 new full-time jobs generated for family and non-family members. An additional 47 part-time or permanent casual jobs were also reported, with many more casual seasonal positions created throughout the year. Again, these findings confirm the employment-generating potential of SMEs operating in the midstream of the food chain as major employers of skilled and unskilled labour (AGRA, 2019). The qualifications of the owners were also higher than expected. Sixty-

two percent (16 owners) had Bachelor-level university degrees or higher in a range of disciplines including sociology, engineering, business and finance, agricultural economics, graphic design, sculpture, nutrition, aquaculture and agricultural science, while others had diploma-level qualifications or were graduates of senior high school. Twenty-three percent (6) of the enterprises had only completed junior high school as their highest level of qualification and these were predominantly from rural areas. Three of the female entrepreneurs in the fisheries sector were found to have started work in the sector as children.

Enterprises were also asked about the issue of skill mismatch between employee qualifications and the jobs required by the business. The majority of staff hired in full-time positions had only junior high school or senior high school-level qualifications and hence on-the-job training was considered a prerequisite to overcome the skills gap. This was not however, considered a major problem, as there was general consensus that better skilled/qualified employees were more difficult to retain as they expected higher wages, which the businesses could not afford. Retention of staff/staff turnover was another issue raised with 50 percent reporting that they had had problems with this issue in the past, because of competition for farm labour within the community, or the draw of better paid industries for youth such as illegal mining or cybercrime. The lack of commitment by youth workers in general was raised as a major challenge. Business owners (including youth-led enterprises) repeatedly stated that youth employees had short-term vision whereby they expected to earn high salaries quickly, without having to put in the time and effort to develop the necessary skills and demonstrate their commitment to the business in the roles for which they were hired. Oak Farms raised another interesting issue associated with the retention of staff which was gender specific: despite attempting to train women to operate heavy farm machinery, the owner felt that cultural norms made it difficult for them to stay in these roles as they were perceived as “men’s jobs”.

In terms of salary, the average monthly salary reported for full-time workers was GHS 400 to GHS 500 (USD 75 to USD 94)⁴, depending on education level and tasks required, and casual workers earning between GHS 30 to GHS 50 per day (sometimes lower). Managers hired to run the business or highly skilled employees with university qualifications were occasionally paid monthly higher rates with up to GHS 800, reported. Family employees often received no fixed income but were “given money when they needed it”. Full-time non-family employees were generally paid monthly either in cash or via mobile banking, and casual employees were either paid cash daily, or if employed in seasonal work, were given a daily sustenance allowance with full payment for labour made at the end of the season. Given that a recent estimate of the living income for two adults with three children in Ghana was set at GHS 1 464 per month (GIZ, 2018), it is questionable whether the employment currently being generated by these enterprises can yet be classified as “decent or living wage” employment. The Ghana Statistical Services reported in 2016 that the average monthly earnings by all paid employees in the agriculture, forestry, and fishing sector in Ghana is USD 184 (Ghana Statistical Services, 2016). This would classify the reported full-time monthly salaries paid as indecent employment conditions. However, this is not because the owners do not wish to pay staff more—they are aware of this issue of low salaries in the agricultural sector— but as seen in Section 4.8 (Financial analysis), high costs of production coupled with limited scale and limited value addition make it virtually impossible to pay higher salaries to staff, as the majority of the businesses are currently generating very small net profits for owners.

⁴ At the time of writing, USD 1 equaled approximately GHS 5.34.

Table 2 Summary of business scale and human resources

Company Name	Annual turnover (2018 in GHS)	Dependents	Employment creation (Self-employment, family [F], non-family [NF] jobs)	Staff qualifications (Senior High School [SHS] (Junior High School [JHS])
Adom Marada Farms	3 000	3	1 FT self 1 NF casual	Owner & employee JHS
Anderson Agumbilla	8 000	Yes and no; not specified.	1 PT self (publisher) 1 PT NF	Owner: Bachelor Staff: incomplete JHS
Acquatic World Industries	46 800	2 (husband helps)	1 FT self 2 FT NF	Owner: Bachelor & Masters Staff: Bachelor
Ayeh Farms	4 360	1	1 FT self 1 PT F (brother)	Owner: Bachelor Staff: SHS
Benjelle Company	2018 no income because of floods. 2016 40 000	6	1 PT self (mining) 1 FT F 2 FT NF	Owner: Bachelor Staff: JHS
Cecilia Fish Products	25 216	4	1 FT self 10 FT NF Casual as needed	Owner- JHS Staff: JHS & SHS
Daniel Oppong	152 024	4	1 FT self 1 FT NF	Owner & employee SHS
David Kuwornu Akumani	14 400	3	1 PT self (teacher) 2 casual	Owner: Diploma
Doris Ahadzi Enterprise	201 600	6	1 FT Self 3 FT F 7 NF casual	Owner: JHS, son Bachelor Staff & casual: JHS
E-Juice Company	93 600	2	1 FT self 5 FT NF	Owner: Bachelor Staff: 2 Bachelor; 2 JHS
Emmanuel Gyabaah	50 000	4	1 FT self Wife and children help when needed	Owner: JHS
FAAMA MICK	Business began in 2018. Estimated gross income of 70 000 (50 percent of initial investment)	6	1 PT (HR manager) 1 FT NF	Owner: Bachelor & Post-grad. diploma Staff: SHS
FarmHup	1 766 400	1	2 FT self 2 FT F; 1 NF FT	Owners: Master & Bachelor Staff: National diplomas
Fertile Acres Farms	15 600	0	1 PT self (auditor) 1 FT NF (manager) 2 casual	Owner: Bachelor Staff: JHS
Goat Masters	88 320	2	1 FT self 3 FT NF Casual as needed	Owner: Diploma Staff: SHS
Jesko Farms	36 000	13	1 FT self 1 FT F 2 FT NF	Owner: SHS Staff: JHS
Kenny Farms	10 600	5	1 PT self (teacher) 1 FT NF 2 Casual	Owner: Bachelor Casual: JHS
Mariseth Farms	600 000	2 (husband helps)	1 FT self 10 NF FT	Owner- Bachelor Staff: SHS & JHS
Mountain Brown Rice	612 500	2 (widow)	1 FT self 2 FT F; many NF casual workers	Owner: Bachelor Staff: 2 family Bachelor Casual: JHS
Mr Kitchen	60 000	5	2 FT self 6 FT NF	Owners: Bachelor Agric. econ. Staff: SHS
Nyame Dekyere Farms	4 370	8 (widow)	1 FT self 2 casual	Owner: JHS Casual: JHS
Oak Farms	47 000	Adopted children	1 FT self 2 FT NF managers 3 FT NF labourers	Owner: Bachelor Staff: SHS
Oserby Unique Ventures	3 255 000	10	2 FT self 3 FT NF staff	Owners: Bachelor & Diploma Staff: Bachelor
Rabbits Republic GH	19 400	2	1 PT self (telecom engineer) 1 FT NF 2 casual	Owner: Bachelor Staff: JHS
Wontesty Ventures	40 170	11	1 PT (researcher) 1 FT F 2 FT NF 2 casual	Owner: PhD and Masters Staff: 1 Bachelor, SHS
Yehowa Nye Kporlanye Fish Processing	2 007 500	6	1 FT self 17 F; 28 NF both FT and casual	Owner: JHS Staff: JHS & SHS
Total		108	21 FT self; 8 PT self 77 FT (F+NF); 47 PT & casual	Owner – 16 Bachelor or higher; 2 diplomas; 2 SHS; 6 JHS

*FT – Full time; PT – Part time

Motivation to begin the business

For about a third of the interviewees (9 businesses), the motivation to begin the business reportedly came from traditional sources (i.e. inherited family business, parents were farmers, grew up in rural communities etc.). This was the case for the following businesses: Nyame Dekyere Farms, Yehowa Nye Kplorlanye Fish Processing, Doris Ahadzi, Jesko Farms, Goat Masters, Fertile Acre Farms, Rabbit Republic, Ayeh Farms and Anderson Agumbilla. For the remaining enterprises, more modern perspectives drove the desire to start-up the businesses such as: recognising clear market opportunities for new products (e.g. Mr Kitchen spices; E-Juice drinks; Mountain Brown Rice, Acquatic World Industries processed fish); social motivations to solve youth unemployment through agribusiness (e.g. FarmHup, FAAMAMick, Kenny Farms and Oak Farms); capitalizing on educational qualifications and research findings (e.g. Mr Kitchen, Oserby Unique Ventures and Wontesty Ventures); and a need to generate additional income for the family or create self-employment opportunities because of lack of alternative options (Adom Marada Farms, Daniel Oppong, Emmanuel Gyahaah and Benjbelle).

Several of the business owners also come from a range of diverse professional (non-agricultural) backgrounds, including teachers, a graphic designer, a sculptor and script writer, chemical engineer, insurance brokers, ex-NGO staff, banking sector employees and seamstresses. This in itself, is a positive indicator of the perceived market opportunities in the agribusiness sector in Ghana, which are motivating entrepreneurs to invest despite their limited experience in the sector in the past. However, the need to master the technical coefficients of the sector is a factor that will influence the viability of these businesses. Some of the WYEs without agricultural backgrounds have been trained or mentored by colleagues in the business. As seen in Table 2, for the majority of the business owners, running the business was their full-time job, yet eight of the owners were only managing their business part-time, as they still maintained careers in other fields, including teaching, mining, human resources, etc. This is an interesting finding as it suggests an alternative model of investing in agribusinesses where the owners may use wage income generated from external sources to reinvest in the long-term growth of their business, provided that they have trusted employees to help them manage the day-to-day operations.

Future Plans

The owners were asked if they had a business plan and what they hoped to achieve in the next five years. They were also asked what the three main challenges that they believed could potentially inhibit them from achieving these goals were. Just over half of the enterprises (14) had a business plan that was developed by themselves or with some external support from family members or support agencies (e.g. donors). For several of the enterprises with a business plan, the goals set for the next five years were highly ambitious (and somewhat unrealistic) with objectives such as achieving export to several countries in the region and rapidly expanding production operations and product range. However, others were more pragmatic with a focus on securing strong relationships with suppliers to ensure continuity of raw materials needed to expand business operations (e.g. Mountain Brown Rice), or plans to diversify into related activities such as feed and fingerling production that would help to address high input costs currently crippling the growth of the business (e.g. Benjbelle and Jesko farms). The factors identified as having the potential to prevent the achievement of these goals echoed those identified by the participants in the RAI workshop held in August 2019, and those from the literature review: i.e. lack of capital or difficulty accessing finance for necessary investments (machinery etc); lack of technical and marketing know-how and skilled employees; insufficient raw material supply; lack of government support/unfavourable policies; climate change and disease outbreaks; and poor infrastructure.

2. Business operations

The survey questions on business operations covered a range of aspects critical in the start-up phase (e.g. access to start-up capital and land) and beyond, such as access to resources needed for the initial growth and establishment phase of the business (e.g. access to loans, education and training, technology and machinery). The final section asked business owners to identify key risk factors with the potential to affect the sustainability of their enterprise as a WYE.

Access to finance and savings

This part of the survey covered the “investment focus” mentioned under Section 3 with questions about early-stage investment, access to capital, savings and reinvestment practices.

Start-up capital. Findings from the literature and anecdotal evidence on SMEs in Ghana suggest that personal savings is the most common form of start-up capital used. This finding was confirmed with 92 percent (24) of the enterprises interviewed, which stated that the initial start-up capital came from personal savings, with commonly reported levels of investment ranging from GHS 40 000 to GHS 60 000 in the first two years. Only two enterprises reported the main source of start-up capital as coming from grants or loans. E-juice received a grant of GHS36 000 from the Youth Enterprise Support Fund as a prize for coming First Runner Up in the competition “Total StartUpper” in 2016, and Fertile Acre Farms received a GHS 15 000 interest-free loan for three years from the National Entrepreneurship Innovation Programme (NEIP). Three other enterprises also received interest-free loans of GHS 10 000 from NEIP to put towards start-up costs: Mr Kitchen, Kenny Farms and Acquatic World Industries. Sources of personal savings were diverse with money coming from national service allowances, wage income from ongoing professional jobs (e.g. teaching) and other income generating activities such as illegal mining, sale of assets such as previous businesses and cars, voluntary retirement packages from the banking sector, and small contributions from family and friends (GHS 2 000–5 000).

Start-up investments. Most of the firms reported using start-up capital to establish or expand the raw material production activities for the business or externally source raw materials, and purchase machinery and equipment required for value addition. For the aquaculture enterprises, start-up capital was used to dig ponds, stock ponds, purchase fish feed and water pumps, build canoes and set up processing facilities for smoking fish. For the food crop enterprises, investments were made in acquiring land, seed and machinery, including herbicide sprayers, tillers and tractors. For horticultural enterprises major investments were made in cold storage and processing equipment: industrial fridges and freezers, juice extractors, milling machines, etc. For the livestock and poultry enterprises, capital was used for the purchase of animals, feed, vaccinations and construction of shelter.

Access to finance during start-up and growth phase – loans. Apart from the interest-free three-year loans from NIEP made available to four of the enterprises, only three enterprises had taken out any commercial loans during the first two years of the business. Acquatic World Industries borrowed from First Trust Financial Services, Doris Ahadzi borrowed GHS 1 000 from MASLOC (Microfinance and Small Loans Centre) and Cecelia Fish Products borrowed four to five small loans from the Agricultural Development Bank (ADB), facilitated by her membership in a cooperative. All paid back the loans within the first two years. Only six of the enterprises (23 percent) are currently servicing mostly small loans (GHS 3 000–5 000), with three of these taken from rural banks, one from MASLOC, and a home loan from Ghana Home Loans for GHS 20 000 for 15 years (Mariseth Farms). Interest rates were reported at 20 percent per annum.

When asked how easy it was to access loans for agribusinesses, 70 percent (18) of the businesses reported that it was very difficult. The most commonly reported challenges were collateral requirements, followed by high interest rates (20 percent and more per annum) which act as a major deterrent for businesses when considering loan applications. This is consistent with the broader findings on access to finance for SMEs in Ghana (ITC, 2016). Complicated and lengthy application procedures were also reported as a challenge, particularly when detailed financial cash flow analysis is required – something that many new enterprises cannot provide. Almost half of the businesses reported that banks see agribusiness as high risk and, therefore, are not interested in loaning to them. Eighty-eight percent of the enterprises felt that it was equally difficult for women and youth-led agribusinesses to access loans as it is for any other SMEs operating in the agricultural sector, yet twelve percent (three WYE) felt that there were additional challenges for women and youth-led businesses. Oak Farms reported that women are often seen as “weak” by the banks and considered less able to repay loans, and Rabbit Republic and Ayeh Farms felt that youth enterprises could also be disadvantaged because of perceptions of inexperience in running businesses. Only two enterprises reported no difficulty in accessing loans – Yehowa Nye Kplorlanye Fish Processing and Trade and David Kuwornu (pig production). The owner of Yehowa Nye Kplorlanye reported that she was frequently contacted by the a rural bank asking if she wanted to take out a loan but she is not interested because of the high interest rates; and David Kuwornu Akumani reported relative ease in applying for loans because of his stable income as a teacher and record of salary paid for by the government payroll.

Private equity. Again, consistent with the literature, only one enterprise made any reference to or showed an interest in seeking private equity investment. Oserby Unique Ventures, the largest of the enterprises interviewed with a gross turnover of GHS 3 255 000 in 2018 and operations in poultry, pigs and catfish production, stated that in the next five years they would like to identify an equity investor to assist with scaling up the business to increase poultry production in an attempt to address import substitution issues in Ghana. They currently have the capacity to house 120 000 birds, yet stocking rates are only 20 000 because of lack of finance and high cost of production. Given the relatively small scale of operations for the majority of the other enterprises interviewed, it is perhaps unsurprising that at this stage only one of the most established enterprises (operating since 2010) feels ready to explore private equity options.

Alternative funding sources for WYEs. As an outcome of the FAO RAI initiative on involving women and youth in responsible investment in agriculture and food systems in Ghana, a publication was developed to provide information on organizations that may provide preferential funding to women and youth-led agribusiness in Ghana (FAO, 2019c). A summary of 11 organizations is provided in the brief. Unfortunately, none of the enterprises participating in this study were aware of these organizations nor had applied for or received any funding from them. This suggests that the scale of the opportunities provided by these agencies is likely to be limited, and/or may not extend to some of the geographic areas or value chains covered by this survey.

Working capital and savings. Hundred percent of the businesses used the income generated from sales of products as working capital to cover the day-to-day costs of operating the businesses – no lines of credit were reported or any other finance arrangements for working capital. Hundred percent of the businesses also reported that they annually reinvested a proportion of net profits into the business. Fifty-eight percent (15) claimed to have reinvested 100 percent of any profits into the business with no salary taken for the owners, while others saved between 10 to 50 percent of net profit and reinvested the rest into the business.

Village savings and loan associations (VSLA). During the FAO RAI workshop in August 2019, a recommendation was made that VSLAs should be considered as useful vehicles for WYEs to pool resources and access loans without the involvement of formal financial institutions. To gain feedback on this recommendation and verify the level of interest, participating enterprises were asked if they were members of VSLAs and/or if they would be interested in this form of group savings and loan. None of the enterprises interviewed were currently members of any VSLAs, and only 30 percent (8) of the enterprises expressed any interest in this type of institution with several caveats mentioned, e.g. members must be active, trustworthy and opportunities for networking must be available. Many of the enterprises stated they were not interested in VSLAs as they believed it was a vehicle more suited to farmers in rural areas with strong social ties, and not for agribusinesses as their capital requirements differ and their activities are not homogenous. Those enterprises operating in the fisheries sector were all members of the Fish Traders and Processors Association (FTPA) and felt this was a much more useful association for their purposes.

Financial training. Eighty-eight percent (23) of the enterprises reported that they had had some form of financial management/record-keeping training. The most common providers were donors and NGOs, including GIZ, Government of the Netherlands, USDA Ghana Poultry Project, followed by national providers, including District Agricultural Extension, Fisheries Association (FTPA), Ignite Incubation (for women-led agribusinesses) and NIEP. Twenty-seven percent (7) of the enterprises had received financial management training as part of their educational qualifications (e.g. business and finance degree, management degree, economics, engineering, etc. or at senior high school level). Only two of the enterprises sought external support to manage their finances, with Oserby Unique Ventures employing an accountant on a part-time basis, and Goat Masters calling upon a lecturer at Cape Coast University who helps to review their financial statements and provide advice.

Despite the majority of enterprises having participated in some form of financial management training, this is clearly an area that needs further reinforcement as many of the owners struggled to provide the details required to complete the marginal analysis for the previous financial year (Section 8). Record-keeping also needs to be improved, as again many enterprises could not accurately report on the quantities of raw materials purchased or units of product sold.

Access to land

Participants of the workshops and the online forum reported that large-scale land acquisitions, as well as non-agricultural uses of forest and farmland, such as irregular mining and real estate development, exacerbate competition over land (FAO, 2020b). In recent years, government entities and development cooperation partners have initiated new processes to encourage inclusive forms of investment and protect the interests and rights of small-scale land users (FAO 2015). Suggestions on how to improve land and forestry monitoring through participatory mapping have also been discussed (FAO, 2020b). The participation of marginalized groups, including women and youth, in such initiatives are crucial for their success in ensuring a more equitable tenure system that contributes to sustainable development.

However, while Ghana's tenure system may be male-dominated and rural women and youth may constitute the majority of the land poor, they (women and youth) should not be seen as homogenous or passive groups. Research has shown ways in which women have used customary systems, emerging land markets and legislation to access land as well as collective action for strengthening the protection of women's land rights (Britwum *et al.*, 2014).

Among the women- and youth-led companies participating in the present survey, many may belong to groups with connections or access to capital needed to secure land. Twenty-three (about 88.5 percent) of the 26 companies have access to land. The remaining three, Mr Kitchen (youth-led, peri-urban), FarmHup (woman and youth-led, peri-urban) and Cecilia Fish Products (woman-led, rural) are not involved in production and none of them reported problems of accessing land. FarmHup did not currently see a need to acquire land. Mr Kitchen expressed a need to acquire land for production of raw materials (spices) and Cecilia Fish Products desired to acquire land to expand the business. Among the companies that had access to land, 19 (about 73 percent) were involved in crop, livestock or aquaculture production.

Though the companies were not asked how and under which conditions they accessed land, some companies spontaneously mentioned family land (5 respondents), rent (3), purchase (2), gift (2), personal residence (1), male family members' residence (1), and share-cropping (1).

Benjelle Company accessed land through share-cropping. The owner explained that he had been given the land by a local chief, with whom he has a pre-existing relationship, in exchange for 50 percent of each harvest. Share-cropping arrangements in which tenants access land in exchange for between a third and two-thirds of the proceeds are common in Ghana (Löwe, 2017). Sharecropping may be seen as a type of benefit sharing arrangement where the tenant needs less financial capital to access land and the landholder get access to the expertise or labour of the tenant. However, depending on the terms, sharecropping agreements may also be exploitative, with the surplus expropriated from land-poor people and concentrated with landholders. The survey results did not provide sufficient information to draw conclusions in this case, but the financial analysis shows that though the business provides a high return on investment, its net-profit is below the living annual wage recommended for Ghana.

Participants of the FAO workshop and online forum mentioned benefit-sharing between landholders and women or young people as a potential avenue for accessing land. The respondents were therefore asked if they had participated in benefit-sharing schemes. Apart from the earlier mentioned sharecropping arrangement, only one of the companies, Mariseth Farms, had experience of benefit sharing schemes. Mariseth Farms had access to a large tract of land and engaged in benefit-sharing with farm workers and others who cultivate food crops and vegetables on the company owner's land. Many of the other respondents were familiar with the concept of benefit-sharing but their enthusiasm for such arrangements seemed to be limited.

Three of the respondents (about 11.5 percent of the total or 13 percent of the respondents with land access) reported concrete problems related to land access or tenure security. These three are all involved in primary production. Adom Marada Farms (peri-urban, woman-led) accessed land through her brother. She reported that an attempt to buy her own land had failed as the particular piece of land had been fraudulently sold to several buyers. She also stated that the land she had used had been reduced because of a road construction. She felt disadvantaged because of her gender. Secondly, Oserby Unique Ventures (rural, woman-led) reported that the registration process at the lands secretariat had been expensive and had drained the farm's financial resources. Given that Oserby Unique Ventures was one of the biggest companies participating in the survey in terms of scale (land area), the cost of land registration was higher than that of many of the other businesses. Lastly, Aye Farms reported that pastoralists had grazed animals on her maize farm, leading to loss of produce. At present, she had decided to cease maize production and focus on rabbit production and processing.

In sum, though most of the participating companies were involved in primary production, problems with securing access to land was not cited as a major impediment for the viability or sustainability of the business for a majority of them.

Table 3 Summary of findings on access to land

Company Name	Access to land	Involved in primary production	Rural/peri-urban/urban	Mode of access to land*	Problems
Acquatic World Industries	Yes, currently has access to four plots. No issues accessing land	No	Peri-urban	Unknown	No
Adom Marada Farms	Yes, initially started on her brother's residence. Accessing additional land has been a challenge	Yes	Peri-urban	Access through brother	Yes, subject to fraud and expropriation for road construction. She feels disadvantaged as a woman
Anderson Agumbillah	Yes, need land for expansion. Currently renting and need to buy his own	Yes	Peri-urban	Rent	No
Ayeh Farms	Yes, the rabbit cages are located on her family property. Land issues related to Fulani herdsman grazing on her maize farm, leading to loss of produce	Yes	Rural	Family land	Yes, land conflict between her and pastoralists has made her give up maize production
Benjbelle Company	Yes, land was given free by Chief as a form of partnership. 50 percent of each harvest is given to the chief	Yes	Peri-urban	Sharecropping, 50 percent of harvest goes to village chief	No. Access to land was not complicated as he had a pre-existing relationship with the village chief
Cecilia Fish Products	No, needs land to expand her business but does not have access yet	No	Rural	N/a	No
Daniel Oppong	Yes, and has acquired additional land for expansion without any problems	Yes	Rural	Unknown	No
David Kuwornu Akumani	Yes, but it is located in a hilly environment. Acquisition was easy	Yes	Rural	Unknown	No
Doris Ahadzi Enterprise	Ye.	No	Peri-urban	Unknown	No
E-Juice Company	Yes, company located on their personal land. She has acquired land for future expansion	No	Urban	Private property	No. Owner felt no disadvantage because of gender.
Emmanuel Gyabaah	Yes, he owns 8 to 10 plots of land where he currently grows teak	Yes	Rural	Private property	No. The acquisition process was not complex.
FAAMA MICK	Yes, pond located on his family's property. Access to land would not be a challenge for him provided he could afford it	Yes	Urban	Family land	No
FarmHup	No current need	No	Peri-urban	N/A	No
Fertile Acres Farms	Yes took over from father and accessed family land	Yes	Peri-urban	Family land	No
Goat Masters	Yes land is needed to expand the business. He already has 5 acres of land which he got through a friend	Yes	Peri-urban	Gift	No. The process of acquiring the land was easy
Jesko Farms	Yes, land accessed from extended family. Process was not complicated	Yes	Rural	Family land	No
Kenny Farms	Yes, land was hired for GHS 3 000 for 2 years	Yes	Rural	Rent	No. The process is not complicated if you have money to rent the land
Mariseth Farms	Yes, currently cultivates 100 acres but can access up to 1 000 acres. Gaining access was easy with support of her husband. She is engaged in benefit-sharing schemes with her workers and others	Yes	Rural	Access through husband	No but she knows other women and youth involved in similar enterprises that have found it difficult. Illegal mining has also created competition for land. Access to smaller parcels of land say 5 to 10 acres is easier but land is often fragmented
Mountain Brown Rice	Yes, but need more land to expand the business. Can access 100 acres of family land and has no issues in accessing it	Yes	Rural	Family land	No
Mr Kitchen	No access but they need it to go into farming of spices	No	Peri-urban	N/A	No

Company Name	Access to land	Involved in primary production	Rural/peri-urban/urban	Mode of access to land*	Problems
Nyame Dekyere Farms	Yes, land was acquired from the extended family at no cost	Yes	Rural	Family land	No
Oak Farms	Yes, she got 100 acre from her local chief at no cost when she explained her intent	Yes	Urban	Customary	No
Oserby Unique Ventures	Yes, land bought from a friend. Process of acquiring the land was not complicated as seller was his colleague and friend	Yes	Rural	Private property	Yes, the registration process at the lands secretariat is expensive and has currently drained all the farm's financial resources
Rabbits Republic GH	Yes, personal residence. Rabbit production does not require much land	Yes	Urban	Private property	No
Wontesty Ventures	Yes, pond located on his property. Access to additional land should not be a challenge as pond size not too big. He could even rent land	No	Peri-urban	Private property	No
Yehowa Nye Kplorlanye Fish Processing	Yes, but she needs additional land to expand and build the fish processing centre and showroom	Yes	Rural	Unknown	No. The acquisition process was not difficult and there are no outstanding issues
Total	23 (79%)	19 (73%)	12 (46%) rural, 10 (38.5%) peri-urban, 4 (15.5%) urban	Family land 6 (23%), Private property 5 (19%), rent 2 (8.5%), access through male relative 2 (8.5%) customary 1 (4%), gift (4%)	3 (11.5%)

*This may be a combination of different forms of tenure or subject to interpretation. For example, family land may be a form of customary land or may be freehold, and land self-specified as "own property" or "personal land" may be customary land or freehold etc.)

Access to education and training

In addition to financial training, the WYEs were asked to provide information on any other training they had received during the start-up phase of the business, what training they thought they were missing, and if access to training was considered equal for WYEs and adult male-led enterprises.

Start-up training. During the start-up phase, most of the enterprises received some form of technical training in production or processing, in addition to basic record-keeping/financial management and/or development of a business plan. The most common providers were district agricultural extension agencies, the Ministry of Food and Agriculture (MoFA), NEIP, Association of Ghana Industries, the Fisheries Commission, the Rabbits Association of Ghana, and the Ghana Poultry Programme. While this training was rated highly by participants, they felt that start-up training should also have covered topics such as how to access capital; human resource management; food safety and hygiene; farm organization and biosecurity (poultry, pig, rabbit, aquaculture); marketing, processing and packaging. Additional topics that may have been of use at this stage include understanding the specifics of the selected value chain; identifying existing challenges; government policies and projects; and access to associations.

Current needs. The most commonly reported training need was for **traditional and digital marketing**. Many enterprises felt that they did not have sufficient knowledge on how to effectively market their products more broadly than to local customers or wholesale markets where they felt they were rather price-takers. Other requested training on export market access, mechanisation to increase scale of processing, advanced training in financial management, and a specific request for training in fish feed production was repeatedly made by fisheries enterprises because of high feed costs.

Equal access. 50 percent (13) of the enterprises felt that access to education and training was equal, regardless of gender and age. Twenty-seven percent (7) did not comment on this issue, and 23 percent (6) felt that access was not equal, with adult males receiving preferential access to training because of their connections, longer-standing in the community, additional resources to pay for training, and greater knowledge on where to look for training opportunities.

Access to technology (ICT)

Enterprises were asked about the type of information and communication technology used in their business and any specific apps or companies providing ICT services. They were also asked to identify any gaps in technology needed.

ICT hardware. Hundred percent of the enterprises reported owning and using a mobile phone as the main communication device for contacting customers and suppliers and dealing with day-to-day business operations. This universal adoption regardless of gender is a positive sign, given that women in Africa are 14 percent less likely to own a mobile phone than men (CTA, 2019a). While the survey did not specifically ask if the owners had smartphones, many respondents reported using their phones to look things up on the internet and using social media on their phones for advertising their products. Given the high rate of adoption of smartphones by youth across the continent, again this is perhaps not surprising. Laptops were the second most common device used by the business with 58 percent of enterprises (15) reporting that they owned and used these mostly for record-keeping.

ICT software. Only two enterprises reported using any type of accounting software such as Small books (Mr Kitchen [youth, peri-urban]; and Goat Masters [youth, peri-urban]). The most commonly reported ICT Apps used to market products were Facebook (46 percent), WhatsApp (31 percent), Instagram (19 percent), Twitter (8 percent), and Yahoo, YouTube and email (4 percent). This explains the urgent request made by many enterprises for digital marketing training. Only three (12 percent) of the enterprises already had their own company website used mainly for marketing purposes (Adom Marada [woman-led, peri-urban]; Oak Farms [woman-led, urban]; and Rabbits Republic [youth-led, urban]), and only two enterprises (8 percent) reported to have used the services of an ICT provider (i.e. the e-commerce platform Hartel) to set up a virtual shop (Mr Kitchen) and to notify customers via SMS about their products (Goat Masters). With the exception of mobile banking that is used by many enterprises to pay staff salaries and invoices, no mention was made of any other ICT solutions/Apps that could be used for accessing agricultural knowledge and advice, machinery hire services, weather forecasts, market and price information, etc. This finding is consistent with the discussions held during the FAO RAI workshop where youth and women reported that access to ICT solutions in Ghana is limited, and that existing technology solutions are not yet sufficiently developed to support diversified agribusiness operations (FAO, 2020b).

ICT needs. The most commonly reported ICT need was for a company website. As mentioned above, only 12 percent (3) of the enterprises interviewed have their own website and another 27 percent (7) of enterprises stated that they were either planning to develop a website or felt that this was lacking in their business. Three enterprises reported that they would like to develop Apps to support their business operations. FarmHup (woman and youth-led, peri-urban) wants an App that would allow them to communicate directly with farmers and provide timely agronomic advice, and Fertile Acre Farms (woman-led, peri-urban) would like an App that would notify them of disease outbreaks in poultry so that they could be prepared in advance. Ayeh Farms (women-led, rural) felt that an App for customers would help to improve feedback on products sold that could then be used to tailor future products sold via the App and delivered directly to customers. Goat Masters (youth, peri-urban) felt that an e-commerce platform for livestock trading was needed, and Mariseth Farms (women and youth-led, rural) would like to invest in drones to monitor land and ensure timely use of inputs.

In response to the low levels of adoption of ICT services reported by women and youth enterprises during the RAI initiative, a publication was developed to provide information on organizations that provide ICT services in Ghana (FAO, 2019d). A summary of ten organizations is provided in the brief. Unfortunately, none of the enterprises participating in this study were aware of these organizations nor had used their services. Training and education is greatly needed to increase awareness of the availability and use of ICT solutions for women and youth-led agribusinesses. It also appears that dialogue platforms between agri-WYEs and ICT providers should be encouraged so that services can be developed that are better tailored to meet their diverse needs.

Access to mechanization

Enterprises were asked to identify the type of machinery used in their production and processing operations, if they owned this equipment, if they had ever used the services of a machinery hire company, and if there was any specific machinery or equipment that they needed for their business but were not able to access. The role of associations in providing mechanization services was not raised in the interviews but could be part of a strategy to cluster and increase the efficiency of mechanization services.

Consistent with the findings from the online forum and the FAO RAI workshop, mechanization of business operations, including input supply (e.g. feed manufacturing), production, post-harvest, and processing remains low with relatively basic equipment used. Only three enterprises reported using no mechanization at all in on-farm and processing activities because of the cost of acquiring such equipment. This included Nyame Deke Farms (woman-led, rural, cassava production); Mariseth Farms (woman and youth-led, rural, food crop production); and Fertile Acre Farms (woman-led, peri-urban, poultry production and processing). While this is not a representative sample, it is interesting to note that all three of these businesses are women-led enterprises, which may suggest that women have greater difficulties acquiring or hiring necessary machinery. Of the 88 percent (23) of enterprises using some form of mechanized equipment in their operations, only two enterprises hired this equipment (Mariseth Farms hires tractor from District Assembly; Doris Ahadzi hires engine boats for fishing), with the remaining purchasing the equipment from personal savings.

Current equipment. For the horticultural enterprises, equipment included juice extractors, milling machines (for spices), dryers, refrigerators and a cold van. For the food crop enterprises, equipment included a herbicide spraying machine, mechanical planter, tractor, weighing scales and a dryer (maize). For the fishery enterprises, this included mechanized water pumps; feed mixers, power engine boats for fishing, tricycles and motorbikes for transporting fish from the harbour; fish smoking equipment (chorkor and ahoto); fish mixing machine (for sausages Acquatic World Industries); refrigerators and freezers; and heat sealers for packaging. For the livestock and poultry enterprises, basic equipment was used for processing (knives, cutlasses, weighing scales, fridges, freezers and heat-sealing machines). Only one enterprise had a meat slicing machine (Rabbits Republic) but several others mentioned they wanted one but could not afford it.

Future needs. When asked what machinery was needed to scale up their businesses but could not be accessed, a long list was provided. At the production level, this included equipment such as irrigation pumps, solar panels (to fuel water pumps), tractors and excavators to dig fish ponds. However, most of the needs were related to processing equipment – millers, destoners and dryers for the processing of food crops, fish deboners and dryers, numerous requests for packaging machinery and equipment for producing fish feed. For livestock, meat cutting and packaging equipment is needed, and across the enterprises additional vehicles for transportation of raw materials and finished products are required as there appears to be a lack of local logistics service providers. In some cases, this equipment is not available in Ghana (e.g. meat cutting and packaging machinery for goat meat) and is too costly to

import, but in all cases the major constraint to purchasing this equipment was access to capital. Mr Kitchen estimated that semi-automating his production processes for spices would cost GHS 30 000 – money that he simply did not have and could not access through low-cost loans.

These findings are important, as they suggest that one of the major inhibitors to WYEs taking operations to the next level is the inability to purchase the machinery required to do so. Many of the enterprises interviewed knew exactly what hardware they needed to grow their businesses, but simply could not afford to purchase it. If the Government of Ghana intends to truly capitalize on the growth potential of these enterprises operating in the “hidden middle”, then something must be done to address this issue of agro-industrial mechanization in the midstream of the food value chain. This needs to be accompanied by better accounting and recordkeeping, financial literacy and realistic business plans.

Risk factors affecting sustainability

Enterprises were asked to identify some of the key reasons they believe women and youth-led enterprises fail during the start-up phase and beyond. Owners were also asked if they had a succession plan in place for when they retire or are unable to operate the business.

Risk factors. The most commonly perceived reasons for the failure of women and youth-led enterprises were as follows:

- Desire for rapid growth and “quick money” with excessive expenditure during the start-up phase – particularly an issue for youth-led businesses;
- Lack of capital to sustain growth of the business – agribusiness is capital-intensive and most women and youth do not have, and cannot access, this capital at an affordable rate;
- Poor record-keeping and financial management, and little or no reinvestment into the business;
- Lack of planning/realistic business plans and market research;
- A lack of commitment and passion to see the business develop and to learn from mistakes (again reported as a particular issue for youth-led enterprises);
- For woman-led businesses, family commitments, time constraints, extra household work and a lack of support by husbands were cited as key reasons for early failure. Also, women-led businesses often support many dependents, leaving little left over for reinvestment. Double burden of caring for children and earning an income;
- High costs of raw materials;
- Limited value addition needed to expand market opportunities;
- Lack of technical know-how;
- Lack of working equipment;
- Lack of government support;
- High cost of land acquisition, leaving little for further investment;
- Lack of platform to link buyers and sellers; and
- Lack of ready market to absorb products.

Succession plan. When it came to succession planning, 62 percent of the enterprises (16) identified family members who they hoped would take over the business in their absence or following retirement (i.e. husbands, wives and children). This is perhaps unsurprising, given that 54 percent of the enterprises (14) interviewed were classified as family businesses. Many of these businesses had been proactive in getting children and partners already involved in various aspects of the business (e.g. record-keeping, marketing)

so that when the time comes, they will be familiar with the business operations. This proactive approach is strongly recommended for family businesses and has shown to increase the chance of business success following the retirement/handover of the business by the founder (Muithi, 2018; Braidford *et al.*, 2014).

Fifteen percent of the enterprises (4) had no succession plan in place and were unsure who would be able to manage the business in the absence of the owner on a short-term or more permanent basis. Anderson Agumbillah (adult man, peri-urban) reported frankly that if he was not present, the business would collapse. The absence of a succession plan is a high-risk strategy for any family or small business and has been identified as one of the main factors leading to the collapse of family businesses in Ghana in particular (Muithi, 2018). The second most important factor identified as affecting the long-term sustainability of family businesses in Ghana is family dynamics. When the owners of the family businesses were asked if their roles negatively affected their family members in any way, all stated no, as the business is seen as positively influencing family relationships through its ability to employ family members and support dependents. However, it seems unrealistic to think that challenges associated with family dynamics will not come to play when succession takes place.

Several of the non-family businesses had clear succession strategies in place where other partners in the business would step up and take over operations if needed, and they were also prepared to groom willing employees to eventually take over the management roles (Mr Kitchen, Oak Farms). Two firms (E-juice company and Wontesty Ventures) were adamant that their succession plan involved putting in place systems whereby the company could run itself and not be dependent on the owner, so that anyone who came to work for the company could work under the established system. Two firms (FAAMA MICK and Fertile Acre Farms) had succession plans linked to securing private investors. To ensure the long-term sustainability of the business, the owner of FAAMA MICK wants to change the business registration to a limited liability company with shareholders and open up the business to investors. Similarly, the owner of Fertile Acre Farms sees access to capital as the most critical factor inhibiting the growth and sustainability of the business long-term, and therefore, believes that partnering with private investors is a necessary component of the succession plan for the business.

It is a positive sign to see these non-family businesses with forward-looking strategies for succession that do not rely heavily on the ongoing involvement of the business founder or specific individuals, but rather are looking at new models of operation to secure the long-term sustainability of the enterprise. This is perhaps one advantage that non-family enterprises have over family enterprises – the ability to recognise changing circumstances in the future and the freedom to adapt accordingly without the constraints of family ties.

3. Enabling environment for WYEs

A supportive enabling environment is cited as one of the most critical factors needed to facilitate growth and sustainability of SMEs in the agricultural sector (AGRA, 2019). This includes access to infrastructure necessary for business operations (e.g. water, electricity, internet, mobile communications) and logistics (e.g. roads, ports, wholesale markets), as well as enabling policies that aim to reduce the cost of doing business such as a reduction in taxes, removal of red tape required to set up a business, protection against substandard or “fake” inputs, etc. Policies may also be targeted to support SMEs during the various life-cycle phases of the business, e.g. incubation for newly formed SMEs with support provided to register businesses and establish financial management processes; policy support to access affordable capital during the establishment and growth phases; incentives and rewards for employment creation during the growth phase etc.

The WYEs participating in this study were asked to identify the infrastructure that they currently have access to, and any limitations that need to be addressed to provide the right type of infrastructure to

support their businesses. They were also asked if they could identify any specific policies that targeted WYEs and if they had benefitted from any policies during the start-up phase of the business. They were asked if they had experienced any negative impacts from government policy, if they felt the government was doing enough to support SMEs and WYEs, and if not, what they could do to improve that. WYEs were also asked if they had any experience or involvement in policy dialogue platforms, and if they thought this was an effective vehicle to provide feedback on existing policies and communicate ongoing needs to government. Table 4 provides a summary of the responses to these questions.

Access to infrastructure

Almost all WYEs reported access to electricity (23 or 88 percent) and water (18 or 70 percent). Sixteen WYEs (62 percent) believed they had access to good roads and 10 WYEs (38 percent) identified their internet and telecommunications services as adequate for their needs. Seven WYEs had access to a retail market where they sold their products, and four already sold to wholesale markets (FarmHup, Mountain Brown Rice, Mariseth Farms and Adom Marada Farms).

In terms of ongoing needs, access to good roads was the most common complaint with 8 WYEs (31 percent) stating that this was a major issue for their business that had a negative impact on business growth because of higher costs associated with transportation and loss of customers because of access issues. Two WYEs engaged in pig production had no access to electricity at all (Daniel Oppong [rural] and Anderson Agumbillah [peri-urban]) and one had limited access to electricity (Emmanuel Gyabaah [poultry, rural]). Four had no access to running water (David Kuwornu Akumani [pig production, rural], Doris Ahadzi [fish, peri-urban], Yehowa Nye Kplorlanye Fish Processing [rural], and Cecelia Fish Products [rural]) and one had limited access (Adom Marada Farms [peri-urban]). Those without electricity felt that their business suffered as poor lighting limited control of insects and reptiles (Daniel Oppong), and it also made it difficult to get a resident farm manager as no one wants to live somewhere without electricity (Anderson Agumbillah). For those without water, this increased production costs as water had to be purchased for both production and processing activities. One firm (Mountain Brown Rice) also believed that a lack of access to irrigation water was a critical limiting factor for the growth of the business as without this, the female owner was unable to produce rice year-round.

Access to wholesale markets to grow the business was considered necessary by three WYEs (Jesko Farms, Benjbelle Company and Mr Kitchen), and storage (cold storage and silos) was raised as another factor significantly limiting the growth of the business by five WYEs (Mr Kitchen, FarmHup, Mountain Brown Rice, Doris Ahadzi enterprise and Ayeh Farms). Three firms complained of extremely poor internet and telecommunication connections (Yehowa Nye Kplorlanye Fish Processing [rural], Mariseth Farms [rural], and Anderson Abumbillah [peri-urban]); and two fish production and processing firms (Wontesty Ventures and FAAMA Mick) believed that the main infrastructure they were lacking was access to an incubation centre, or "technical centre for excellence" that could help them to further develop their technical production skills and link them to markets.

Enabling policy environment

Enterprises were asked to identify any policies that they were aware of that were designed to support the agricultural sector and women and youth-led enterprises in particular. Overall, knowledge of government policies was low, and the majority of WYEs did not believe that there were any policies that specifically targeted them. This is consistent with the "hidden middle" argument that despite the significant economic and social role that SMEs play in the midstream of the food value chain, they are not recognized in the policy discussions (AGRA, 2019). Five WYEs had no knowledge of any policies; another five were aware

that general agricultural/fisheries policies existed but could not name any or provide any details; and 15 WYEs (58 percent) reported that no policies specifically targeting women and youth existed.

Positive policies: A summary of the supportive policies/incentives identified by respondents were as follows:

- In terms of supportive financial institutions/access to finance programmes during the start-up phase, five WYEs identified NIEP as a positive supporter of WYEs, two WYEs identified MASLOC as a helpful provider of loans and one WYE reported access to a loan provided by the Business Advisory Centre backed by government policy.
- Only two WYEs (Daniel Oppong and Yehowa Nye Kplorlanye Fish Processing) reported to have received any support from donors or NGOs, which is surprising as several of the WYEs involved in poultry production had mentioned the USDA Ghana Poultry Project in other parts of the survey.
- In the poultry sector, one of the WYEs mentioned the Broiler revitalization programme introduced in 2014, which is also supported by the poultry and livestock import policy that was designed to reduce the country's import of chicken meat. The policy limits imports to 60 percent, meaning that importers must buy 40 percent of their produce from local sources. In 2013 the Government of Ghana also removed customs duties on poultry inputs such as feed, additives, drugs and vaccines, and has facilitated improved access to veterinary services to support the development of the sector. Two of the poultry sector WYEs were also found to be benefiting from the USDA Ghana Poultry Project.
- The most commonly reported national policies that WYEs were aware of were:
 - » The Planting for Food and Jobs (PFJ) and the Planting for Export and Rural Development (PERD) programme mentioned by six WYEs with three already benefitting from subsidized seeds, fertilizer and agricultural extension training (Oak Farms, Ayehe Farms and Mariseth Farms);
 - » The One District One Factory (1D1F) policy mentioned by three WYEs with one (Oserby Unique Ventures) earmarked for inclusion in the programme.
- National Youth Employment programme;
- Youth Enterprise Fund;
- Fisheries Act and supportive policy for fish farming that includes government tax exemption;
- Mechanization policy (reduction on taxes for imported machines for small industries); and
- School feeding programme.

Further details on three of the government flagship programmes mentioned by the WYEs are provided below:

The Planting for Food and Jobs is a flagship programme by the current government. It started in 2017 with government giving subsidized vegetable and maize seeds to farms to help improve food needs. In addition, chemical fertilizers were provided at subsidized prices. In the first two years, the farmers were expected to make part payments for the inputs upon receipt, with outstanding payments to be made after harvest. But in 2019, the government identified some sales outlets and supplied these with the seeds and fertilizers. Half of the cost of the seeds and inputs were subsidised by the Government and the farmer must pay the remaining 50 percent to secure inputs at the wholesale outlets. In addition, there was the introduction of the planting and rearing for export. This focused on some cash crops, including palm oil production. Those involved in planting for exports were given seedlings and special agri-extension services to provide technical production advice. The government is expected to buy the production outputs from these farms to export. This is the dimension that Mariseth Farms benefitted from. Those in rearing were given a number of livestock depending on the type registered by the individual.

One District One Factory (1D1F) policy is another flagship programme by the current government. The focus is to identify the raw material potential of the various political districts in Ghana and establish factories at local level that will help process the raw materials into finished or semi-processed products. In some cases, new factories are established all together or attempts are made to upgrade the existing factory or factories at the local level.

The National Youth Employment Program likewise is a flagship programme. It houses a number of activities to ensure that youth are employed. There are components on teaching, health, forestry and agriculture. Those in agriculture are therefore the ones referred to as youth in agriculture.

Dialogue platforms. WYEs were asked if they were aware of or had participated in any policy dialogue platforms established to provide feedback to the government on issues affecting WYEs. Of the eight WYEs that responded to this question, six felt that dialogue platforms were there but that they rarely translated into any pragmatic activities that support business growth, and the remaining two WYEs felt that this type of platform did not exist. One WYE felt that only larger-scale businesses were invited to participate in these.

Negative policies: WYEs were asked to identify any policies that they believed had a negative impact on the growth of their business. A summary of the main issues raised is as follows:

- Inadequate policy support to access affordable credit. Five of the WYEs reported that the government was not doing enough to make access to capital affordable for WYEs or to encourage banks to tailor lending products to suit the needs of agribusinesses. Consistent with the findings in Section 2 on access to finance, the main complaints were the collateral requirements demanded by banks, high interest rates and fees and short-time horizons for repayment. Examples were given from East Africa (Kenya) where government financial policies for agribusinesses have resulted in single digit interest rates.
- Financial sector clean-up. Several WYEs reported that the national policy on financial sector clean-up had negatively affected their businesses in a number of ways. Some were unable to access their own savings held in the bank, which were needed to grow the business (Mountain Brown Rice), and several felt that consumer spending was down as a result of the policy that had a negative impact on sales (Mr Kitchen, E-juice).
- Unfair tax policies. With the exception of the WYEs operating in the fisheries sector that are exempt from taxes, other WYEs such as Mountain Brown Rice reported that tax payments must be made regardless of sales volumes and this can cripple the business in lean years.
- High fuel costs. Lack of uniform price on pre-mix fuel and high fuel taxes were reported to significantly add to the production costs for three of the WYEs, and especially for the fisheries enterprises that owned motor boats.
- Insufficient policy support to encourage good agricultural practice. Poor quality of production was particularly an issue for horticultural processing enterprises who struggled to source raw material that could meet specified quality requirements (e.g. low residue levels, post-harvest handling etc.).
- Costly bureaucracy. The annual fee for maintaining a business operating permit was reported as an additional cost that many small businesses struggled to afford, particularly during start-up phase, along with costly process of obtaining land title documents.
- Poorly targeted and politicized policies. Many WYEs felt that even when policies do exist to support SMEs, they do not often reach those who need them the most. Poor communication and a lack of transparency in the selection process for beneficiaries were some of the issues raised.

Some background information on the financial sector clean-up policy mentioned above is as follows:

The *Financial sector clean-up* was concerned with the Central Bank (Bank of Ghana) embarking on policy drive to ensure financial discipline. The focus was to resolve the insolvency of some financial institutions so that their existence does not pose risk to the depositors. Some banks failed to abide by ethical banking standards by promising exorbitant interest rates and operating a pyramid system. These financial institutions were given a period of one year to address their challenges. When the time lapsed, a number of them did not meet the estimated minimum capital requirement to be in operation. This led to the revocation of licenses. It was not limited to banks but also specialized deposit-taking and non-banking financial institutions. It began in August 2017 and ended in August 2019. In all, a total of 9 banks were closed in addition to 347 microfinance and microcredit institutions, and 23 savings and loan institutions.

When this occurred, most customers of these banks, deposit-taking institutions and non-banking institutions are still struggling to retrieve their savings. In relation to Mountain Brown Rice, the business owner was saving with GN Bank, one of the collapsed banking institutions. Most Ghanaians had their savings with the deposit-taking and non-financial banking institutions. The inability to retrieve investments meant that the disposable income of individuals was reduced, and this affects their purchasing power. The businesses have also had their operating capital locked and this is currently affecting their business growth.

Overall, WYEs felt that the government was not doing enough to support the development of their businesses and that addressing some of the earlier mentioned negative policy issues would be a step in the right direction. When asked to identify their main policy needs/recommendations, the same issues identified earlier regarding access to credit were reiterated, along with the infrastructure needs identified earlier, in particular improvements to be made in road transport, water and electricity access, storage facilities and wholesale markets. Specific initiatives to increase competitiveness of WYEs were suggested, such as business incubation centres and agroprocessing hubs, which could reduce individual investment costs associated with establishing value-addition facilities.

According to AGRA (2019), efficiency gains and employment opportunities for SMEs are missed where infrastructure is poor, access to finance is difficult, and smallholder farmers face obstacles in accessing markets. In line with the findings from our survey, the report recommends that policies should not so much focus on 'fixing' the hidden middle, but on enabling SME processors and distributors to thrive and improve infrastructure so that all farmers can connect to the downstream of the supply chain. The recommendations made by the WYEs themselves are consistent with these findings and add weight to the argument that addressing enabling environment issues for all actors in the food chain must be a critical long-term goal of the government if they intend to capitalize on the positive growth effects of stimulating agri-SMEs.

Table 4 Summary of findings from enabling environment

Company Name	Infrastructure Access	Infrastructure Needs	Positive government policies	Negative government policies	Policy needs/ recommendations
Acquatic World Industries	Water, electricity, internet, mobile communication and good roads	She would like to customise the space that she rents for processing into zones/sections but cannot do this as it is rented space and no permission to alter structure	No known policies, only NIEP	Support from NIEP was disappointing as loan size as only 10 percent of what she asked for. Government policy allowing Chinese companies to engage in fishing is introducing a lot of challenges both competition and disease.	Believes policies are very politicised
Adom Marada Farms	Electricity, mobile network, internet, wholesale market, and roads	Mechanized borehole at subsidised cost.	Planting for food and jobs (PFPJ).	Business Operating Permit annual fee and high cost of feed because of import charges according to the suppliers.	Mechanized borehole at subsidised cost.
Anderson Agumillah	Water but no access to electricity and roads and mobile phone connections are terrible	Electricity and better roads		Fuel taxes and other taxes has negatively affected his business to a limited extent. Many policies to support entrepreneurs "only exist on radio". Policies are only political promises, which do not materialize to bring about the intended change in entrepreneurial development. Budget allocations for programmes meant to support women and youth enterprises are approved at the local level and implementation is politicized	There is a need to restructure the agricultural sector. The government needs to establish agricultural stock reserve centres. These centres would take up production reserves from agribusinesses to ensure that entrepreneurs do not incur losses
Ayeh Farms	Electricity, water, roads and internet and retail market	Market availability and storage facilities for price stability (maize)	The PFJ and the Rearing for Food and Jobs (RFJ). She bought maize seeds and fertilisers for half price		
Benjelle Company	Access to electricity and good roads	Access to wholesale markets needed to grow the business	Not aware of any policies supporting youth-led enterprises and did not benefit from any support from government, donors or others	Trade barriers from the EU prevent expansion and export of farm produce for Ghanaians in the diaspora.	Government should invest in wholesale markets and help to create market for youth producers
Cecilia Fish Products	Access to electricity, mobile communication network and internet	No water. Inaccessibility of water increases cost of processing since business has to purchase water	Not aware of any policies supporting entrepreneurs, women and youth. Did not benefit from any policies during start-up phase. Access to MASLOC loan was supported by third party (USAID-SFMP). No donor or NGO support	No comment	Government should invest in water access and provide toilet facilities (sewerage) in the community
Daniel Opong	Mobile network and water. No access to electricity apart from a small solar panel. The road network is too bad	The government should invest in roads and electricity	Not aware of specific policies. A lady told him that the government has asked poultry farms to operate accounts with banks and to save some level of income in order to secure loans. Has benefitted from NGO capacity development support	Amount of minimum savings in an account for approval of bank loans is too high. He believes that women have more opportunities to air their grievances than men	The government should invest in roads and electricity. Government support for women and youth agribusinesses is also limited. Provision of capital should be prioritized
David Kuwornu Akumani	Electricity, roads and mobile communication. No reliable supply of water. Harvests rainwater for household use but not enough for the pigs	Water access. Though the community is situated next to the Volta lake, the technology is not available	He has heard of policies but could not name any specific	Fuel price increases and other events affecting the national economy also affect his business indirectly	Invest in water provision, including up to hilly locations

Company Name	Infrastructure Access	Infrastructure Needs	Positive government policies	Negative government policies	Policy needs/ recommendations
Doris Ahadzi Enterprise	Access to electricity and road network but no water	No water, unavailability of storage facilities for processed fish and cold rooms for fresh fish	Aware of some policies to support entrepreneurs but could not name any. No known policies specifically for women and youth. MASLOC provided support during start-up phase. Support from FAO has been good	Lack of uniform price for premix fuel is affecting price of fish in Tema. The price of premix fuel in Tema is GHS 1 200 whereas price in other towns like Chorkor is GHS 500	Government should invest in water access and storage facilities
E-Juice Company	Access to electricity, water, average roads, internet and retail market		Specific policies that support young entrepreneurs: Youth Enterprise Support Fund, YIELD, NIEP. Gov. doing well in terms of reducing taxes on imported machines for small industries	No follow-up or ongoing support for businesses that have received funds from government programmes	Gov. should support local manufacturers to build machines that support cottage businesses
Emmanuel Gyabaah	Water, electricity, roads and mobile communication	He hopes that the government can invest in electricity and water in most of the Berekum area	No knowledge of policies for entrepreneurs (neither general or for women and youth)	No knowledge of policies for entrepreneurs (neither general or for women and youth)	If women are supported with start-up capital, they will be able to assist their families immensely. "When the men are struggling like I am now, if my wife also had capital to operate poultry farm, she could still have income to support our family". Women and youth do not have platforms to air out issues affecting their businesses
FAAMA MICK	Has access to water, electricity, mobile communications, internet and good roads and retail market	Similar comment to above about government creating knowledge base for best practices for catfish production, supporting youth start-ups and linking them to market	Aware of 1D1F, PFJ and Youth in Agriculture	No specific gov. policy that supports youth-led enterprises. Maybe there is one but no-one knows because of poor communication	As above
Farm Hup	Water, electricity, internet, wholesale markets, mobile communication and transport	Road network needs to be improved; business itself lacks cold storage. Gov. should help farmers to establish cold rooms in fields to help preserve produce when harvested and waiting for transport to market centres	Aware that there are government policies supporting entrepreneurs but doesn't know the details. Not aware of policies targeting women and youth. Not a beneficiary of any government policy	Government not doing much. Only provides programmes for agribusinesses to exhibit their products (trade fairs?). Not enough policies to encourage good farming practice. Poor quality of vegetables affects her business	Gov. should design programmes specifically for agribusinesses to increase their competitiveness over other SMEs
Fertile Acres Farms	Electricity (in the house but not on the farmhouse), water well, roads, internet and retail market for eggs	Government should invest in creating ready market for farm produce to encourage young agribusinesses	NIEP 3-year interest free loan. Youth Entrepreneurial Support (YES) (but she has not benefited from that)	None mentioned	Government should invest in creating ready market for farm produce to encourage young agribusinesses. Government could check up on start-ups to see how they are faring.
Goat Masters	Access to water, electricity but not directly accessible by road	Poor roads; no vehicles can come to current location of business office except motorbikes. Also exposed to environmental hazards of the Odor River as current office close to the river. EPA could not give approval to expand new structures in current location because of the river	Knew of some policies to support entrepreneurs but could not name them. Did not benefit from any gov. support during start-up phase. Not currently benefiting from any NGO or donor support	Policies to support agribusiness at start-up are social and political and as a result the supposed benefits are not felt by individual entrepreneurs. Also feels government is not doing enough to help agribusinesses access finance. In other African countries like Kenya, agribusinesses are given single-digit interest rates when accessing finance because of government policies, not the case in Ghana	Government needs to invest in improving road network and also create processing hubs where people can bring their products for processing. This would help people who do not have adequate finance to create the needed infrastructure

Company Name	Infrastructure Access	Infrastructure Needs	Positive government policies	Negative government policies	Policy needs/ recommendations
Jesko Farms	Has access to water, electricity, mobile communications, internet and good roads.	Access to wholesale markets needed to grow the business.	Aware of school feeding program and one other program (GSSL) designed to give loans to farmers. Not aware of any specific initiative that targets youth in agribusiness. Benefiting from a loan from the Business Advisory centre which is supported by government intervention policy.	Government not doing enough. Loans should be more flexible with lower interest rates and processing fees. Terms of loans also too short of only one year.	Government should invest in cold storage for storing harvested fish, a hatchery and training local farmers to prepare their own feed for the fingerlings
Kenny Farms	Electricity, water	Government should invest in good roads to help transport farm produce to clients	NIEP has been supportive. Gave him GHS 10 000 as interest-free loan to invest in farm. Shows support for youth-lead agro-enterprises	No comment	No comment
Mariseth Farms	Access to wholesale markets, water and electricity	Need good road networks and tele-communication (internet connectivity is limited on the farm)	Currently benefiting from government flagship programme PJF but not sure how. Not aware of policies specifically targeting women and youth	Did not benefit from any government support during start-up phase	Gov. should help facilitate access to funding for start-ups.
Mountain Brown Rice	Access to roads and wholesale markets in Accra	Access to irrigation water is a major issue as without it business cannot engage in year-round production. No access to silos and warehouses, which affect capacity to buy and store. Gender not an issue regarding infrastructure	Many policies exist but could not specifically name any	Did not benefit from any policies during the start-up phase. Not currently benefiting from any support from gov., donors or NGOs. Tax policy affects her business. Because business is registered, she must pay tax when selling or not. No tax refunds available	
Mr Kitchen	Water, electricity, good roads	No wholesale markets. On-site storage an issue but will move to new premises soon	NIEP has been supportive	Business wanted to be part of 1D1F flagship but limited support (only introductory letter from gov. to bank but collateral issue remains). Policy on "financial clean-up" has reduced consumer spending	Funds should be reserved to support start-ups even if 10% of production cost. Registration for start-ups should be made easier
Nyame Dekyere Farms	Electricity.	Government should invest in good roads.	No knowledge of any government policy that supports women entrepreneurs in farming. She has had visits from Agri Extension officers that introduce best farming practices and support for rabbit production.	No comment	No comment
Oak Farms	Electricity, water, roads, internet and retail market with the farm location in Accra but not in Kaasei-Ejura	Insufficient access to infrastructure in Kaasei-Ejura	She has benefitted from subsidized seeds, fertilizers and the services of agricultural extension officers under the PFJ programme. In her view, the government is doing enough in promoting youth in agriculture by making farming attractive.		Government should create more opportunities for women in terms of getting the technical experience in heavy farm machinery
Oserby Unique Ventures	Has access to electricity, water, roads and a strategic farm location along the main Accra – Kumasi road. Has access to wholesale market but cannot unfortunately meet the demand because of funds (esp. with the eggs production)		No known specific government policy that supports women led enterprise. The enterprise has been earmarked for the government (1D1F) policy but she is yet to hear from them. Mentions the government broiler project which came with a policy	Government contract for large scale purchase goes to the wrong hands because of political affiliations. Process of land title documentation for the 1D1F at the lands secretariat is very expensive, draining the farm of its resources.	Government should provide the market by buying from producers to ensure price stability and avoid over exploitation by market women

Company Name	Infrastructure Access	Infrastructure Needs	Positive government policies	Negative government policies	Policy needs/ recommendations
Rabbits Republic GH	Business located in an elite community. Electricity, water, roads and retail market	None mentioned	He has heard of the Rearing for Food and Jobs policy from government. No known specific government policy that supports youth-led enterprise. He is not a beneficiary of any supportive policy		Animal rearing should be a component of school curriculum
Wontesty Ventures	Has access to water, electricity, mobile communications, internet and good roads and retail market	Access to business incubation centre within production communities to nurture young start-ups	Aware of the 1D1F policy and the National Youth Employment programme. No known policy that supports youth-led-enterprise. Only supportive policy in fish farming is government tax exemption	No comment	Government should set up business incubation centre within production communities to nurture young start-ups and help ensure price stability for catfish
Yehowa Nye Kplorlanye Fish Processing	Electricity but no access to water; she has to buy	No water, road network is bad, telecommunication network also poor. Bad road network has hampered sales volumes. No longer possible to drive private cars from Accra to the town to buy fish	Has heard of the Fisheries Act. Not aware of any specific policies for women and youth. Has benefited from donor support. FAO gave training on how to smoke fish, USAID cemented the floor where she processes her fish and with construction of an "Ahoto Oven"	No support during start-up phase	Government should invest in improving roads and water access

4. Products

WYE enterprises were asked to identify the products that they produce and to estimate the volumes produced (and sold). Table 5 provides a summary of the main products and current production capacity. One point to note is that for several of the WYEs, it was difficult for them to estimate the total production per year. This indicates poor record-keeping for many enterprises and is an area that must be improved in the future if the businesses are to be able to keep track of their own growth and development.

WYEs were also asked if they had a marketing and pricing strategy in place for their products. None of the 26 enterprises had a formalized marketing plan or strategy. The most common approach to marketing product (10 WYEs or 38 percent) relied on the use of social media (Facebook, WhatsApp, Instagram) as discussed under Section 4.2 (Access to technology). In many cases the marketing strategy was not mentioned at all (9 WYEs or 35 percent) or was synonymous with the pricing strategy. This suggests that this is another major weakness for the WYEs, as only a few have managed to target specific customer segments/consumer groups. For example, E-Juice has retail outlets set up specifically outside hospitals to offer healthy natural juices to patients; and FAAMA Mick and Benjbelle are both targeting corporate staff for their smoked fish products as they believe they can charge a higher price than through local market sales. Many of the WYEs sell products to wholesalers and local markets or at farm gate. In these cases, word-of-mouth is another important component of how the product is marketed as customer referrals were reported to generate new business.

For the pricing strategy, again only the minority of WYEs had a specific approach in mind. For two enterprises (Mr Kitchen and Mountain Brown Rice), prices were set based on the weight and packaging of the product and the end market, with different prices set for local market, wholesale shops and direct-to-consumer sales. Some enterprises had fixed prices for specific customers (e.g. FarmHup has fixed prices for hotels and wholesale shops) or for specific products based on packaging and weight (e.g. Acquatic World packages of fish sausages; Yehowa Nye Kplorlanye Fish Processing catfish and tilapia prices vary depending on the number of pieces). Only six enterprises mentioned calculating a price that takes into account the cost of production (i.e. E-juice, Jesko Farms, Wontesty Farms, FAAMA Mick, Rabbits Republic and Ayeh Farms), which again indicates that book-keeping and financial analysis needs

to be improved so that all firms have a clear idea if the price set is covering the unit cost of production and generating a profit. Six of the WYEs (23 percent) reported to have no control over the price for their products as this price was set by the “market women” in the local markets who were thought to be exploitative (Kenny Farms, Nyame Bekyere Farms, Fertile Acre Farms, Mariseth Farms, Oak Farms, Oserby Unique Ventures). Most of the respondents who felt they were subject to the prices set by the market traders were engaging in little if any value addition, which again indicates the stronger bargaining position for enterprises when it comes to pricing when compared to marketing raw materials only.

Table 5 Summary of findings on products

Company Name	Product Offerings	Production unit/year	Marketing strategy	Pricing Strategy
Acquatic World Industries	Fish sausages, fish patty and Kobi (dried, salted tilapia)	3 120 packs of sausages; 2 520g fish patty	None specified	Fixed pricing. Pack of fish sausages (4 pieces/300g): GHS 15; pack of fish patty (70g): GHS 15; Kobi (with bones): GHS 10, Kobi (boneless): GHS15
Adom Marada Farms	Chicken, turkey, rabbit, goat	Chicken: 500; turkey: 24; rabbit: 46; goat: 1	By word of mouth and on WhatsApp, using the “status” functionality.	Pricing determined by market price, weight and the festive occasion
Anderson Agumillah	Pigs	50 pigs/year	Not mentioned	Price depends on the age of the animal and varies between GHS 500 and GHS 2400
Ayeh Farms	Maize; rabbits; Keyholders from rabbit skin	40 bags of maize; unspecified number of rabbits; 80 keyholders	WhatsApp, word of mouth, visibility at health programs and other social gatherings.	Price determined by cost of production and the prevailing market price
Benjbelle Company	Fresh catfish, smoked and flakes	4 000 kg/year	Target corporate staff by smoking fish and labelling (value adding)	5.5 kg of smoked catfish sold for GHS 100
Cecilia Fish Products	Fish (cassava fish) and shrimp smoked	712 000 fish; 56 kg shrimp	None specified but Facebook and WhatsApp used to market the product	Pricing is based on weighing. They use different bowls to measure the weight of fish or shrimps to sell
Daniel Oppong	Eggs (crates), chicken dropping.	11648 crates of eggs, 300 bags of chicken droppings.	Not mentioned. But he wants to produce big eggs of good colour	Market/season price variabilities. Prices of crates determined by size of eggs. Customers may receive a price reduction if they complain on small sizes
David Kuwornu Akumani	Pigs and pork	12 pigs/year	Not mentioned	Bags with meat are priced at GHS 5 to GHS 10.
Doris Ahadzi Enterprise	Anchovies, herrings, sardinella	2 880 baskets processed fish.	Son uses Facebook and WhatsApp to market but no strategy specified.	GHS 70/basket
E-Juice Company	Fruit juice bottles	31 200 bottles/year	Facebook and Instagram used for advertising. Cold vans are strategically positioned at car parks of big supermarkets in Kumasi city and located at China Mall, university campuses, hospitals and schools	Price is usually determined by the cost of production. GHS 3 per 300 ml bottle
Emmanuel Gyabaah	Cockerels	2 000	Raises day old chicks. Sell most of them during festive seasons. Also sell a few to people interested in rearing but find it difficult to raise day old chicks	Increase in price during 2019. Prices for 1- and 2-month-old birds are higher than day old chicks
FAAMA MICK	Fresh catfish, smoked catfish, charcoal-grilled BBQ; catfish with potatoes and vegetables and fillets	Fresh catfish 2 400 kgs	Uses Facebook and Instagram to advertise products. Sells mostly to corporate clients	As above
Farm Hup	Vegetables (8 products traded: tomatoes, lettuce, cabbage, sweet pepper, squash, habanero, cucumber [2 types])	1 200 crates of Tomato; 4 800 kg of Lettuce; 720 bags of Cabbage; 14 400 kg Cucumber (local); 24 000 kg Squash; 2 000 kg Sweet Pepper; 14 400 kg; Habanero 19 200 kg Cucumber (foreign). Total (6 veg.) 77 000kg	Sells to wholesale shops, hotels and markets	Price varies depending on customer, but prices are fixed for each of the 8 products when selling to wholesale shops and hotels. Price in market varies
Fertile Acres Farms	Dressed birds, live birds, eggs	400 crates eggs; approx. 4 000 birds	Word of mouth	Pricing based on market price

Company Name	Product Offerings	Production unit/year	Marketing strategy	Pricing Strategy
Goat Masters	Goats and processed goat meat	336 goats; 96 goats processed	Different pricing and marketing strategy depending on types of goats sold. Social media used to advertise products (FB, Twitter, WhatsApp) and other traditional media like radio and newspaper	Goat sold for GHS 200 unprocessed or GHS 220 processed
Jesko Farms	Catfish	3 000kg/year	The fisheries commission recommends potential customers to his farm; customers also call based on referrals from other customers (word-of-mouth)	Price based on prevailing market price from the regional office of the fisheries commission and the production cost. Most times price is determined by the market women in Accra
Kenny Farms	Cassava, maize, vegetables	200 bags of cassava; 20 bags maize, 200 boxes of tomato	None specified	Price taker. Price is usually determined by market women who exploit farmers when crop is in season
Mariseth Farms	Oil palm, cocoa, maize, rice, plantain	Could not specify	None specified	Price is based on weighing (price taker from market)
Mountain Brown Rice	Brown rice; infant foods, roasted rice flour; spiced rice flour	1 750 bags brown rice; 2 400 kg spiced rice flour.	Processed rice is packaged into various sizes to suit consumers. 1 kg and 5 kg most popular sizes	Price based on number of kg. 1 kg: GHS 10; 2 kg: GHS 20; 5 kg: GHS 50; 25 kg: GHS 200; 50 kg: GHS 350–400, depending on end customer
Mr Kitchen	Spices: 9 products; 6 drinks	5 940 units spices; 7 620 units drinks	Different packaging used for different products and end markets. Currently supplies to local market, wholesale market and through Facebook.	Price varies depending on packaging and end market (local market: GHS 10, wholesale: GHS 12, Facebook: GHS 15)
Nyame Bekyere Farms	Cassava, cassava powder, rabbits	250 bags of cassava; 8 rubbers of cassava powder; 20 rabbits	None specified. Purchase of farm produce done at farm gate or delivered to market women	Price taker. Price is usually determined by market women who exploit farmers when crop is in season
Oak Farms	Maize, beans, cockerel	150 bags of maize, 50 bags of beans, 1 000 birds	Facebook and Instagram web page for marketing and publicity. (No other methods mentioned but customers generally buy at farm gate)	Prices determined by prevailing wholesale market prices.
Oserby Unique Ventures	Eggs, poultry, pigs, catfish, tilapia	Eggs: 180 000, poultry (dressed): 12 000, pigs: 150, catfish: 1 000 kg, tilapia: 1 000 kg.	Not mentioned	Price is determined by the prevailing wholesale market price and the market women
Rabbits Republic GH	Dressed and grilled rabbit	480 rabbits per year	90% online and 10% by word of mouth.	He considers the prevailing market price, his inputs and outputs (the cost of production) and then he determines a reasonable profit margin
Wontesty Ventures	Fresh catfish, catfish kebab, catfish fillets, smoked catfish, diced catfish, catfish nuggets	1 000 kg/year fresh catfish, produced 442 products sold in 2018	Product sold at the farm gate. Different variations of catfish products sold to suit consumer preferences. Facebook used for marketing	Price is determined by the prevailing wholesale market price for the fresh and smoked fish. For the other products price is determined by the cost of production
Yeohowa Nye Kporlanye Fish Processing	Tilapia, catfish. Fresh and smoked.	Could not specify volumes but knows business generates average daily income of GHS 5500 from sales.	None specified	Tilapia: 3 for GHS 20; Catfish divided into two parts: GHS 7 each or GHS 14 for full piece

5. Food safety and Quality Assurance

Enterprises were asked which types of food safety and quality assurance systems they had in place if any. Six of the enterprises (23 percent) had some type of certification and another 6 (23 percent) aimed at, or were in the process of, being certified. Four of the companies had been certified by the national Food and Drug Authority (FDA), two aquaculture companies had Fisheries Commission Class 1 Certification and one company had been certified by the Ghana Standards Authority. Seven (27 percent) of the companies had staff or owners that had received some type of quality or food safety training.

All the companies that have obtained certification are involved in food processing. Five of the six companies that aspire to get certified are also involved in food processing. Two of the companies that did not have certification specifically mentioned that they were not currently operating in the processing

segment of the value chain (Kenny Farms and Nyame Bekyere Farms). E-Juice Company, one of the companies that were FDA-certified, mentioned that it took three years and cost GHS 15 000. The owner perceived that the certification process was hectic and discouraging.

Twenty-one of the enterprises (81 percent) gave descriptions on processes to ensure quality or food safety. Nineteen (73 percent) mentioned hygienic measures such as wearing protective clothing and washing of raw materials as well as refrigeration and freezing to avoid bacteriological growth. Cecilia Fish Ventures and Oserby Unique Ventures mentioned that they had separate rooms for food processing. Others said that they processed food in their personal kitchens. Other food safety concerns such as ensuring low-carbon content of smoked fish were mentioned by Wontesty Ventures. Beyond food safety measures, Rabbit Republic Ghana stated that the rabbits were slaughtered by Halal.

Though a varying degree of awareness of basic food safety was displayed by many of the enterprises, only a small number of them are officially certified. Official certification may not be a prerequisite to operate in some segments of the value chain or when targeting local markets. However, all enterprises involved in agriculture and food value chains need to consider food safety. Capacity development in this area may facilitate the access of safe and nutritious food for consumers as well as the competitiveness of Ghanaian WYEs in higher value markets.

Table 6 Summary of findings on food safety and quality assurance

Company name	Business type	QA system as of 2018	Type	Employees trained	Special processes
Acquatic World Industries	Processor	No certification yet but food safety processes in place	No comment	Yes, full time employee had formal training in food safety in the UK	Wear protective clothing while processing (gloves, hairnets); food always kept at cold temperature to avoid bacterial growth
Adom Marada Farms	Producer	No	No	No	She believes that she is into organic farming of poultry. She feeds them with moringa leaves, which improves the taste of the meat.
Anderson Agumillah	Producer	No	No	Not mentioned specifically but presumably on the job training	Washing pigs regularly, clean their living environment. Vaccination protocol. No vaccinated pig is sold before the withdrawal period has passed
Ayeh Farms	Producer and processor	No	No	No	The food processing and packaging is done manually by herself in the family house
Benjbelle Company	Production & processing	No, not yet but in the process of acquiring FDA	No comment	No comment	Similar to above. Fish washed and prepared for smoking on Chorkor smoker
Cecilia Fish Products	Processor	Yes	FDA and EPA certification. Also Fisheries Commission Class 1 Certification	Yes the owner has been trained and several staff members too	Fish and shrimps are washed, dried in open air and then smoked in kiln. Protective clothing worn during processing and processing area separated from packing area (ziplock bags)
Daniel Oppong	Producer	No	No	No	Ensure cleanliness
David Kuwornu Akumani	Producer, processor and retailer	No	No	No	Cleanliness of the environment is being ensured. After slaughtering, he washes the meat and he keeps it cold.
Doris Ahadzi Enterprise	Processor	No, want to get FDA certification but have not been successful yet	Want to get FDA certification but have not been successful yet	No comment	Fish is washed and dried on racks. Employees wear protective clothing when processing fish
E-Juice Company	Processing	Yes, FDA certification gained in 2019	FDA certification took three years at cost of GHS 15 000. Process described as hectic and discouraging	Yes the owner has been trained and several staff too	Fruit is washed, peeled, squeezed, bottled and refrigerated. Staff wear protective clothing, no preservatives are added, drinks are stored in freezers
Emmanuel Gyabaah	Producer	No	No	Not mentioned	Clean the cages every two weeks
FAAMA MICK	Production & processing	No, not yet but in process of engaging FDA and Ghana Standards Board	No comment	No comment	Similar to above. Smoking done by order so that it does not stay too long on the shelf

Company name	Business type	QA system as of 2018	Type	Employees trained	Special processes
Farm hup	Vegetable wholesaler	No, but efforts underway to get FDA certification	N/A	Yes, owner trained in food quality management	Chlorine wash for vegetables; staff wear protective clothing, hair net, gloves and goggles when packing veg.
Fertile Acres Farms	Producer and processor	No	No	No	Manual dressing of birds and sorting of eggs
Goat Masters	Production & processing	No, not yet but efforts in place to get FDA certification	FDA certification sought	Yes, in preparation for FDA certification	Washing hands, wearing gloves, caps, facemasks, detergents to clean after cutting and packaging of meat to ensure safety of processed meat
Jesko Farms	Production & marketing	No	No comment	No comment	Dressing and processing of fish done manually by the market women
Kenny Farms	Primary production	No. No current processing operations	N/A	N/A	No comment
Mariseth Farms	Production and wholesale	No	None	No	
Mountain Brown Rice	Production, processing and wholesaler	Yes	Ghana standards authority certificate	No comment	No comment
Mr Kitchen	Processor	Yes	Food and Drug Authority (FDA) certification 2018	Yes, 1 partner	Careful sorting and cleaning of raw materials prior to blending
Nyame Dekyere Farms	Production & limited processing	No. Not currently into food processing or very limited (cassava powder)	She would like to branch out into cassava packaging and processing into branded products but lacks the know-how	No	No comment
Oak Farms	Producer	No	No	No	None mentioned
Oserby Unique Ventures	Producer and minimal processing of poultry	Yes	Had certificate from the FDA but did not renew it in 2019 because the broiler processing and dressing room was under construction	Not mentioned	Separate tiled room for food processing. Staff wear protective clothing when processing food. Biosecurity measures at each entrance to the farm and the processing area
Rabbits Republic GH	Producer, processor	No	No	No	Halal; slaughter in personal kitchen, which he considers to be very clean; protecting clothing; freezing, brining and grilling
Wontesty Ventures	Processor	No, not yet but plan to obtain FDA certificate	No comment	No comment	Fish washed with water and lime and then processed according to the product. Smoked fish uses the "Wontesty Smoker" which was developed by them and does not have high carbon content (concern with the Chokor smoker). Staff wear protective clothing, processed foods are stored in refrigerator
Yehowa Nye Kplorlanye Fish Processing	Fishing & Processor	Yes	Fisheries Commission Class 1 certificate	Yes the owner has been trained and several staff members too	Fish is sorted, washed and preserved in ice. Protective clothing worn when processing. Processing unit also has Veronica buckets with liquid soap and handtowels for hand washing before, during and after processing
	17 (65%) of the companies are involved in food processing.	6 (23%) yes, 6 (23%) in process of obtaining FDA Certificate, 14 (54%) no.	4 FDA certificate, 2 Fisheries Commission Class 1 Certification, 1 Ghana standards authority certificate	7 (27%) of the companies had staff or owners that had received quality or food safety training	21 (81%) of the companies mentioned special processes for assuring quality or food safety

6. Value chain analysis

WYEs were asked to provide a detailed assessment of their role in the supply chain and their relationships with suppliers and customers. They were asked to analyse how well their suppliers can currently meet their requirements for raw materials, and how well they believe they can meet their customers' requirements for finished products. An assessment of the support services available and those used by the WYEs was also given. During the SWOT analysis, very few of the WYEs made reference to value chain weaknesses and constraints. This gives the impression that they are not aware

of the overall situation in their value chain and are not involved in any form of value chain dialogue, and, therefore, do not have an in-depth knowledge of the chain to perceive the challenges that lie ahead.

Suppliers

WYEs were asked to provide some information on what raw materials they purchase, who they buy them from, if any specific quality requirements are specified and any problems they may have. They were also asked if they have any long-term suppliers who they have been sourcing from for more than two years, and if they have ever used any ICT platforms to source raw materials. Table 7 provides a summary of the key findings on these aspects.

A number of different sourcing models were reported. For example, Mr Kitchen sources his raw materials directly from the local market on a needs basis. This has the potential to create challenges associated with securing consistent supply and quality, but no issues were reported. However, he did state that in the future they intend to secure access to land to go into spice production themselves, so perhaps this long-term vision is part of a strategy to have greater control of the raw material production process. Seven of the enterprises (27 percent) sourced raw materials directly from farmers or farmer groups/associations, including Farm Hup (30 farmers), Kenny Farms, Mountain Brown rice (that buy directly from Avetime Women's association and other farmers), Mariseth Farms (that buys from own employees [sharefarming] and community farmers), Acquatic World Industries and Wontesty ventures (that buy from fishermen/fish farmers) and Goat Masters (that buys goats from community farmers to supplement own production). This close relationship with community farmers as main suppliers of raw materials to these WYEs again highlights the interconnected nature of SMEs operating in the midstream of the value chain and farmers producing raw materials (AGRA, 2019). To take advantage of this relationship and the potential for positive socio-economic outcomes for both partners, strategies should be formulated to support both partners in the dyad to align their operations where possible to stimulate simultaneous growth of both enterprises.

Seventeen of the enterprises (65 percent) source some raw material from commercial suppliers, indicating that a vibrant private sector exists in Ghana for some inputs (e.g. suppliers include green houses for vegetables, commercial farms for fruits, fishing boat operators, private hatcheries and feed companies for poultry and fish feed). Fish feed can also be purchased through a public supplier (the Fisheries Commission District Office); however, some problems have been reported both in terms of securing the quantities of feed needed and the cost. Nine of the enterprises (35 percent) produce some of their own raw materials and only source outside if their own supplies are insufficient: Nyame Dekyere Farms, Kenny Farms, Mariseth Farms, Yehowa Nye Kplorlanye Fish Processing (owns 15 boats for capture fishing), Dorish Ahadzi (owns shares in two fishing boats), Wontesty ventures and FAAMA Mick (both have their own aquaculture ponds), Goat Masters and David Kuwornu Akumani (sources pigs from his sister).

The majority of enterprises make monthly or weekly orders via phone and pay cash in full on purchase for supplies (38 percent). Six enterprises (23 percent) had an agreement for some form of credit/part-payment option with their suppliers. Four enterprises reported to have access to part-payment upon ordering with full payment made after receipt of goods (Farm Hup), at the end of the month (Mr Kitchen) or when the goods had been on sold (Mountain Brown Rice and Goat Masters). Two firms had a credit line with their suppliers that could be paid in full two weeks after receipt of goods (Fertile Acre Farms, Oserby Unique Ventures).

When asked if any specific quality specifications were made in orders to the suppliers, ten enterprises (38 percent) reported specific requirements. For example, Farm Hup will not accept fully ripe tomatoes

as they need to be cold stored; E-Juice only wants to source organically grown fruits and pineapples with high levels of sweetness; Mountain Brown Rice specifies low use of chemicals and fertilisers; several of the aquaculture enterprises specified that the feed must be branded as “Raanan feed” (Benjbelle, Jesko Farms, Wontesty Ventures, FAAMA Mick); Goat Masters prefers to purchase short goats; and Adom Marada has specific requirements for the components of poultry feed.

The enterprises were also asked if they had ever encountered any problems with their suppliers (e.g. poor quality of goods, insufficient quantity and quality, etc.), and only eight responded affirmatively but even these experiences were mostly limited to one-off events. Most WYEs were very satisfied with the raw materials sourced from their suppliers, although those operating in the fisheries value chain did raise some concerns about accessing sufficient quantity of fingerlings and feed at certain times of the year. Given that 16 of the enterprises (62 percent) communicated no quality requirements at all to their suppliers, and that only six of the enterprises (23 percent) have any form of quality certification, this is perhaps an indication that the market for end-products has yet to reach the level of sophistication required to demand high levels of traceability and quality assurance from raw material suppliers.

Sixteen of the enterprises (62 percent) had long-term suppliers whom they had sourced from for several years. The main reason for staying with these suppliers was consistent supply of good quality materials and offering a line of credit to the WYEs. Offering credit was considered as one of the key attributes that would make a good supplier even better. No enterprises had had any experience sourcing raw materials through online platforms, and only two WYEs were aware that this was possible but felt that the current scale of the business did not warrant sourcing in this manner (Mr Kitchen, Mariseth Farms). Again, this supports the findings discussed in Section 4.2 on access to technology (ICT), that current adoption rates of these services are low, and they may not be appropriately tailored to suit the business needs of SMEs/WYEs.

Table 7 Summary of value chain analysis findings on suppliers

Company name	Raw materials	No. of suppliers	Ordering process	Problems	Long-term suppliers
Acquatic World Industries	Catfish, tilapia, spices	Business does not have farm raw materials and spices must be bought from fish farmers and the market: catfish from Elmina, Tema and Cape Coast; tilapia from farmers along Volta River around Akuse	Monthly purchase: catfish: 50 kg, tilapia: 50 kg, spices as needed from market. Cash on purchase	Quantity can be met; this was once a problem with a catfish order	Yes, all the suppliers have been working with the business since the beginning. To find new suppliers, she listens to recommendations and visits fishing harbour
Adom Marada Farms	Feed	Feed mill	Cash and carry; ordered when needed	No (but would appreciate credit facility)	Yes, 2 years. Good customer service, delivery at door step and sufficient quantity
Anderson Agumillah	Piglets, rice brand feed, fish meal, groundnut shells, cassava peels and vitamins	Feed comes from one shop, cassava peels from local bars	He goes to suppliers to place orders	None reported. They are able to meet demand so there is no need to find others	None reported
Ayeh Farms	Feed (wheat bran, poultry mash and rice bran) supplemented with grass; bunnies	Commercial; number not specified	Cash and carry	No, they can meet her requirements	None reported
Benjbelle Company	Fingerlings: 2 000 units; feed: 200 bags (10 000 kg)	Private hatchery for fingerlings; fisheries commission for feed	Order when needed; pay cash	No problems; never happened	Yes; also find new suppliers via introduction from other farmers. Would like suppliers to provide a credit facility

Company name	Raw materials	No. of suppliers	Ordering process	Problems	Long-term suppliers
Cecilia Fish Products	Fish, shrimps	Three suppliers	Monthly supply	No problems	Yes, has been working with the same suppliers for 20 years.
Daniel Oppong	Feed, corn supplements and concentrates	1 feed supplier	Buys every week	None reported. One recommendation is for suppliers to give price reduction (no details).	Same supplier for 6 years. Gives credit, so he believes it would be unfair to go to other suppliers if he has cash. Only going to other suppliers when his main suppliers does not have the goods
David Kuwornu Akumani	Pigs	His sister and nearby communities	Go to his sister or nearby communities	Other suppliers could improve and ensure cleanliness of the living environment of the pigs	Sister(?)
Doris Ahadzi Enterprise	Anchovies, herrings, sardinella	Four in all: two boats supply fish to the business daily during season. The business has shares in the ownership of these boats. Two other suppliers of fish also	Daily during the season	No problems with the suppliers whom they have part-ownership of the boats with. If there are problems with the fish supplied by the other two suppliers, then they will renegotiate the price	Yes, they also scout for new suppliers by discussing with canoe and boat owners
E-Juice Company	Pineapple, orange	Two commercial suppliers	Weekly order, cash on delivery	Yes	No comments
Emmanuel Gyabaah	Feed and chemicals, chicks.	Agricare Products supplies feed and chemicals. Agents in Berekum and Dormaa Ahenkro supply chicks. Topman Farms has also recently promised to provide chicks	Not mentioned	Day-old chicks are scarce. Even if deliveries fail sometimes, he keeps the same suppliers currently because of limited access. He tries to identify new suppliers through recommendations from other poultry farmers	Period not mentioned but it seems some are long-term suppliers
FAAMA MICK	Fingerlings: 200/month; Feed: 9 bags/month	Feed is bought from commercial producer, fingerlings from a private hatchery	Order when needed, pay cash. Monthly demand 200 fingerlings at GHS 0.9 per fingerling; 9 bags feed at GHS 74 per bag	Yes, for the hatchery. No for feed. Suppliers often increase the price and have limited supply of stock.	
Farm Hup	Tomatoes, lettuce, cabbage, sweet pepper, squash, habanero, cucumber	2 categories of suppliers: 30 farmers from three clusters; four greenhouses also supply	Weekly order. Part-payment before collection of production and full payment after receipt of product	Seasonality issues. Quantity can be met during season but not outside of season. If product does not meet expectation, she calls supplier and they resolve issue or re-negotiate price. Infrequent.	Yes. Greenhouses and farmers in Michel Camp cluster. New suppliers identified through agronomic work; shops organized by them across the country. Good relationship with suppliers
Fertile Acres Farms	Wheat bran, soybean, oysters, pre-mix, liaison, salt, micro-chem, concentrate	Commercial market	Ordered based on monthly demand on credit basis for 2 weeks	None reported	None reported
Goat Masters	Goats; own production but also have 5 suppliers of goats to the business. Coconut husks, but provided by farmers for free	Own production plus 5 suppliers	Call and then go look at animals and if they meet specification, then they buy. Pay 20% upfront and 80% later once goat sold	If they purchase goats and there are some issues, they try to renegotiate the price but sometimes it can be difficult. One bad experience reported which ended in court as animals sold were sick	Yes, 5 suppliers. To identify new suppliers, they have recruited field agents who search for people who have goat stocks ready to sell.
Jesko Farms	Feed	Feed purchased from fisheries commission regional office since 2016	Order when needed; pay cash. Monthly demand: 20 bags at GHS 90/bag	Sometimes feed is in short supply	Yes, since 2016. Wish that suppliers would provide a credit facility
Kenny Farms	Cassava sticks	Farmer-to-farmer supply	Order and paid cash based on price during farming season	None reported	No comments

Company name	Raw materials	No. of suppliers	Ordering process	Problems	Long-term suppliers
Mariseth Farms	Oil palm; cocoa; maize; rice; plantain.	Party sourced from employees working on Mariseth Farms and also bought from farmers in the community	Monthly orders	No issues with deliveries supplied	Employees on farm
Mountain Brown Rice	Brown rice; does not buy seeds	Avetime Women's Association and farmers in other nearby communities	Order by phone and rice will be delivered. 50% upfront and the rest after she has sold	Suppliers can meet her demand but because of lack of storage, she can only buy limited quantity. Also, she has to pay women to clean and remove all foreign particles at an additional cost to the business	Yes, women's association
Mr Kitchen	Ginger, garlic, onion, green pepper, Kpakpo shito, pineapple, mango, watermelon, soya bean, groundnut, garden eggs, tomato	Varies. Raw materials purchased from market on needs basis. Few fixed suppliers of ginger, garlic and onion	Transaction based on market: cash payments. Can order via phone for ginger, garlic and onion; part payment via mobile money, remaining at end of month	None reported	Yes. Three for onion. Reliability and willingness to offer delayed payment terms
Nyame Dekyere Farms	Cassava sticks	Own farm	N/A	N/A	N/A
Oak Farms	Seeds, fertilizers, poultry feed	Commercial market, PFJ stores	Cash and carry	None reported	None reported
Oserby Unique Ventures	Poultry feed: 1 942 bags, fish feed: 1 627 bags	Two suppliers: Rage and Jokas	Ordered weekly on credit basis	Tell them if any problems but has worked with them for a long time and have good relationships	Yes, for a number of years.
Rabbits Republic GH	Wheat bran, moringa leaves, pito mash, cocoa husks and feed	Commercial market	Based on monthly demand; cash on delivery	None reported	None reported
Wontesty Ventures	Fingerlings: 83/ month; Feed: 5 bags/ month. Catfish: if own supply insufficient	The business has a pond which is owned and managed by the company. Owner has 15 other ponds he can call on for supply of catfish if his own is insufficient. Feed is bought from commercial producer, fingerlings from a private hatchery	Order when needed; pay cash. Monthly demand: 83 fingerlings at GHS 1 per fingerling; 5 bags feed at GHS 88 per bag	No problems; both suppliers can meet quantity and quality.	No comments
Yehowa Nye Kporlanye Fish Processing	Tilapia, catfish. Wood fuel for smoking fish	Fish is supplied by the people in charge of her 15 boats. She will also buy from other individuals to process. Wood fuel purchased from local market	Buys firewood every 3 to 4 months. Fishing done daily	None as sourcing managed by her employees	Yes, her employees who have been working with the business for over 10 years.

Customers

WYEs were asked to provide some information on the customers they sell to, if any specific quality requirements are specified by these customers, and if they are able to meet their expectations. They were also asked if they have any long-term customers whom they have been selling to for more than two years, and if they have ever used any ICT solutions (mobile applications, platform service providers, etc.) that can help to market their product and link them to customers. They were also asked if they had their own brand/logo, if they ever received any feedback from customers on their product, and what they think they need to improve to be a better supplier to their customers. Table 8 provides a summary of the key findings on these aspects.

The WYEs sell their products to a range of customers, including individuals through direct-to-consumer sales – either at farm gate or retail activities (E-juice vans, fish stands, Acquatic World and

FAAMA Mick). They also sell to corporate clients, wholesalers, local market agents (market women), food vendors, hotels, restaurants and chop bars. Only two WYEs had had experience supplying to a supermarket and shopping malls. Mr Kitchen had supplied to a supermarket once but felt that his business was not yet sufficiently developed to meet the quantity requirements. The main customers for Mountain Brown Rice were shopping malls.

Consistent with the findings discussed above for suppliers regarding lack of developed end-markets with strict quality standards, only four customers made any specific requirements regarding the quality of the products purchased. For Farm Hup (vegetable wholesaler), customers demand freshness; for Mariseth Farms (cocoa and oil palm), buyers come to inspect the product before buying; for Adom Marada, chicks for sale must be healthy and alive and buyers will select the chicks themselves; and for Anderson Agumillah, pork with a lower fat content has been requested by customers so he has had to adjust the feed accordingly. Three of the poultry farmers supplying eggs (Fertile Acre Farms, Daniel Oppong and Emmanuel Gyabaah) mentioned customer complaints related to eggs size (small) which suggests that consumer quality standards for eggs do exist yet have not been formally communicated to suppliers at this stage.

When asked if their products could adequately meet the expectations of their clients, 69 percent (18) of the enterprises answered that they could. Three reported that they could meet quality but not the quantity demanded by their customers (Mariseth Farms, Benjelle and Fertile Acre Farms), and two responded that quality (egg size) has been an issue when it comes to meeting expectations, which has resulted in renegotiating price with customers (Daniel Oppong and Emmanueal Gyabaah). Seven of the enterprises (27 percent) reported that they take customer complaints and feedback very seriously and have worked to resolve issues with customers in the past. Twenty-one of the WYEs (81 percent) had long-term customers of two years or more, which is a good indicator of the market demand for their products and their ability to meet this demand. However, this may also be related to the lack of a marketing plan and limited knowledge of changes ongoing in the value chain and new opportunities; as well lack of collaboration because some WYEs are aware of much higher demand but cannot produce enough and do not search to cluster or create subcontracting or out-grower contracts with producers.

Fifty-eight percent (15) of the WYEs already have a brand or logo for packaging developed by themselves (6) or with external support (9). In terms of a customer development strategy, only 12 WYEs (46 percent) were able to verbalise their approach. Common approaches include participating in trade fairs (Mountain Brown Rice and Acquatic World), focusing on increasing sales to existing customers (five WYEs) and introducing new product lines and packaging (Mr Kitchen and Farm Hup). Others were hoping to eventually target export markets (Yehowa Nye Kplorlanye Fish Processing); or stimulate new customers by advertising locally through community information centres (David Kuwornu Akumani); or by purchasing a truck that would help them to identify new customers and supply to nearby towns (Emmanuel Gyabaah). Forty-two percent of WYEs (11) reported using social media to help market products, but no other ICT solutions were mentioned.

Table 8 Summary of value chain analysis findings on customers

Company name	Product	Customers	QA requirements and ordering process	Meet expectations	Long-term customers
Acquatic World Industries	Fish sausages	Individuals; sell cooked sausages in a fixed location near a drinking spot	None	N/A	Not yet
Adom Marada Farms	Chicks to wholesalers and broilers and layers to retailers at the local market	50 chicks; 30 broilers and layers	Alive; customers select which bird(s) they want to buy	Yes, provided that the incubator is working	Yes, for 2 years
Anderson Agumillah	Pigs	One customer that operates a chop bar	Fat content. He uses her feedback to monitor the feeding regime.	Yes no complaints, but he wish that he could produce more	Since 2019
Ayeh Farms	Rabbit (live, dressed, grilled); accessories from skin; maize	The family are the most constant clients	None specified. Takes feedback seriously. Has always been positive	Yes	Yes, since 2016
Benjelle Company	Fresh catfish, smoked and flakes	Consumers (corporate staff) outside Ashanti region; Nigerians	150 units/month. Personally deliver to consumers and home/workplace and they pay cash after deliver or via mobile money. Nigerians buy from farm gate and pay cash	Demand from corporate consumers exceeds supply. If customers are not satisfied with the product, then he does not make them pay	Yes, for over two years. Customers keep buying because they like the taste of his fish. It is not overprocessed and has not stayed long on the shelf (freshness)
Cecilia Fish Products	Smoked fish and shrimps	Customers located in Accra, Lagos, Kumasi, Koforidua, Tema and Togo	Biggest customers in Togo	Yes, can meet both. Not complaints.	Yes, in Togo customers have been buying from the business for 30 years.
Daniel Oppong	Eggs and chicken droppings	Customer in Berekum (average 30 crates), bigger customers in the Greater Accra region	Sometimes eggs considered too small by customers and in this case price is reduced	Sometimes customers have complained about the size of the eggs. But mostly, the feedback is positive. Some customers call and say that they are happy	Yes, for four years
David Kuwornu Akumani	Pork meat	Individuals in his community		Yes, customers have especially appreciated meat that is less fatty. He is adapting the feed regime accordingly	Since 2010
Doris Ahadzi Enterprise	Fresh and smoked anchovies, herrings, sardinella	Supplies to market sellers located in diferent parts of the country: Accra, Denu, Dormaa, Sunyani, Tamale, Techiman and Wa.	Weekly supply to customer in Techiman (60 baskets)	Can meet both	Yes in Techiman (18 years) and in Sunyani.
E-Juice Company	Fruit juice	Direct sale to consumers. Cold vans are strategically positioned at car parks of big supermarkets in Kumasi city and located at China Mall, university campuses, hospitals and schools	None specified	Yes, some complaints usually on bottling and packaging. Takes feedback seriously and has requested a new bottling prototype from manufacturers	Yes since 2016
Emmanuel Gyabaah	Cockerels	Individuals and 4 chop bars. Six retailers in Berekum	Sizing	Prices could be renegotiated if customers are dissatisfied	No
FAAMA MICK	Fresh catfish, smoked catfish, charcoal-grilled BBQ catfish with potatoes and vegetables and filets	Individuals, mostly corporate. Sales also from food stand at Kumasi mall	None specified. He delivers products to clients	Yes, can meet demand so far	Yes, since business opened in 2018
Farm Hup	Vegetables	Wholesale shops in malls (4), hotels (2) and market women	Weekly orders with quantity and quality specified.	Yes. Owner in direct charge of orders so if a customer is unhappy, she will solve the problem herself. Has only happened once. She frequently asks for feedback	Yes

Company name	Product	Customers	QA requirements and ordering process	Meet expectations	Long-term customers
Fertile Acres Farms	Dressed birds, live birds, eggs	Banks, churches, pharmaceutical companies and medical laboratories during Christmas and Easter, etc.	Sometimes eggs considered too small by customers	Sometimes unable to meet demand when production affected by diseases	Yes, some regular since 2016
Goat Masters	Goats and processed goat meat	Individuals, event organizers, corporate organizations and chop bars. Also get orders through Facebook sometimes from outside the country	Customers call to place orders and indicate demand. When meat is ready, drivers are dispatched to deliver	Yes. If customers are not happy with the product, business has channels for them to express their views and depending on the issue, price may be renegotiated but this hardly ever happens	Yes, corporate organizations are longest serving customers
Jesko Farms	Catfish	Usually, market women from urban centres in Accra. Customers also come on referral from Fisheries Commission. Nigerians also come and buy for their hotels and restaurants	All buy directly from farm gate. Average price: GHS 12/kg. Pay cash or sometimes on credit	Yes, can meet demand. No complaints but he would handle them seriously	No comment
Kenny Farms	Cassava	Individuals purchase from farm gate; sometimes product delivered to restaurants, chop bars and hotels. Transport paid for by customer, payment later	None specified	Yes, customer complaints are treated seriously and in some cases, new product given	Yes, same customers for 3 years
Mariseth Farms	Oil palm, cocoa, maize, rice, plantain	Food crops brought to Accra and sold to women in the markets. Cocoa sold to OLAM cocoa processing. Oil palm supplied to two organizations: Juabeng Oil Processing and Benso Oil Processing	The buyers come to the farm to inspect quality of product first before buying	Can meet quality but not quantity	No long-term customers for cash crops, only for oil palm and cocoa
Mountain Brown Rice	Packaged brown rice	Individuals to shopping malls. Three malls (Max Mart, Shell shops and Marina Mall). Individuals are often those advised to eat brown rice for health benefits	Mall has monthly orders	Customers give good feedback on the products. No problems reported	Yes
Mr Kitchen	Spices	Individuals are main customers, few food vendors, supermarkets tried once.	None specified	Yes, mostly. Some challenges with delivery of products to customers ordering via Facebook as no motorbike for transport and often low sales volumes	Yes, some individuals repeat purchases since business began
Nyame Dekyere Farms	Cassava and cassava powder	Individuals purchase from farm gate and pay cash. Sometimes product delivered to chop bars and market women. Transportation paid for by customers	None	Yes, customer complaints are treated seriously and in some cases, new product given.	Yes, same customers for 3 years.
Oak Farms	Maize, beans, birds	Purchase at farm gate	None specified	None specified	Since start 2018
Oserby Unique Ventures	Eggs, poultry, pigs, catfish, tilapia	Wholesalers, Nigerian point-and-shoot buyers for hotels and restaurants, market women, and an abattoir. Both selling at farm gate and by contract	Customer complaints are usually verified before replacing with new stock. Egg-yolk is yellowish and the eggs of rather high quality	Customer complaints are usually verified before replacing with new stock	Yes
Rabbits Republic GH	Dressed and grilled rabbits	Focus on retail market. Mostly purchasing at his door and sometimes delivery. Used to supply to hotels but stopped because of their "after 30 days payment policy"	None specified	None specified	Since start 2017
Wontesty Ventures	Fresh catfish, catfish kebab, catfish filets, smoked catfish, diced catfish, catfish nuggets	Individuals and door-to-door sales	Customers buy directly from farm gate and sometimes through door-to-door delivery	Yes, can meet demand. Complaints treated seriously and produce replaced if not acceptable	Yes, buying since 2016
Yehowa Nye Kporlanye Fish Processing	Fresh and smoked fish	Customers located in various places: Accra, Aflao, Akosombo, Ho, Hohoe, Koforidua, Kumasi, Nkakwa and Togo	Some come to the town to order while others call by phone and supply is sent	Can meet quality and quantity	Yes, in Accra, Akosombo, Kumasi and Togo. She has been selling to them for more than 10 years.

Support services

In addition to the financial service providers and training providers that were identified in Section 4.2 on access to finance and access to education and training, WYEs were asked to identify any other services they may use in the running of their businesses. They were also asked if they were members of any associations, and specifically if they were members of VSLAs.

Seven of the WYEs (27 percent) reported no use of any support services, with the exception of any training that was provided to them during the start-up phase. Therefore, 19 WYEs reported use of some form of support service to run their business. The most common service used was transport, with 11 WYEs (42 percent) reportedly outsourcing this to public bus, car, truck, motorbike and tricycle drivers to both deliver finished products and source raw materials. This was followed by finance with five WYEs reported to have accessed loans after the start-up phase from various providers; two enterprises used waste collection services for the waste generated by their cold rooms (Farm Hup and Acquatic World); another two regularly relied on extension services provided by the District Extension Office; only one reported sourcing any packaging material (E-Juice); another outsourced the primary processing of rice to a farmers' association (Mountain Brown Rice to Avetime Women's Association); and Yehowa Nye Kplorlanye Fish Processing regularly employed the services of a carpenter to make wooden smoking traces. Based on the responses from the WYEs, it is clear that there are still a number of gaps in service provision to agro-enterprises in Ghana. Consistent with the other findings on availability and adoption of ICT services and solutions, no enterprises reported to have engaged with any external service providers for this purpose. There was also a noticeable lack of quality inspection service providers, which is to be expected based on the findings under Section 4.5 on food safety and quality assurance.

In terms of membership in associations, 13 of the enterprises (50 percent) were members of some form of association. The recently formed Fish Processors and Traders Association was popular amongst WYEs operating in the fishery/aquaculture sector with three of the eight enterprises reporting to be active members. This was the only trader/processor association available from the subsectors examined, i.e. no other midstream associations had been formed in the other subsectors to date. Other popular associations were the African Women in Agribusiness online platform with four WYEs participating (Farm Hup, Mountain Brown Rice, Mariseth Farms, Acquatic World Industries [being the current president]). The founder of Mountain Brown rice is also the President of the Avetime Women's Association and a member of the Agricultural Chamber of Commerce. The founder of Mariseth Farms is a member in the commodity associations for all her main products (Rice Planters Association, Oil Palm Growers Association, Cocoa Growers Association). Two WYEs in the poultry sector were members of the Poultry Growers Association in Berekum (Jesko Farms and Daniel Opong); both WYEs producing and processing rabbit were members of the Rabbits Association Ghana and the Everything Rabbit Kumasi chapter; Goat Masters was a member of the Young Professionals in Agricultural Development network, and David Kuworni Akumani was a member of the Indigenes of Mekpe Association. None of the WYEs were members of any VSLAs, which again indicates the perceived lack of relevance to WYEs for this form of association, as discussed under Section 4.2 on access to finance – VSLAs. It is clear from the findings that the WYEs prefer to be involved in commodity-based associations with members who share common production and marketing interests. In terms of services provided by these associations, in addition to the knowledge-sharing, training and networking opportunities frequently provided, several of the WYEs wished that their associations would also help facilitate access to (affordable) finance.

7. Competitor analysis

The enterprises were asked about their competitors and if they have any strategies to defend their business. Twenty-four (92 percent) of the enterprises consider that they have competitors. Only three believe they have no competition at present. Wontesty Ventures considers that their products are so innovative that they do not yet have any competition; David Kuwornu Akumani is the only enterprise in the community that slaughters and sells pork in the local market; and Mr. Kitchen recognizes that there are competitors but considers that they produce “non-natural spices”, and, therefore, are not in direct competition with his products.

The WYEs mention other actors in the same value chain as their competitors. Some of them mention particular competitors while other share more general information. Two enterprises mention market women that can offer the same product for a lower price as the main competitors. Most of the enterprises do not mention an exact number of competitors and a few of them mention between one and four competitors.

The main strategy to defend their business is to offer products of certain qualities (e.g. hygienic, nutritious, healthy, tasty). This was mentioned by ten (38 percent) of the enterprises. Other strategies include offering low prices (3), diversifying and moving into other segments of their value chain, seeking new (foreign) markets, marketing, consumer relationships, having a niche in the target market (e.g. being the only processor in the community), being patient with delayed payments, expanding production to meet demand, educating customers on the benefits of their product, and giving free advice to farmers.

Drawing on the SWOT analysis below (Section 4.9) and information provided by the enterprises in this section, it appears that competition is harsh for many of them. Some of them have good strategies for defending their share of the market by finding a niche or diversifying into other value chains or segments of their value chain; yet for many, they are without clear strategies and may benefit from advice and capacity development in this area.

Table 9 Summary of findings on competitors

Company name	Knowledge of competitors	No. of competitors	Strategies to defend business
Acquatic World Industries	Yes, those producing beef sausages	Not specified	Hers is a healthier product as she uses vegetable fat and natural spices. Strategy is to educate consumers on benefits to make product popular.
Adom Marada Farms	Yes, 4 similar poultry farmers within the municipality. Males with access to land and capital for expansion	4	Not mentioned in this section but previously mentioned that organic feed gives good flavour and that she produces rare species and target corporate customers
Anderson Agumillah	Yes, large farmers, e.g. a farm that supplies to the Achimota Shopping Mall	Not specified	Expand his farm size and improve the quality of production. This will lower his cost and enable him to maintain customers
Ayeh Farms	Yes, poultry farmers	Not specified	Rabbit meat is tastier and healthier. The opportunity to turn the rabbit by-products into other marketable products
Benjbelle Company	Yes, key competitors are the market women whose prices are lower than his	Not specified	He targets corporate workers who have the financial means to buy his products. Currently exploring export opportunities to the EU and has already received an invitation to present samples.
Cecilia Fish Products	Yes, many competitors	Not specified	Long-term experience in processing fish products
Daniel Oppong	Yes, there are many	Not specified	Good communication skills, good customer relationship
David Kuwornu Akumani	No, many people in the community are rearing pigs but he is the only one that slaughter and sell	0	According to the owner, his competitive edge is the cleanliness of the environment in which he rears and processes the meat

Company name	Knowledge of competitors	No. of competitors	Strategies to defend business
Doris Ahadzi Enterprise	Yes, many competitors	Not specified	Good management strategy and hygienic processing
E-Juice Company	Yes, all fruit juice producers could be considered competitors but the closest is Blue Skies	One main	Marketing strategy and vegetable juice for treating cancer patients
Emmanuel Gyabaah	Yes, many competitors	Not specified	He reduces prices and is patient with customers when there are delays in payments
FAAMA MICK	Yes, market women who produce smoked fish at lower prices but believes their fish has higher carbon content. Also Wontesty ventures who have competitive edge on technology and science of catfish production	Several in the market	His networking skills, marketing and branding abilities
Farm Hup	Yes, many	Two main ones: OLAMP and MR Price	Offer free agronomic advice for farmers to produce and supply high-quality product directly to them
Fertile Acres Farms	Yes, poultry producers in the locality and rabbit producers	Not specified	Her competitive advantage is the processing, as most local farmers are only producing
Goat Masters	Yes, many people engaged in same value chain	Not specified	Enterprise has a competitive edge as it has a defined marketing strategy which works to their advantage. Business is also privileged to be exposed to numerous training opportunities that have helped them to defend their market share
Jesko Farms	Yes, none for fish farming but many for poultry farming	Not specified	He does not use chemicals in the production of his fish so they taste better and are safer than others in the market
Kenny Farms	Yes, main competitors are local farmers in the community	Not specified	To improve market share, plans to diversify into coconut production and processing as it is rare within the community
Mariseth Farms	Yes, there are a number of competitors but do not know details	Not specified	Huge access to land provides competitive advantage to expand cultivation to meet demands of customers
Mountain Brown Rice	Yes. Many middlemen in local rice processing but sees this as a good thing as will promote the benefits of the product and grow the market	Not specified	Her rice has a special taste that attracts her customers. She also has access to international markets, which her competitors do not.
Mr Kitchen	Yes, but they produce non-natural spices so not the same line of production	Not specified	Low prices, natural spices and drinks
Nyame Dekyere Farms	Yes, local farmers within the community	Not specified	To improve market share plans to diversify into coconut production and processing as it is rare within the community.
Oak Farms	Yes, all maize, beans and poultry producers with the community but the problem has more to do with falling prices during the bumper season	Not specified	Not mentioned
Oserby Unique Ventures	Yes, Boris B Farms, Top Man Farms, Mfum Farms and Besease Farms. Feels their educational background in animal science and food nutrition is their competitive advantage	4	Not mentioned
Rabbits Republic GH	Yes, all rabbit producers are his competitors but he feels like the market is big enough	Not specified	His grilling recipe gives his product a unique taste
Summary	24 (92 percent) of the enterprises have competitors.	20 (77 percent) do not specify the numbers and the other mention between 1 and 4 competitors	10 (38 percent) offer products of a certain quality; 3 (11.5 percent) offer low prices, seeking new markets, marketing and consumer relationships, having a niche in their target markets, expanding production to meet demand
Wontesty Ventures	No direct competitors as his products are innovative. FAAMA Mick might be closest but he only produces grilled fish.	One	Access to technology (Wontesty smoker) and innovative ideas in terms of products and catfish marketing
Yehowa Nye Kplorlanye Fish Processing	Yes, many competitors	Not specified	She has reliable supply of fish since she owns the boats

8. Financial performance

In this section of the survey, WYEs were asked to provide the information needed to conduct a gross marginal analysis on their main products over the previous financial year (2018) and provide a self-

assessment of the viability and sustainability of the business. In order to calculate their net income, they were asked to provide information on the income generated from product sales in 2018, all variable costs (e.g. raw materials and feed, transport, electricity, casual labour, etc.) and any fixed costs (e.g. rent, machinery depreciation, permanent staff). A business that is deemed as “viable” should be able to generate enough income to cover all production costs, tax and capital repayment (debt servicing), with enough left over for the owner to earn a living wage and ideally reinvest in the business. A business that is deemed “sustainable” should be able to generate enough income in the long-term for reinvestment and growth, have a succession plan in place for management of the business and be resilient enough to continue to be profitable even in the face of increased costs or a reduction in sales.

This section of the survey proved to be difficult for many enterprises. As identified under Section 2, on business operations, access to finance and savings – financial training, 88 percent (23) of the enterprises reported that they had had some form of financial management/record-keeping training. Yet despite this, many of the owners struggled to provide the details required to complete the marginal analysis. There were a number of gaps in the variable costs reported and many businesses stated that they had no fixed costs (which seems highly unlikely) or did not know what these were. Financial management/book-keeping and basic accounting skills are clearly an area that needs further reinforcement for all WYEs. Record-keeping also needs to be improved, as again many enterprises could not accurately report on the quantities of raw materials purchased or units of product sold.

Based on the information provided 19 WYEs (73 percent) were generating a net profit which ranged from the highest earner, Farm hup (woman and youth led, peri-urban, vegetable wholesaler, est. 2016), with a net income of GHS 517 112 to lowest earner, David Kuwornu (adult man, rural, pig production, est. 2006), with a net income of GHS 740. In addition to Farm Hup, four other WYEs were earning more than GHS 100 000 net income (19 percent total):

- Yehowa Nye Kplorlanye Fish Processing (woman and youth led, rural, fish processing, est. 2014): GHS 525 600; no fixed costs given;
- Mountain brown rice (woman-led, rural, rice processing, est. 2000): GHS 401 500; no fixed costs;
- Mariseth Farms (woman and youth-led, rural, production and wholesaling of cash and food crops, est. 2012): GHS 180 000; no fixed costs;
- Doris Ahadzi Enterprise (woman-led, peri-urban, fish processing, est. 1993) – GHS 103 840- no fixed costs

The five highest earning WYEs were all engaged in some form of value addition (processing) or the production and marketing of cash crops (oil palm and cocoa), and four of the five enterprises had been in business for 5 to 30 years. Only Farm Hup could be considered as a newly established business, as they began operating in 2016.

One WYE was earning between GHS 50 000 and GHS 100 000 (Daniel Oppong – adult man, rural, poultry production, est. 2011): GHS 54 644.

Five WYEs (19 percent) were earning between GHS 5 000 and GHS 20 000:

- Emmanuel Gyabaah (adult man, rural, poultry production, est. 2017):– GHS 17 500
- Cecelia Fish Products (woman-led, rural, fish processing, est. 1990): GHS 12 720
- Benjbelle (youth-led, peri-urban, fish production and processing, est. 2014): GHS 9 950
- Wontesty (youth-led, peri-urban, fish production and processing, est. 2016): GHS 8 590
- Rabbits Republic (youth-led, urban, rabbit production and processing, est. 2017): GHS 6 600

Including Davaid Kuwornu, eight WYEs (31 percent) were earning less than GHS 5 000:

- Anderson Agumbillah (adult man, peri-urban, pig production, est. 2017): GHS 4 600
- Nyame Bekyere Farms (woman-led, rural, cassava production, inherited farm): GHS 3 765
- Goat Masters (youth-led, peri-urban, goat production and processing, est. 2000): GHS 3 585
- Kenny Farms (youth-led, rural, cassava production, est. 2014): GHS 3 030
- Adom Marada (woman-led, peri-urban, poultry production, est. 2016): GHS 2 320
- E-Juice (woman-led, urban, fruit processing, est. 2013): GHS 1 800
- Jesko farms (youth-led, rural, fish production, est. 2004): GHS 1 600
- David Kuwornu (adult man, rural, pig production, est. 2006): GHS 740

With the exception of E-juice company and Goat Masters, the remaining six WYEs earning less than GHS 5 000 were engaged primarily in primary production with no value addition activities.

Based on the above findings, if we compare the net income earned by the WYEs with both the national average per capita income which is estimated at GHS 11 742 (USD 2 200) (freedomfromhunger.org), and a recent estimate of the living income for two adults with three children in Ghana, GHS 17 568 per annum (GIZ, 2018), only eight of WYEs (31 percent) can be considered as earning more than the average annual per capita income, and from that, only five (19 percent) are earning what could be considered a living wage for a family. This finding is consistent with recent discussions in the literature on youth entrepreneurship that found that many youth enterprises remain engaged in subsistence activities that struggle to return a decent living wage for the owners (OECD, 2017). It appears that the owners of these enterprises may choose to be self-employed for lack of better options, or perhaps in the case of several of the enterprises included in this study, a personal commitment to agriculture and a passion for their businesses also supersedes the profit-making objective, at least in the short-run. Indeed, 23 percent (6 WYEs) were found to be operating at a loss (as listed below), yet none of these entrepreneurs mentioned any plans to exit the business.

Based on the gross margin analysis for 2018, six WYEs (23 percent) were operating at a loss:

- Oserby Unique Ventures (woman-led, rural, catfish and poultry): GHS 1 168 176
- Fertile Acre Farms (woman-led, peri-urban, poultry production and processing): GHS 22 620
- Mr Kitchen (youth-led, peri-urban, spices): GHS 18 760
- Acquatic World (woman-led, peri-urban, fish processing): GHS 16 471
- FAAMA Mick (youth-led, urban, fish production and processing, est. 2018): GHS 5 906
- Oak Farms (woman-led, urban, maize and poultry production): GHS 4 350

Five of the six enterprises operating at a loss are engaged in fish and poultry production. To some extent, these losses can be explained by high feed costs and other inputs (e.g. fingerlings). For example, 94 percent of total variable costs for Oserby Unique Ventures was spent on fish and poultry feed with total feed costs exceeding annual income by GHS 824 376, despite a high annual income from sales of GHS 3 255 000. During the interviews, many of the fish production and poultry enterprises made requests for support to learn how to produce their own feed, and the findings from the financial analysis section clearly indicate that feed cost is a critical issue affecting the survival of these businesses. For Mr Kitchen, the marginal analysis was conducted based on the sales of spice products only, yet his product range also includes drinks; so perhaps the losses would be less if this income had also been included. However, he mentioned that 2018 was a particularly difficult year because of the negative impacts on consumer spending as a result of the financial sector clean-up policy.

Overall, the findings provide a rough snapshot of the current financial health of the WYEs and unfortunately, the picture is not particularly bright, with over 50 percent of the enterprises either returning low net profit to owners (i.e. 31 percent earning less than GHS 5 000) or operating at a loss (23 percent) based on 2018 figures. It is interesting to note that even for those enterprises making very small profits or operating at a loss, many of the business owners thought that the enterprises could still be considered as “viable” based on the potential size of the market to absorb their products (e.g. Mr Kitchen, Goat Masters). This clearly indicates that greater financial management skill is needed in both analysing and managing the accounts for the business in order to identify ways to increase profitability by reducing costs or increasing sales/diversifying products rather than relying on general market trends as an indicator of viability. For fish and poultry production and processing enterprises, reducing feed costs is a major challenge that must be overcome to ensure the ongoing sustainability of these businesses. It is also interesting to note that the five highest performing WYE are all engaged in some form of value-addition activities that have enabled them to capture greater returns from the midstream segments of the chain. It also appears that they have more control over the pricing of their products when compared to WYEs that engage in primary production activities only.

Table 11 Summary of findings on financial performance

Company name	Product	Annual turnover	Net income per annum	Raw materials as % total Value Chain	Return on Investment (ROI)	Viability	Sustainability
Acquatic World Industries	Fish sausages	GHS 47 349	GHS 16 471 loss	55%	Negative; operating at a loss.	She believes the business is viable but currently operating at a loss	To ensure sustainability she wants to get her children involved, diversify into training and establish an incubator hub
Adom Marada Farms	Chicks, broilers, layers of different species	GHS 13 500	GHS 2 320	~52%	21%	Currently viable according to transcript but net income is low (GHS 2 320 or USD 415 in 2018). However, in the absence of other opportunities, the business provides subsistence to her and her dependents and 1 part-time staff	Currently sustainable according to transcript. But not sustainable when looking at scale and net-income as well as high cost of feed and disease risk. However, the company has access to additional land for future expansion
Anderson Agumillah	Pigs	GHS 7 000	GHS 4 600	Salaries and feed costs not separated	Financial calculation not complete (variable cost seems low and no fixed cost)	According to the owner it is viable as it will not run at a loss if he manages it well. (Comment: Not sure if financial calculation is correct. Yet, as secondary source of income, he might also be able to use his prime income to cover costs)	According to the owner, it is sustainable as it only requires one person (him) to be focused and having love for the animals. Yet business lacks a succession plan. Sustainability may increase if he could train his employee or a family member to manage it in his absence
Ayeh Farms	Rabbit (live, dressed, grilled); keyholders; maize (last production in 2018)	Not specified	Not specified			Not specified and difficult to assess without data on rabbit sales. Family members the most constant customers	Not specified and difficult to assess without data on rabbit sales.
Benjbelle Company	Fresh catfish, smoked and flakes	2016: GHS 40 000	GHS 9 950	83% on feed	33%	Business provides a good return on investment but net income generated is low and below the living annual wage recommended for Ghana	Young business with low income to date and high variable costs. Lost one season because of climatic conditions so this risk remains. Time will tell if/how it can be sustainable

Company name	Product	Annual turnover	Net income per annum	Raw materials as % total Value Chain	Return on Investment (ROI)	Viability	Sustainability
Cecilia Fish Products	Smoked fish and shrimps	GHS 25 216	GHS12 720	77%	No fixed costs included	Believes the business is viable yet 2018 results show this is questionable. Net income is less than living income proposed for Ghana at GHS 17 568/annum	Sustainable as the business was inherited from her mother, they have good long-term suppliers and customers and her children are being trained to take over the business
Daniel Oppong	Eggs and chicken droppings	GHS 152 024	GHS 54 644	≈ 90(?) Not clear as transport cost unclear and salary not mentioned in table	22%	Viable because "in a week I can expect about GHS 3 000 and through this I can support my family". (Compared with average salary and the net income of the other businesses in the study, it seems viable.)	"The business is sustainable once you put yourself to work harder." Teaches daughter how to do things to manage the farm to enable her to take over in the future
David Kuwornu Akumani	Pigs/pork	GHS 14 400	GHS 740	≈93	5%	According to the owner, the business is viable because pigs breed many piglets. However, net profit and ROI low. Since it is a part-time activity, it may be viable for the owner	The owner believes that it is sustainable as the profits can be invested in other assets. The net profit of 2018 was very low though
Doris Ahadzi Enterprise	Fresh and dried fish	GHS 202 720	GHS 103 840	73%	No fixed costs included	Viable as she has a reliable source of income to take care of her family	Sustainable because her son really understands the business and is putting in place the structures to increase profit margins
E-Juice Company	Fruit juice	GHS 93 600	GHS 1 800	36%	2%	The business has very high variable costs for labour, fuel for vans, and raw materials. It also had additional fixed costs from purchasing a cold van and three freezers in 2018. Current net income is not a living wage for the owner	Sales are good but profit margins appear to be low, so large volumes are needed. The business has been operating since 2013 and steadily growing; so if it can reduce costs over time, then profit should go up but additional revenue sources are needed, hence recommendations for by-product and bakery business
Emmanuel Gyabaah	Cockerels	GHS 50 000	GHS 17 500	Not provided but likely high in line with similar enterprises	54% but no fixed costs were given so unlikely to be accurate	Viable because "farming in general is lucrative" and there is always a market. At present the profit margin and ROI seems good	According to the owner, the business is sustainable since he has land to expand
FAAMA MICK	Fresh catfish, smoked catfish, charcoal-grilled BBQ, catfish with potatoes and vegetables and fillets	2018 GHS 10 500	GHS 5 906 loss	45% on feed and fingerlings	Negative; operating at a loss but business only started in 2018	Too early to tell. Business only started in 2018 and he lost half of the fingerlings. However, he has recouped half of his initial investment in the first year (GHS 7 000); so may still be viable in the longer term.	Again, too early to tell but the owner has ambitious plans and is learning from his mistakes in the process
Farm Hup	Vegetable (8)	GHS 1 766 400	GHS 517 112	95%	41%	Viable	Sustainable because she has the expertise to run the business and she can always source the raw materials she needs
Fertile Acres Farms	Birds and eggs	GHC 15 600	GHS 22 620 loss	88%	N/A operating at a loss	Currently not viable. Run at loss and variable costs were ≈150% of income in 2018	Good relationships with suppliers and consumers. A lot of competition. High variable costs and big loss in 2018. Currently not sustainable

Company name	Product	Annual turnover	Net income per annum	Raw materials as % total Value Chain	Return on Investment (ROI)	Viability	Sustainability
Goat Masters	Live and processed goat	2018 GHS 88 320	GHS 3 585	78% on live goats	4%	Viable according to business owner as plenty of opportunities to substitute imports. Ghanaian enterprises only control 9% of production and processing of meat so plenty of market share to capture. Despite high gross income, net income for 2018 is relatively low as variable costs are high (labour, raw materials)	Owner believes the business is sustainable because demand is strong and people eat meat every day and will continue to do so. However, the individual sustainability of the business should also be considered, and in particular how to reduce high variable costs
Jesko Farms	Catfish	2018:GHS 36 000	GHS 1 600	82% on feed	5%	Low income over 12-month period but did invest (GHS 8 000) in digging new ponds which has reduced profitability in the short run but should increase in long run	Unless feed costs can be reduced and additional income generated from increased sales, the business is unlikely to be sustainable
Kenny Farms	Cassava	GHS 10 600	GHS 3 030	14%	40%	Low income over 12-month period	Value addition could help to improve profit margins
Mariseth Farms	Oil palm, cocoa, maize, rice, plantain.	GHS 600 000	GHS 180 000 (no fixed costs)	57%	42% (no fixed costs)	Reported as viable as she is making good profit and potential to increase sales to existing customers	The structures for managing the farms are in place
Mountain Brown Rice	Brown rice	GHS 636 500	GHS401 500 (fixed costs not included)	85%	N/A as no fixed costs included	Viable as strong market demand and business can also export to international market	Strong market demand, good customer relationships and detailed succession plan
Mr Kitchen	Spices (9)	GHS 60 000	GHS 18 760 loss reported based on spice sales	55%	N/A operating at a loss	Owner: Viable because people will always need spices. Yet currently operating at a loss	Large market, therefore, business should be sustainable. However, marginal analysis for 2018 reveals business operating at a loss
Nyame Dekyere Farms	Cassava	GHS 4 370	GHS 3 765	N/A raw material sold	N/A as no fixed costs included	Small-scale business but making decent returns with very low variable costs and no reported fixed costs	Plans to expand and diversify the business (rabbits and coconuts) are in place and daughter involved in the business as part of longer-term succession plan
Oak Farms	Maize, bans, birds	GHS 47 000	GHS 4 350 loss	≈ 47%	-8%	Currently operating at a loss	May survive if it becomes profitable, e.g. by reducing feed costs/focus on crop production. Currently it is not sustainable
Oserby Unique Ventures	Eggs, poultry, pigs, catfish, tilapia	GHS 3 255 000	GHS 1 168 176 loss	≈94%	-26%	Currently at loss because of high cost of feed	Currently at loss because of high cost of feed. Could be sustainable if the farm could produce its own feed and also diversify into non-agricultural activities such as eco-tourism
Rabbits Republic GH	Dressed and grilled rabbit	GHS 19 400	GHS 6 600	≈ 20%	50%	Good profit margin, ROI, and there seems to be sufficient demand. Part-time activity and provides livelihood for one full-time staff	His staff can run the business in his absence

Company name	Product	Annual turnover	Net income per annum	Raw materials as % total Value Chain	Return on Investment (ROI)	Viability	Sustainability
Wontesty Ventures	Fresh catfish, catfish kebab, catfish fillets, smoked catfish, diced catfish, catfish nuggets	2018:GHS 40 170	GHS 8 590	22% on feed and fingerlings (only one pond so lower than above?)	27%	Business provides a good return on investment but net income generated is low and below the living annual wage recommended for Ghana. Owner says this is attributed to pond construction and not sales	To ensure sustainability of the business, owner says they need to increase their consumer base and will try to do so through exhibitions and food fairs
Yehowa Nye Kplorlanye Fish Processing	Fresh and dried fish	GHS 2 007 500	GHS 525 600	98%	No fixed costs included	Viable as she has a good customer base and business returning a good profit. She has been able to pay for her children's education, medical expenses and other expenses from the business	Sustainable because she can source enough raw material and she is training her children to inherit the business

9. SWOT Analysis

The enterprises were asked to analyse their overall strengths, weaknesses, opportunities and threats facing their businesses (SWOT analysis).

Strengths. Nine (35 percent) of the enterprises mentioned issues related to customers as key strengths. Good relationships with suppliers were seen as strengths by five (19 percent) of the enterprises, with one WYE citing strong relationship with employees as a key strength and another mentioned their relationship with the Fisheries Commission. Factors related to the quality of the products (including hygienic products, nutrition and good taste) were mentioned by 8 (31 percent) of the enterprises. Different types of skills were also mentioned such as knowledge of production, processing, marketing (including social networking and digital marketing) and branding. Other strengths included location of the business, access to markets, access to land, access to grants, clear vision, best district cassava farmer and best municipal farmer of the year awards, trustworthiness, passion and the use of female machine operators.

Weaknesses. Lack of certification or adherence to quality standards were mentioned as a weakness by six (23 percent) of the enterprises. No value addition/only operating in the production segment of the value chain was mentioned by three (11.5 percent). Limited access to (input and output) markets, capital and infrastructure (2) and/or environmental/geographic/agronomic constraints, including overdependence on rainfall patterns (2). Two enterprises mentioned difficulty in setting the price of their products. Other issues related to limited capacity to meet consumer demand included limited production storage, processing and logistical capacity, as well as lack of ability to monitor the farm, lack of planning and no business strategy. Unknown product (1), low market share (1) and high labour turnover were also mentioned as weaknesses.

Opportunities. High demand, or large market, for their products was seen as the most important opportunity for 15 (58 percent) of the enterprises. Of them, four mentioned the domestic market and eight mentioned market opportunities abroad. Nine (35 percent) of the enterprises saw the ability to meet demand or expand production as a major opportunity. Other opportunities mentioned were the ability to diversify the enterprises (e.g. into ecotourism or other products), generate youth employment (2), access raw materials (1), become a hub for the One District One Factory (1D1F) policy (1) and offer rare products (1).

Threats. Competition or market saturation were seen as major threats by 11 (42 percent) WYEs. Of those, three mentioned local competitors, two mentioned market women and one mentioned

multinational companies. Environment factors (such as unfavourable policies, changes in tax policies, lack of support, no fuel subsidies, and inadequate public investment in infrastructure) were mentioned by five (19 percent) and financial issues by three (11.5 percent) of the enterprises. Other mentioned threats include biosafety (4: rodents 2 and animal diseases 2), bushfires (1), climate change leading to unpredictable weather patterns (1) and sea erosion (1). Taken together, biosafety and environmental factors were mentioned by seven or 27 percent of WYEs. Inconsistent production, low commitment from workers (1), high cost of feed (1), competition for land with pastoralists (1), high carbon content of smoked fish limiting access to the EU market (1) and cultural norms that limit the ability to train, hire and retain female heavy farm machine operators (1), were also mentioned as threats.

Summary. The most important strengths as perceived by the enterprises can be categorised as (1) intangible assets such as social networks and relationships with consumers and suppliers; (2) technical skills, such as knowledge of farming and processing; and (3) quality of the products. The most important weaknesses can be categorised as (1) lack of quality assurance; (2) lack of value-addition; (3) limited access to capital, infrastructure and markets; (4) constraints in meeting consumer demand; and (5) “other,” including weak bargaining position and low market share. The most important opportunities were (1) market opportunities; (2) the ability to meet demand (related to the first); and (3) an ability to diversify. The biggest threats were related to (1) competition; (2) enabling environment factors, and 3) biosafety and other environmental factors.

The enterprises showed a varying degree of awareness of their strengths, weaknesses, opportunities and threats. Some of the weaknesses and threats that were identified in other parts of the survey, such as high variable costs, were not emphasised by most of the enterprises. WYEs in Ghana should carefully consider their strengths, weaknesses, opportunities and threats and address the ones within their control.

Some of the strengths, weaknesses, opportunities and threats can be seen as “internal” whereas others are “external” and require improvement of market conditions and political responses. To capitalize on the strengths and opportunities while addressing the weaknesses and threats, policy-makers and development cooperation organizations may consider capacity development in the areas of marketing, quality assurance, value addition and diversification, as well as investments in institutions and infrastructure to increase productivity, value addition and market access as well as strengthen resilience (related to biosafety and other environmental challenges as well as economic and social challenges).

Table 9 Summary of findings from SWOT analysis

Company name	Strengths	Weaknesses	Opportunities	Threats
Acquatic World Industries	Products' unique and good taste; passion of the owner	Product not well known; no marketing strategy	Potential to grow market as only company producing fish sausages to date and product well received by customers	Lack of enabling environment for growth of agribusiness and fishing industry
Adom Marada Farms	Municipal best female farmer; good relationship with suppliers; good relationship with customers; tasty meat thanks to organic farming; offer variety of birds that are rare on the local market; practice cross-breeding of local and foreign birds	Market women determine price of produce; complaints from neighbours about stench which would affect possible expansion	Strong opportunities to target corporate markets	High cost of feed; disease and weather
Anderson Agumillah	Good understanding on how to manage the farm and the animals in general	Lack of capital to expand and to get the infrastructure in place	There is market for pork	Inadequate investment in infrastructure by the government
Ayeh Farms	Available retail markets	Manual processing; no certificate	Rare products from rabbit hide for tourists	Poultry farmers; breed that reproduce too little; Fulani herdsman that limit land access for maize production

Company name	Strengths	Weaknesses	Opportunities	Threats
Benjelle Company	Access to corporate market; good relationship with suppliers and consumers	Trade barriers limit access to EU; limited capacity of the chorkor smoker to smoke more fish; processing of fish done manually	Potential to increase supplies to existing customers and develop export market	Market women who offer same product at cheaper price
Cecilia Fish Products	Strong integrity of the business as customers see they are a trustworthy supplier; good food safety and hygiene; proper record-keeping	Inability to access reliable supply of premix fuel for boats; lack of fresh water for processing	Potential to increase supplies to existing customers	Sea erosion
Daniel Oppong	Good relationship with supplier and transporters of eggs	Inadequate illumination at the farm because of lack of access to electricity	Reliable market	
David Kuwornu Akumani	Producing quality pig and pork	Current poor disposal system for the dung	The market is available	Diseases and infections
Doris Ahadzi Enterprise	Supply hygienic fish to customers	Lack of large storage facility and cold room to preserve fish	Discovered market in Eastern region; export to the diaspora	Lack of funds to expand; no subsidy for premix fuel
E-Juice company	Has FDA certification which many juice business do not; social networking and marketing skills, access to grants	High labour turnover	Opportunities to internationalise product brands	Market saturation
Emmanuel Gyabaah	Good relationship with suppliers of feeds	Current structure is too small	Land for expansion	
FAAMA MICK	Corporate clientele; innovative ideas on catfish branding; marketing skills and social networks even in the diaspora; socially visible to potential clients at mall and social gatherings	No FDA certification yet	Opportunities to export to African markets and to sell fish to Ghanaian markets from trusted source	Market saturation; access to finance
Farm Hup	Good knowledge of the business; good marketing strategies and networks	Not consistent in enforcing pricing for customers	Could expand to other parts of Africa	Inconsistence in production of vegetables
Fertile Acres Farms	Social networks -> access to corporate clients; value addition to produced birds	No certificate from Food and Drugs Authority; Manual production and processing	For youth employment; for expansion due to access to family land	Biosecurity; loss of birds due to epidemic; competition from large number of local poultry; competition from rabbit producers
Goat Masters	Business has a solid brand; understands processing strategies; skills required are available	Lack of funds	Raw materials are available; market is there	Unfavourable policies
Jesko Farms	Strong relationship with Fisheries commission who recommend him to buyers; fish pond located in valley and water-logged area so year-round production and reduced cost of operation; wide access to land from extended family	No quality standards in fish processing so cannot sell to higher value customers like supermarket; no proper documentation of farm activities and records	Farm site and organization of fish pond would be excellent for ecotourism; opportunity to expand fish farm and practice integrated farming; produce fingerlings for local fish farmers	Exploitation by market women and limited access to wholesale market reduces profit margins of fish stock
Kenny Farms	Good relationship with customers; 2014 best district cassava farmer makes him known to key stakeholders in the district	Over-dependence on rainfall pattern; no value addition	Potential to expand because of access to land; influential in terms of profession as rural teacher	Target same customers as local competitors within the same community
Mariseth Farms	Good relationship with employees	Inability to completely monitor entire farm in one day	New customers have been identified who require large quantities	Destruction of farm from bushfires, rodents and birds
Mountain Brown Rice	Economic empowerment of women in Avortime area a key strength	Inability to meet market demand of customers directly	High demand for Mountain Brown Rice in USA	Rodents on farm before rice is harvested; climate change leading to unpredictable weather conditions (e.g. heavy rain prior to harvesting)
Mr Kitchen	Business has a clear vision. Product is a healthy, medicinal product of good quality	Low market share; lack logistical capacity	Large domestic and regional market	Competition from multinational companies engaging in natural spice production
Nyame Bekyere Farms	Good relationship with customers	Overdependence on rainfall pattern; no value addition	Possibility to expand because of land access	Target same customers as local competitors within the same community

Company name	Strengths	Weaknesses	Opportunities	Threats
Oak Farms	Use of female machinery operators essential strength to her farm business; access to social networks in attracting donors/programme sponsors	Only into production	Opportunities to expand thanks to availability of farm land	Cultural norms that delimits her ability to train, hire and retain female heavy farm machinery operators; financial clouds
Oserby Unique Ventures	Strategic farm location; good knowledge of animal production based on educational background; good relationship with suppliers; good relationship with consumers	High variable cost limits business profit margins and sustainability; operating 83% below farm capacity	Ideal for eco-tourism; potential hub for government 1D1F policy	Competitors who offer the same products to same targeted markets; high carbon content of smoked fish reduces access to EU markets
Rabbits Republic GH	Attracts Muslim clients because of the practice of Halal; digital marketing; available corporate clientele; strategic location	No certificate from Food and Drugs Authority; no processing or packaging	For youth employment	Diseases
Wontesty Ventures	Access to new technology; corporate clientele; innovative ideas on catfish products and branding	No FDA certification; no processing and packaging plant	Business could generate youth employment; many new products can be made from catfish	Proliferation of new technology leading to increased competition; change in government policies to tax fish farmers
Yehowa Nye Kplorlanye Fish Processing	Provision of quality products	Lack of planning	Availability of market for her products in terms of supply to supermarkets and to export	Low commitment from workers

Table 10 Consolidated findings from SWOT analysis

Strengths	Weaknesses	Opportunities	Threats
Relationships with – consumers 9 (35%) – suppliers 5 (19%) – employees 1 – the Fisheries Commission	Lack of certification: 6 (23%) No value addition to primary products: 3 (11.5 %) Difficulties in setting the price	High demand for their products: 15 (58%) Capacity to meet demand/expand production: 9 (35%)	Competition/market saturation: 11 (42%) Environment factors such as unfavourable policies and lack of infrastructure: 5 (19%)
Quality 8 (31%), including – food safety – nutrition – good taste – halal	Limited access to, infrastructure, capital and markets Overdependence on rainfall patterns and other geographical/agronomic constraints	Diversification of the products or services of the business Generation of youth employment	Biosafety: 4 (15%) – rodents – animal diseases
Skills, including – production – processing – marketing	Limited production, processing, storage or logistical capacity		Other environmental factors – climate change – bush-fires – sea erosion
Location			Cultural norms inhibiting opportunities for female employees



► 5. Conclusions and recommendations

Conclusions

This exploratory study was undertaken as a first step towards generating evidence to support the argument that family, women and youth-led agribusinesses have a key role to play in the rural transformation under way in Ghana. An analytical framework was applied in the design of the survey to ensure that information was collected to inform the five analytical “lenses” of **labour, enterprise, value chain, livelihood** and **gender**, as well as a focus on **investment** linked to the CFS RAI principles, and an analysis of the **enabling environment** for SMEs in the agricultural sector. A summary of the general findings and key conclusions are presented below.

Classification of WYEs. From the 26 enterprises selected, 54 percent (14 businesses) were female-led enterprises with 36 percent of these (i.e. 5/14) classified as both youth and woman-led, 31 percent (8) were male youth-led businesses with owners under the age of 35, and 15 percent (4) were adult male-led businesses but were selected on the basis that they had started out as youth-led businesses or were also classified as family businesses. A total of 54 percent (14) were also classified as family businesses, thus confirming the close interconnection between family businesses and youth and female-led SMEs. The longevity of the business operations varied: 27 percent (7 businesses) had been in operation for more than ten years (i.e. established); 38 percent (10) for between 4 and 9 years (i.e. growth phase); and 35 percent (9) had been in operation for three years or less (i.e. start-up phase). Sixty-two percent (16) of the WYEs were officially registered businesses as either limited liability companies (4), SMEs (1) or sole proprietorship businesses (11).

Human resources. For the majority of the business owners, running the business was their full-time job; however, eight of the owners were only managing their business part-time while maintaining careers in other fields. The qualifications of the owners were higher than expected. Sixty-two percent (16 owners) had Bachelor level university degrees or higher in a range of disciplines, 23 percent (6) of the enterprises had only completed junior high school and these were predominantly from rural areas. The majority of staff hired in full-time positions had only junior high school or senior high school level qualifications and on-the-job training was considered a necessary prerequisite to overcome the skills gap. Retention of staff/staff turnover was an issue for 50 percent of the WYEs, because of competition for farm labour within the community, or the draw of better paid industries. The lack of commitment by youth workers in general, was raised as a major challenge.

Motivation to begin the business. Motivations for starting up a WYE were found to be diverse. For about a third of the interviewees (9 businesses), the motivation came from traditional sources (i.e. inherited family business, parents were farmers, grew up in rural communities etc.). For the remaining enterprises, more modern perspectives prevailed such as: recognising clear market opportunities for new products; social motivations to solve youth unemployment through agribusiness; capitalizing on educational qualifications and research findings; and a need to generate additional income for the family or create self-employment opportunities. Several of the business owners also came from diverse professional (non-agricultural) backgrounds. This is a positive indicator that the agribusiness sector in Ghana is currently viewed as offering strong market opportunities, which in turn are motivating entrepreneurs to invest despite their limited experience in the sector.

Under the **labour** “lens” the study investigated the extent to which the enterprises can create and sustain decent employment opportunities. Key conclusions were as follows:

- The generation of self-employment for the owners as well as employment opportunities for both family and non-family members highlights the potential of SMEs operating in the midstream of food value chains to combat unemployment. A total of 98 full-time jobs were created by the WYEs interviewed, with 21 of these classified as self-employment for the owners and 71 new full-time jobs generated for family and non-family members. An additional 47 part-time or permanent casual jobs were also reported.
- Salary levels were relatively low and one can doubt if all jobs can be considered “decent” or providing a “living wage”. Many owners are aware of this but they are currently constrained by very small net-profits. The average monthly salary reported for full-time workers was GHS 400–500.

Under the **enterprise** lens, the **main income-generating activity** of the business was examined in detail, including the products offered and production processes. An assessment was made on the level of **access to resources** needed to run the business, including **land, education and training, ICT hardware and software, mechanization**, and implementation of **quality assurance systems**. The **financial analysis** section assessed the profitability of the business over the past financial year (2018), as an indicator of the current viability and future sustainability of the business. Key conclusions were as follows:

- **Subsectors and products.** The participating WYEs operated in diverse value chains and activities, underlining four main subsectors: horticulture (3); food crops (4); fish (8); and livestock and poultry (11). Final products included spices, fruit juices and vegetables; cassava and cassava powder, maize, brown rice and rice flour products, oil palm and cocoa; fresh and smoked fish, processed fish, including fish sausages, fish patties and grilled fish; goat and processed goat meat, dressed chickens, live chickens, chicks and eggs, dressed and grilled rabbit, pigs and pork meat.
- **Value addition.** The majority of the enterprises were involved in processing (77 percent or 20 WYEs) and many were also directly engaged in on-farm production activities (60 percent (12 out of the 20)). Those engaged solely in wholesale or processing had direct links to local farmers, which again confirms the importance of SMEs in the midstream of the value chain and the strong backward linkages to production i.e. supporting WYEs’ results for both farmers and SMEs. This is consistent with the findings from AGRA (2019).
- **Access to land.** Twenty-three of the companies have access to land. The remaining three are not involved in production and none of them reported problems accessing land. Only three of the companies reported concrete problems related to land access or tenure security indicating that securing access to land was not considered a major impediment for the viability or sustainability of the business for the majority.
- **Training and education.** During the start-up phase, most of the enterprises received some form of technical training in production or processing, in addition to basic record keeping/financial management and/or development of a business plan. Eighty-eight percent (23) of the enterprises reported that they had had some form of financial management/ record keeping training. The most commonly reported training need at the time was for traditional and digital marketing. Many enterprises felt that they did not have sufficient knowledge on how to effectively market their products more broadly than to local customers or wholesale markets where they felt they were rather price-takers.
- **ICT access and use.** Mobile phones were reported as the main business-related communication device for 100 percent of the companies. Laptops were the second most common device used

by the business, with 58 percent of the enterprises (15) reporting that they owned and used these mostly for record-keeping. The universal adoption of mobile phones regardless of gender is a positive sign for Ghana given that women in Africa are 14 percent less likely to own a mobile phone than men (CTA, 2019a). The most commonly reported ICT Apps used to market products were Facebook, WhatsApp, Instagram, Twitter, Yahoo, YouTube and email. This explains the urgent request made by many enterprises for digital marketing training. Only three (12 percent) of the enterprises already had their own company website, used mainly for marketing purposes, and only two enterprises (8 percent) had ever used the services of an ICT provider (i.e. the e-commerce platform Hartel) to set up a virtual shop and to notify customers via SMS about their products. This finding suggests that the market for ICT services is insufficiently developed to match the needs of WYEs and poorly targeted to date.

- **Mechanization** of business operations remains low with relatively basic equipment used. One of the major inhibitors to WYEs taking operations to the next level is the inability to purchase the (processing) machinery required to do so. Many of the enterprises knew exactly what hardware they needed to grow their businesses, but simply could not afford to purchase it.
- **Quality assurance.** A varying degree of awareness of basic food safety was displayed by many of the enterprises, but only a few of them are officially certified. Six of the enterprises (23 percent) had some type of certification and another six (23 percent) aimed at, or were in the process of being certified. Sixteen of the enterprises (62 percent) communicated no quality requirements at all to their suppliers, thus, the market for end products has not yet reached the level of sophistication required to demand high levels of traceability and quality assurance from raw material suppliers. Similarly, only four customers made any specific requests to WYEs regarding the quality of the products purchased. This indicates that official certification may not be a prerequisite to operate in some segments of the value chain or when targeting local markets at present. However, all enterprises involved in agriculture and food value chains need to consider food safety and quality, particularly to remain competitive in modernising markets. Capacity development in this area is needed.
- **Financial performance.** While the majority of business owners had received training in financial management, many of them could not provide the details needed to complete the marginal analysis for the previous financial year. There were a number of gaps in the variable costs reported and many businesses stated that they had no fixed costs (which seems highly unlikely) or did not know what these were. Financial management/book-keeping and basic accounting skills are clearly an area that needs further reinforcement for all WYEs. Record-keeping also needs to be improved, as many enterprises could not accurately report on the quantities of raw materials purchased or units of product sold.
- **Net profit.** 19 WYEs (73 percent) were generating a net profit which ranged from the highest earner with a net income of GHS 517 112 to lowest earner with a net income of GHS 740. In total, five (19 percent) WYEs were earning more than GHS 100 000 net income, one WYE was earning between GHS 50 000 and GHS 100 000; five (19 percent) were earning between GHS 5 000 and GHS 20 000; and eight WYEs (31 percent) were earning less than GHS 5 000. The five highest earning WYEs were all engaged in some form of value addition (processing) or the production and marketing of cash crops (oil palm and cocoa), and four of the five enterprises had been in business for 5 to 30 years. Six of the WYEs earning less than GHS 5 000 were engaged in primary production with no value addition activities, indicating that higher income is more likely when WYEs engage in midstream value chain activities.
- **Living income.** Based on the above findings, if we compare the net income earned by the WYEs with both the national average per capita income estimated at GHS 11 742 (USD 2 200)

(freedomfromhunger.org), and a recent estimate of the living income for two adults with three children in Ghana, GHS 17 568 per annum (GIZ, 2018), only eight of the WYEs (31 percent) were found to be earning more than the average annual per capita income, and only five (19 percent) are earning what could be considered a living wage for a family. This finding is consistent with the literature on youth entrepreneurship that found that many youth enterprises remain engaged in subsistence activities that struggle to return a decent living wage for the owners (OECD, 2017).

- **Operating at a loss.** Based on the gross margin analysis for 2018, six WYEs (23 percent) were found to be operating at a loss that ranged from GHS 1 168 176 to GHS 4 350. Five of the six enterprises operating at a loss are engaged in fish and poultry production. To some extent these losses can be explained by high feed costs and other inputs (e.g. fingerlings). During the interviews, many of the fish and poultry production enterprises made requests for support to learn how to produce their own feed, and the findings from the financial analysis section clearly indicate that feed cost is a critical issue affecting the survival of these businesses.
- **Overall,** the findings provide a rough snapshot of the current financial health of the WYEs and unfortunately, the picture is not particularly bright, with over 50 percent of the enterprises either returning low net profit to owners (i.e. 31 percent earning less than GHS 5 000) or operating at a loss (23 percent) based on 2018 figures. Even for those enterprises making very small profits or operating at a loss, many of the business owners thought that the enterprises could still be considered “viable” based on the potential size of the market to absorb their products. This clearly indicates that greater financial management skill is needed in both analysing and managing the accounts for the business in order to identify ways to increase profitability by reducing costs or increasing sales/diversifying products rather than relying on general market trends as an indicator of viability.

Investment findings. Key conclusions were as follows:

- **Start-up capital.** Consistent with findings in the literature, almost all of the enterprises used personal savings as initial start-up capital, with relatively few taking loans. Ninety-two percent (24) of the enterprises interviewed stated that the initial start-up capital came from personal savings, with commonly reported levels of investment ranging from GHS 40 000 to GHS 60 000 in the first two-years. Only two enterprises reported the main source of start-up capital as coming from grants or loans.
- **Start-up investments.** Start-up capital was used to establish or expand the raw material production activities for the business or externally source raw materials, and purchase machinery and equipment required for value addition.
- **Access to finance during start-up and growth phase: loans.** Apart from the interest-free three-year loans from NIEP made available to four of the enterprises, only three enterprises had taken out any commercial loans during the first-two years of the business. When asked about how easy it was to access loans for agribusinesses, 70 percent (18) of the businesses reported that it was very difficult. The most commonly reported challenges were collateral requirements, followed by high interest rates (20 percent and more per annum). This is consistent with the broader findings on access to finance for SMEs in Ghana (ITC, 2016).
- **Private equity.** Again, consistent with the literature, only one enterprise made any reference to or showed an interest in seeking private equity investment.
- **Working capital and savings.** All of the enterprises used income generated from sales of products as working capital. Hundred percent also reported that they annually reinvested a proportion of net profits back into the business. Fifty-eight percent (15) claimed to reinvest 100 percent of any profits into the business with no salary taken for the owners, while others saved between 10 percent and 50 percent of net profit and reinvested the rest into the business.

Enabling Environment: Key conclusions were as follows:

- **Infrastructure.** Access. Almost all WYEs had access to electricity (88 percent) and water (70 percent). Sixty-two percent had access to good roads and 38 percent said their internet and telecommunications services were adequate. Seven WYEs had access to a retail markets and four already sold to wholesale markets.
- **Limitations.** Access to good roads was the most common complaint with eight WYEs (31 percent) stating that this was a major issue for their business that had a negative impact on business growth because of higher costs associated with transportation and loss of customers due to access issues. Two WYEs had no access to electricity at all and four had no access to running water. Lack of access to both of these critical inputs had a negative impact on the growth of the business in terms of value addition options (processing) and increased production costs (purchase of water). Three firms complained of extremely poor internet and telecommunication connections that were limiting customer relationship development, marketing and sales. Access to wholesale markets to grow the business was considered necessary by three WYEs, and storage (cold storage and silos) was raised by five WYEs as another factor significantly limiting the growth of the business.
- **Enabling policy environment.** Knowledge of government policies was found to be low, and the majority of WYEs did not believe that there were any policies that specifically targeted them. This is consistent with the “hidden middle” argument that despite the significant economic and social role that SMEs play in the midstream of the food value chain, they are not recognized in the policy discussions (AGRA, 2019). Five WYEs had no knowledge of any policies; another five were aware that general agricultural/fisheries policies existed but could not name any or provide any details; and 15 WYEs (58 percent) reported that no policies specifically targeting women and youth existed.
- The most commonly reported national policies that WYEs were aware of were:
 - » The Planting for Food and Jobs and the Planting for Export and Rural Development (PERD) programme mentioned by six WYEs with three already benefitting from subsidized seeds, fertilizer and agricultural extension training;
 - » The One District One Factory (1D1F) policy mentioned by three WYEs with one WYE earmarked for inclusion in the programme.
- **Dialogue platforms.** WYEs were asked if they were aware of or had participated in any policy dialogue platforms established to provide feedback to the government on issues affecting WYEs. Very few WYEs had any experience with this type of platform and the six that did felt that these platforms were highly politicised and rarely translated into any pragmatic activities that support business growth.
- **Negative policies.** WYEs identified a number of policy issues that they believed had a negative impact on their businesses. These included inadequate support to access affordable credit; negative impacts on consumer spending as a result of the financial sector clean-up policy; unfair tax policies (with the exception of the fisheries sector where no tax was charged); high fuel costs; inadequate support to farmers to encourage adoption of good agricultural practices; costly bureaucracy related to annual fees for business registration and land registration; poorly targeted and politicised policies that do not reach those enterprises who need them most.
- **Overall,** WYEs felt that the government was not doing enough to support the development of their businesses and that addressing some of the earlier mentioned infrastructure limitations and negative policy issues would be a step in the right direction. These findings are consistent with the recommendations in the AGRA (2019) report which suggests that unless enabling environment

issues are addressed, governments will not realise the full economic and social benefits of stimulating growth of agri-SMEs.

The **value chain** analysis examined the position of the WYEs in the value chain *vis-à-vis* linkages to upstream suppliers and downstream customers and access to necessary support services. Key conclusions were as follows:

- **Suppliers.** Seven of the enterprises (27 percent) sourced raw materials directly from farmers or farmer groups/associations. This close relationship with community farmers as suppliers of raw materials again highlights the interconnected nature of SMEs operating in the midstream of the value chain and farmers producing raw materials (AGRA, 2019). However, a vibrant private sector for inputs also exists in Ghana, with 65 percent of WYEs (17) sourcing some raw material from commercial suppliers (which include green houses for vegetables, commercial farms for fruits, fishing boat operators, private hatcheries and feed companies for poultry and fish feed). Fish feed can also be purchased through a public supplier (the Fisheries Commission District Office) although some issues with supply were raised. Nine of the enterprises (35 percent) produce some of their own raw materials and only source outside if their own supplies are insufficient.
- Offering credit was considered as one of the key attributes that would make a good supplier even better. Six enterprises (23 percent) had an agreement for some form of credit/part-payment option with their suppliers. No enterprises had had any experience sourcing raw materials through online platforms, and only two WYEs were aware that this was possible but felt that the current scale of the business did not warrant sourcing in this manner. Again, this supports the findings that current adoption rates of ICT services are low, and they may not be tailored to suit the business needs of SMEs/WYEs.
- **Customers.** The WYEs sell their products to a range of customers, including individuals through direct-to-consumer sales (either at farm gate or retail activities such as food and drink stands). They also sell to corporate clients, wholesalers, local market agents (market women), food vendors, hotels, restaurants and chop bars. Only two WYEs had had experience supplying to a supermarket and shopping malls.
- When asked if their products could adequately meet the expectations of their clients, 69 percent (18) of the enterprises answered that they could. Three reported that they could meet quality but not the quantity demanded by their customers. Twenty-one of the WYEs (81 percent) had long-term customers of two years or more, which is a good indicator of the market demand for their products and their ability to meet this demand.
- In terms of a customer development strategy, only 12 WYEs (46 percent) were able to verbalise their approach. Common approaches include participating in trade fairs, focusing on increasing sales to existing customers, and introducing new product lines and packaging. 42 percent (11) of the WYEs reported using social media to help market products, but no other ICT solutions were mentioned.
- **Support services.** Seven of the WYEs (27 percent) reported no use of any support services, except for training that was provided to them during the start-up phase. Nineteen WYEs used some form of support service to run their business. The most common service used was transport, with 11 WYEs (42 percent) engaging services of public bus, car, truck, motorbike and tricycle drivers to both deliver finished products and source raw materials. This was followed by finance (5 WYEs); waste collection services for the waste generated by cold rooms (2 WYEs); extension services provided by the District Extension Office (2 WYEs); packaging material (1 WYE); outsourcing of primary processing of raw materials to a farmers' association (1 WYE); and carpentry services (1 WYE).
- A number of gaps exist in service provision to agro-enterprises in Ghana. No enterprises reported to have engaged with any ICT service providers and there was also a noticeable lack of quality

assurance inspection service providers, consistent with the findings stated earlier on low adoption of quality systems.

- **Associations.** Thirteen of the enterprises (50 percent) were members of some form of association. The recently formed Fish Processors and Traders Association was very popular amongst WYEs operating in the fishery/aquaculture sector, and other WYEs were members of a range of commodity associations, including rice planters association, oil palm growers association, cocoa growers association, poultry growers association and the rabbits association of Ghana. Non-commodity associations that were also popular were the African Women in Agribusiness online platform and the Young Professionals in Agricultural Development network. Despite recommendations made during the FAO RAI workshop in August 2019, none of the WYEs were members of any village savings and loan associations (VSLA) and did not see these as suitable for agribusinesses as their capital requirements differ and their activities are not homogenous. WYEs prefer to be involved in commodity-based associations with members who share common production and marketing interests. In terms of services provided, several of the WYEs wished their associations would also help facilitate access to (affordable) finance.

For the **livelihood** lens the study explored how profit from the business feeds back into supporting families (i.e. dependents) and sought to identify risk elements that can affect the **sustainability** of the business. A **SWOT analysis** of each business was also conducted along with a **competitor analysis**. Key conclusions were as follows:

- **Dependents.** A high number of dependents were supported from the income generated by the enterprises, indicating the clear positive social externalities of investing in WYEs. An estimated 108 dependents are supported by the owners of the 26 businesses.

Sustainability

- **Business plan.** Around half of the enterprises had a business plan. The main constraints to achieving their plan included lack of capital, technical and marketing know-how, insufficient raw material supply, lack of government support/unfavourable policies, climate change and disease outbreaks, and poor infrastructure.
- **Succession plan.** Many of the companies had succession plans, but 15 percent of the enterprises (4) had no succession plan in place and were unsure who would be able to manage the business in the absence of the owner on a short-term or more permanent basis. Sixty-two percent of the enterprises (16) identified family members who they hoped would take over the business. This is not surprising, given that 54 percent of the enterprises (14) interviewed were classified as family businesses. Many of these businesses had been proactive in getting children and partners already involved in the business. Several of the non-family businesses also had strategies to ensure that partners or employees would step up and take over operations if needed. This is a positive sign that may help long-term sustainability of these enterprises.
- **Risk factors leading to failure.** Some of the most commonly perceived reasons for the failure of WYEs were: desire for rapid growth and “quick money” during the start-up stage; lack of capital to sustain growth of the business; poor record-keeping and financial management and insufficient reinvestment; a lack of commitment and passion; for female-led enterprises, time constraints, family commitments and lack of support from husbands; high raw-material costs; lack of market access; and, lack of government support.
- **SWOT analysis.** The most important **strengths** as perceived by the enterprises can be categorised as (1) intangible assets such as social networks and relationships with consumers and suppliers; (2) technical skills, such as knowledge of farming and processing; and (3) quality of the products.

- The most important **weaknesses** can be categorised as (1) lack of quality assurance; (2) lack of value-addition; (3) limited access to capital, infrastructure and markets; (4) constraints in meeting consumer demand; and (5) “other”, including weak bargaining position and low market share.
- The most important **opportunities** were (1) market opportunities; (2) ability to meet demand (related to the first); and (3) ability to diversify.
- The biggest **threats** were related to (1) competition, (2) enabling environment factors and (3) biosafety and other environmental factors.
- Many of the enterprises perceive a lot of competition in their value chain. Some of companies seem to have good strategies for defending their share of the market by offering quality products, finding a niche or diversifying into other value chains or segments of their value chain. Many are, however, without clear strategies.

Finally, the **gender** lens aims to understand any differences in terms of access to resources, services, decision-making and political voice between men, women and youth-run enterprises, as well as differences between family and non-family businesses. Key conclusions were as follows:

- Only one firm raised a gender-specific issue about managing and retaining staff: Oak Farms was attempting to train women to operate heavy farm machinery, yet the owner felt that cultural norms made it difficult for them to stay in these roles as they were perceived as “men’s jobs”.
- Eighty-eight percent of the enterprises felt that it was equally difficult for women and youth-led agribusinesses to access loans as it is for any other SMEs operating in the agricultural sector; yet 11 percent (three) felt that there were additional challenges for women and youth-led businesses. One WYE reported that women are often seen as “weak” by the banks and considered less able to repay loans, and two others felt that youth enterprises could also be disadvantaged because of perceptions of inexperience in running businesses.
- Only three enterprises reported using no mechanization at all in on-farm and processing activities because of the cost of acquiring such equipment. While this is not a representative sample, all these three businesses were women-led enterprises, which may suggest that women have greater difficulties acquiring or hiring necessary machinery.
- Fifty percent (13) of the enterprises felt that access to education and training was equal regardless of gender and age. Twenty-seven percent (7) did not comment on this issue, and 23 percent (6) felt that access was not equal, with adult males receiving preferential access to training because of their connections, longer standing in the community, additional resources to pay for training, and greater knowledge on where to look for training opportunities.
- For woman-led businesses, family commitments, time constraints, extra household work and a lack of support by husbands were cited as key reasons for early failure. Also, women-led businesses often support many dependents, leaving little over for reinvestment, i.e. double burden of caring for children and at the same time trying to grow the business.
- Some differences between family and non-family businesses were identified when discussing succession plans. While family businesses mostly identified family members as their successors, several non-family businesses had developed succession strategies that do not rely heavily on the ongoing involvement of the business founder or specific individuals, but rather are looking at new models of operation to secure the long-term sustainability of the enterprise including private equity investors. This is perhaps one advantage that non-family enterprises have over family enterprises: the ability to recognise changing circumstances in the future and the freedom to adapt accordingly without the constraints of family ties.

Recommendations

Based on the extensive findings from the surveys, the following recommendations can be made:

- **Access to affordable capital and mechanization.** Without a doubt, access to capital was the most pressing issue raised by all WYEs throughout almost all sections of the survey. Innovative solutions supported by government are required to address unrealistic collateral requirements, high interest rates and a lack of tailoring of financial products to agribusiness activities. Lack of capital is greatly restricting the further growth and income-generating potential of the businesses and this is having impacts on all areas of their operations, e.g. human resources (low salaries paid to workers), quality assurance (lack of capital to invest in QA systems), but it is a particular issue when it comes to mechanization. Mechanization of business operations (both production and processing) remains low with relatively basic equipment used. Many of the enterprises wanted to expand/upgrade value-addition activities by acquiring processing machinery, but access to affordable asset loans does not appear to exist. Options must be investigated to overcome this issue. If the Government of Ghana intends to truly capitalize on the growth potential of WYEs operating in the “hidden middle”, then something must be done to address the issue of access to capital to support agro-industrial mechanization in the midstream of the food value chain. Preferential policies to support women-led agribusiness enterprises to access mechanization may also be needed, as anecdotal evidence suggests that it is even more difficult for women to acquire or hire necessary machinery than for male youth-led enterprises because of cultural norms.
- **Training and education –** ICT use, marketing, quality assurance and financial management. These are the four critical areas where upskilling is required by all WYEs.
- **ICT.** Despite high use of mobile phone technology and widespread use of social media Apps for marketing products, adoption rates of other ICT solutions are low (e.g. platforms/Apps that could be used for accessing agricultural knowledge and advice, machinery hire services, weather forecasts, market and price information). Training and education are needed to increase awareness of the availability of ICT services and use of ICT solutions to support the growth of women-and youth led agribusinesses. Dialogue platforms between agri-WYEs and ICT providers should also be encouraged so that services can be developed that are better tailored to meet their diverse needs. WYEs are open to the adoption of ICT solutions but are lacking the skills and knowledge of how this can be achieved. They specifically requested support to develop websites, create Apps that would allow them to communicate with their suppliers (farmers) and customers, set up e-commerce platforms for the trading of livestock and use drones to monitor on-farm input use.
- **Marketing.** The majority of WYEs lacked a marketing strategy. Given the lack of a strategy to defend their share of the market among many companies, there is a need for advice and capacity development. Traditional marketing, and digital marketing training in particular, could help the businesses to target and reach specific customer groups. However, beyond marketing, enterprises involved in value addition appeared to be in a better position to set prices than those who were only involved in production. Therefore, those WYE engaged solely in production may need support in diversifying into midstream segments of the value chain.
- **Quality assurance.** While official certification may not be a prerequisite at this stage to operate in some segments of the value chain or when targeting local markets, all enterprises involved in agriculture and food value chains need to consider food safety and quality to remain competitive. Capacity development in this area is needed to train all WYEs in basic food safety and hazard management processes (e.g. HACCP) and related requirements under government certification schemes. Adoption of quality standards in the future will facilitate the access of safe and nutritious

food for domestic consumers as well as increase the competitiveness of Ghanaian WYEs to supply to customers in higher value markets.

- **Financial management.** Over 50 percent of the enterprises were either returning low net profit to owners (with 31 percent earning less than GHS 5 000) or operating at a loss (23 percent) based on 2018 figures. Many struggled to identify their variable and fixed costs and for several WYEs it was difficult for them to estimate their total production outputs and raw material inputs per year. This clearly indicates that better financial management skills and improved record keeping is needed in order to keep track of the growth and development of the business and identify ways to increase profitability by reducing costs or increasing sales/diversifying products, rather than relying on general market trends as an indicator of the viability of the business. One such option would be to undertake financial business appraisals of the enterprises in a group setting with simultaneous training on advanced record-keeping and basic financial analysis tools to improve levels of financial literacy.
- **Upgrading of public infrastructure.** Consistent with the recommendations in AGRA (2019), findings from the study indicate that urgent investments must be made to ensure all WYEs in rural, peri-urban and urban areas all have a minimum access to electricity, running water, good road networks and telecommunications. These are the fundamental needs for running an agribusiness and without them production costs increase making it very difficult for the enterprises to generate a profit and remain viable. Access to wholesale markets are also needed to grow the business as well as storage facilities (cold storage and silos).
- **Designing policies to target the “hidden middle” and addressing the impact of existing negative policies.** Most of the enterprises were involved in processing (77 percent or 20 WYEs) and many were also directly engaged in on-farm production activities (60 percent, or 12 out of the 20). Those engaged solely in wholesaling or processing had direct links to local farmers, which again confirms the importance of SMEs in the midstream of the value chain and the strong backward linkages to production. Therefore, any policies targeting WYEs must also consider the importance of this dyadic relationship and aim to maximise the growth opportunities for both sets of actors either as individuals or as joint enterprises.
- Dialogue platforms established to provide feedback to the government on issues affecting WYEs were considered to be ineffectual by several WYEs. The major complaint raised was that they never result in actions. While these vehicles can provide a valuable forum for enterprises to share their constraints and grievances with government, and for government to use the issues raised as inputs into the design of targeted policies, the purpose of these initiatives must be clear from the outset. In order to build trust with WYEs in the policy-making and implementation process, at least some concrete actions must result from these initiatives.
- The perception among the WYEs that there was a lack of enabling environment and a number of policies negatively affecting small agro-enterprises should be addressed. Policies to increase access to affordable credit may be put in place and adoption of good agricultural practices can be supported by government interventions. Various bureaucratic hurdles and taxes for SMEs may also be scrutinized and possibly lowered, such as fees for business and land registration.
- **Vertical integration of feed production (aquaculture and poultry enterprises).** Given the high cost of poultry and fish feed and low profit margin of many companies operating in the aquaculture and poultry subsector, coordinated efforts must be made to lower feed costs. During the interviews, many of the fish production and poultry enterprises made requests for support to learn how to produce their own feed, and the findings from the financial analysis section clearly indicate that feed cost is a critical issue affecting the survival of these businesses. Technical support and financial

assistance should be provided where possible to assist enterprises to diversify into feed production activities.

→ **Future-proofing WYEs against the negative impacts of climate change and biosecurity risks.**

When undertaking the SWOT analysis, several of the WYEs identified the impacts of climate change and biosecurity risks as key threats to their business that they believed would gain in significance in coming years. Specific policies should be put in place to assist enterprises to design and implement climate proofing strategies and training should be provided to all poultry and livestock WYEs in animal biosecurity measures to prevent disease outbreaks.

- **Increased efforts to understand the differences in challenges facing adult women, female and male youth-led enterprises, and family versus non-family enterprises.** The findings from this survey did not uncover many clear differences in terms of gender-disaggregated access to resources, services, decision-making and political voice between men, women and youth-run enterprises, as well as differences between family and non-family businesses. However, the sample size for the survey was small and is by no means representative of all WYEs participating in the agricultural sector. Increased effort should be made to further research in this area so that policies and strategies can be developed to address any differences that may emerge in an attempt to create a level the playing field that supports the growth of all agro-enterprises regardless of gender, age and family status.



▶▶ 6. Limitations of the study

The findings from this survey represent a pilot, exploratory study of 26 WYEs in Ghana. It is not intended to be representative of all WYEs currently operating in the agriculture sector nor is it intended to give conclusive recommendations that will apply to all WYEs operating across a range of value chains and geographic areas. The survey guide developed was lengthy and some participants found it difficult to commit the full amount of time needed to provide in-depth responses (i.e. two to three hours per survey). For this reason, Section 8 on financial analysis had to be scaled back as it was not possible to elicit detailed financial information from participants, given the time limitations and the level of detail required. Therefore, the findings on financial sustainability would need to be strengthened in further rounds of work in order to be able to draw more rigorous conclusions on the viability of the businesses over the longer term.

▶▶ 7. Next steps

Findings from this report should be shared more broadly with interested stakeholders. This will be achieved by:

- Organizing a meeting with the agricultural sector umbrella organization (that includes farming, livestock, fisheries and forestry producers organizations) to present the findings and discuss opportunities for collaboration in implementing recommendations of the study.
- Meeting with those leading D4Ag projects in Ghana to present the findings and discuss opportunities for collaboration in implementing the recommendations of the study.
- Elaborating a concept note for setting priorities based on collaboration opportunities, including a budgeted plan and logical framework.
- Undertaking a more focused study on family businesses in the fisheries and livestock sectors, cassava processing value chain and fruit value chain. Extend the concept note to a regional intervention with similar research to be undertaken in Kenya, Malawi and Zambia and in a number of francophone countries with a vibrant growth of family businesses, such as in Cameroun and Gabon (under the FAO Subregional Office for Central Africa [SFC]) and in countries under the FAO Subregional Office for West Africa (SFW).
- Convening a meeting with participants, including relevant government departments, donors and NGOs and representatives of SME networks/online dialogue platforms, to share the findings and discuss the concept note and the results of the meetings with the Farm and Forest Facility (FFF) and operations umbrella organizations. The relevance of this information to Ghana's rural transformation plans should also be discussed.
- Developing a PowerPoint presentation that highlights the key findings and recommendations from the study.

To capitalize on the findings from this study, the following information dissemination products could be developed and published online:

- Ten to fifteen-page brief, highlighting the key findings and conclusions from the study;
- One to two-page policy brief, explaining what WYEs are, why they are important to rural transformation in Ghana/Africa, and what government can do to support them;
- A "newsflash" on RAF website, sharing the purpose of this work and link to the the earlier mentioned documents/full report. The way forward for RAF in terms of using these findings and planning for next biennium will include a focus on FFF, D4Ag, and service support to family business. For example, these findings may help to identify funding sources/partnerships with the government and donor agencies, where FAO could provide technical assistance to WYEs in areas of quality assurance, financial literacy/business appraisal training, etc.



▶▶ 8. References

- African Development Bank (AfDB).** 2019. *Africa Investment Forum: Family businesses - an underestimated economic driving force* [online]. [Cited January 2020]. . <https://www.afdb.org/en/news-and-events/press-releases/africa-investment-forum-family-businesses-underestimated-economic-driving-force-32621>
- Alibhai, S., Bell, S. & Conner, G.** 2017. *What's Happening in the Missing Middle?: Lessons from Financing SMEs*. World Bank, Washington D.C. (also available at <https://openknowledge.worldbank.org/handle/10986/26324>).
- Alliance for a Green Revolution in Africa (AGRA).** 2019. *Africa Agriculture Status Report: The Hidden Middle: A Quiet Revolution in the Private Sector Driving Agricultural Transformation* (Issue 7). Nairobi. (also available at <https://agra.org/wp-content/uploads/2019/09/AASR2019-The-Hidden-Middleweb.pdf>).
- Badiane, O., Odjo, S. & Collins, J., eds.** 2018. *Africa Agriculture Trade Monitor Report 2018*. Washington, DC. International Food Policy Research Institute (IFPRI). (also available at <http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/132819>).
- Banson, K.E., Nguyen, N.C., Sun, D., Asare, D.K., Kodia, S.S, Afful, I. & Leigh, J.** 2018. Strategic Management for Systems Archetypes in the Piggery Industry of Ghana—A Systems Thinking Perspective. *Systems*, 2018, 6(35). <https://doi.org/10.3390/systems6040035>.
- Bishop, C. & Sato, R.** 2017. *Women's economic empowerment through inclusive agribusiness. Aspirational issues and priorities for collaboration* [online]. [Cited January 2020]. <https://www.inclusivebusiness.net/node/4624>.
- Braidford, P., Houston, M., Allinson, G. & Stone, I.** 2014. *Research into family businesses*. BIS Research Paper No. 172. Department for Business Innovation and Skills. London. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/313957/bis-14-699-research-into-family-businesses-bis-research-paper-172.pdf.
- Brand, N. & Galdava, E.** 2018. *Engaging youth in agriculture through information and communication technologies*. USAID Feed the Future Initiative. <https://www.usaid.gov/sites/default/files/documents/15396/Feed-the-Future-CaseStudy-Youth-Ag-ICT.pdf>.
- Carranza, E., Chandra, D. & Inessa L.,** 2018. FEMALE ENTREPRENEURS: HOW AND WHY ARE THEY DIFFERENT? © 2018 The World Bank; Jobs Working Paper, Issue No. 20
- CTA (Technical Centre for Agricultural and Rural Cooperation).** 2018. *Focusing on women and youth to transform agriculture*. [Cited January 2020]. <https://www.scidev.net/sub-saharan-africa/agriculture/opinion/women-youth-transform-agriculture.html>.
- CTA.** 2019. *The digitalization of African Agriculture Report*. [Cited January 2020]. Wageningen, Netherlands. <https://www.cta.int/en/digitalisation-agriculture-africa>.
- CTA.** 2019. *ICT Update. Issue 92, September 2019*. Wageningen, Netherlands. <https://cgspace.cgiar.org/bitstream/handle/10568/103804/ICT092E.pdf>.
- Dekker, M. & Hollander, S.** 2017. *Boosting youth employment in Africa: what works and why?* [Cited January 2020]. <https://includeplatform.net/wp-content/uploads/2019/08/FullConferenceReport.pdf>.
- Donkor, J., Donkor, G.N.A. & Kankam-Kwarteng, C.** 2017. Strategic planning and family business performance in Ghana: moderating role of IT capability. *Academy of Entrepreneurship Journal*, 23(2) [online]. [Cited January 2020] <https://www.abacademies.org/articles/Strategic-Planning-And-Family-Business-Performance-in-Ghana-1528-2686-23-2-115.pdf>.
- FAO.** 2018. *Empowering youth to engage in responsible investment in agriculture and food systems. Guidance for organizers and facilitators to support the utilization of the rapid capacity assessment tool* [online]. [Cited January 2020]. <http://www.fao.org/in-action/responsible-agricultural-investments/publications/detail/en/c/1161796/>.
- FAO.** 2019. *Funds for investing in agriculture by women and youth: Organizations that may provide funding for women and youth-led agribusinesses in Ghana*. Rome.
- FAO.** 2019. *Information and communication technology services in agriculture for women and youth: Examples from Ghana*. Rome.
- FAO.** 2020. FAO in Ghana. In: *Food and Agriculture Organization of the United Nations* [online]. Rome. [Cited January 2020]. <http://www.fao.org/ghana/fao-in-ghana/ghana-at-a-glance/en/>.

- FAO.** 2020. *Final report of the initiative on involving women and youth in responsible investment in agriculture and food systems in Ghana*. Rome. (also available at <http://www.fao.org/3/ca9414en/CA9414EN.pdf>).
- FAO.** 2020. *Accessing land in Ghana for agricultural investment: Advice for women and youth*. Rome. (also available at <http://www.fao.org/3/ca7939en/CA7939EN.pdf>).
- Filmer, D. & Fox, L.** 2014. *Youth Employment in Sub-Saharan Africa*. Washington, DC: World Bank.
- ILO, UNICEF & World Bank.** 2016. *Child labour and the youth decent work deficit in Ghana: inter-agency country report*. Understanding Children's Work (UCW) Programme Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/564391467991932229/Child-labour-and-the-youth-decent-work-deficit-in-Ghana-inter-agency-country-report>.
- International Food Policy Research Institute (IFPRI).** 2018. *A blue revolution in sub-Saharan Africa? Evidence from Ghana's tilapia value chain*. Strategy support program. Working Paper 49, June 2018. Washington, DC. (also available at <http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/132732/filename/132943.pdf>).
- International Labour Organization (ILO).** 2018. Highlights of new study assessing the impact of increasing domestic processing of cocoa in Ghana on employment and job creation presented during high-level meeting [online]. [Cited January 2020]. https://www.ilo.org/africa/countries-covered/ghana/strengthen/WCMS_654161/lang-en/index.htm.
- International Trade Centre.** 2016. *SME Competitiveness in Ghana: Alliances for Action*. Geneva. (also available at http://www.intracen.org/uploadedFiles/intracenorg/Content/Publications/SME%20competitiveness%20in%20Ghana%202016_final_AGI%20low-res.pdf).
- Majekodunmi, A.O., Addo, H.O., Bagulo, H. & Bimi, L.** 2019. Integrated value-chain and risk assessment of Pig-Related Zoonoses in Ghana [online]. [Cited January 2020]. *PLoS ONE*, 14(11). <https://doi.org/10.1371/journal.pone.0224918>.
- Muithi, F.M.** 2018. *Factors affecting the sustainability of family business in Ghana after the exit of first generation of founding family members*. Undergraduate Thesis. Ashesi University College. Accra. <https://air.ashesi.edu.gh/handle/20.500.11988/378>.
- OECD.** 2017. *Unlocking the Potential of Youth Entrepreneurship in Developing Countries: From Subsistence to Performance*. Development Centre Studies. OECD Publishing, Paris. <http://dx.doi.org/10.1787/9789264277830-en>.
- OECD.** 2018. *Development Co-operation Report 2018: Joining Forces to Leave No One Behind*. OECD Publishing, Paris. <https://doi.org/10.1787/dcr-2018-en>.
- Oppong-Apene, K.** 2016. *Review of the Livestock/Meat and Milk Value Chains and Policy Influencing Them in Ghana*. Smith, O., Salla, A. & Bedane, B., eds. Food and Agriculture Organization of the United Nations and the Economic Community of West African States. Rome. (also available at <http://www.fao.org/3/i5264e/i5264e.pdf>).
- Sarbah, A. & Wen, X.** 2013. Financing family business in Ghana – challenges and the way forward. *International Journal of Advanced Research in Management and Social Sciences*, 2(12). <https://pdfs.semanticscholar.org/be9e/39de0998c3bca0405fd2c555116c4107147d.pdf>.
- Smith, S. & Sarpong, D.** 2018. *Living Income Report: Rural Ghana. Cocoa growing areas of Ashanti, Central, Eastern and Western Regions*. Series 1, Report 1. <https://cocoainitiative.org/wp-content/uploads/2018/12/LIVING-INCOME-REPORT-FOR-GHANA.pdf>.
- United Nations Country Team, Ghana.** 2018. *UN Ghana Sustainable Development Partnership Framework with Ghana 2018–2022*. United Nations Country Team, Ghana. Accra. (also available at <https://www.undp.org/content/dam/unct/ghana/docs/Delivering%20as%20One/UNCT-GH-UNSDP-2018.pdf>).
- Visser, T. & Chiloane-Tsoka, E.** 2014. An exploration into family businesses and SMEs in South Africa [online]. *Problems and Perspectives in Management*, 12(4). [Cited January 2020]. https://businessperspectives.org/images/pdf/applications/publishing/templates/article/assets/6200/PPM_2014_04_spec.issue2_Visser.pdf.
- Withagen, R.** 2019. *Want to invest in Africa? Try family businesses*. *The Africa Report* [online]. [Cited January 2020]. <https://www.theafricareport.com/15272/want-to-invest-in-africa-try-family-businesses/>.
- World Bank.** 2016. *Feminization of Agriculture in the Context of Rural Transformations: What is the Evidence?* World Bank Group Agriculture, Working Paper. Washington, DC. <http://documents.worldbank.org/curated/en/790991487093210959/pdf/ACS20815-WP-PUBLIC-Feminization-of-AgricultureWorld-BankFAO-FINAL.pdf>.
- Yensu, J., Oppong-Pepurah, E., Dwomo-Fokuo, E., Boadu, F. & Kusi, A.** 2015. Financing the Expansion of Family Businesses in Ghana: Which Way to Go, Debt or Equity? *Journal of Investment and Management*, 4(6): 301-310. (also available at <https://pdfs.semanticscholar.org/bf8b/33839d35e8bc029a62dfa68c9e8aec0c397b.pdf>).

▶▶ 9. Annexes

Annex 1: Survey guide

1. FBU profile (snapshot of current enterprise)

1.1 Tell us about the history of your enterprise

- What is your story? When did you form and what is the legal status of your business? (i.e. informal FBU, registered as an SME, etc.). Who is the owner of the business?
- Do you consider your business to be a woman-led or youth-led enterprise, or both?
- What activities are you currently involved in and what do you produce? Do you operate all-year round?
- Is this your full-time job or the only business that you are involved in? If not what else do you do?
- Do you support your family from the income generated from the business? If so, how many dependents do you have?
- How has your business evolved since beginning operation?
- Have you been active in other value chains/commodities before this business activity? If yes, which value chains/commodities, and why did you change?
- Are there value chains in which you would like to get involved? Which ones and why? What are the constraints to shift to another value chain?

1.2 Human resources

- Who is responsible for managing the business?
- How many people do you employ?
 - » Do you employ any family members? Number and age of the employed family members.
 - » And any non-family members (no.)? If so, how did you find them? Age of the non-family members that you employ.
 - » Are your employees full-time (40 hours/week) or part-time (20hrs/week) or casual (daily labour)? How long have they been working for you?
- What are the qualifications (education level and years of experience) of yourself and your employees?
- Do you have any problems hiring and retaining staff? E.g. is turnover of staff a problem for your business? If so, why do you think they leave?
- Do your employees have the right mix of skills you need to support the operation of your business?
- How do you pay your staff (e.g. cash daily, minimum wage, per piece production, in-kind etc.)?
- Does the fact that you are the manager of a family business have an influence on the relationship you have with other family members? (e.g. husband, wife, relatives that are influential). If yes, how do they influence your ability to run your business?

1.3 Scale of the business

- Estimation of total sales and turnover value of the business (total income generated from sales) for last financial year.

- If you are not a member of a VSLA, would you be interested in participating in this type of group with other women/youth running similar enterprises in order to pool your savings and support each other by providing small loans to members? Do you know any VSLAs available and close to you?

2.3 Access to land

- Do you need access to land to run your business? (If not got to 2.4). Do you have this access, and how did you get it? Was the process simple or complicated? Do you feel disadvantaged in accessing land as a woman/young person?
- Are there any ongoing issues associated with accessing land that affect your business?
- Have you ever participated in, or are you familiar with, any benefit-sharing schemes where landholders allow women or youth groups to use parts of their land in return for a percentage of the profits generated from the land? Do you think this is a good idea?

2.4 Access to education and training

- During the first two years of operating your business, did you ever participate in any training, mentoring or incubation projects or programmes run by any government or NGOs such as the National Youth Authority (NYA), or any other organizations?
- What was the training for, and how would you rate the usefulness of this training on a scale of 1 to 7 (1 not useful at all, 7 extremely useful for developing my business)?
- What training, if any, do you think you would have been particularly useful during this start-up phase but was unavailable to you?
- What training do you think you specifically need now to grow your business, and is it currently available to you?
- Do you think women and youth have equal opportunities to access education and training programmes to support their businesses when compared to adult men? If not, why not?

2.5 Access to technology (ICT)

- What information and communications technology do you currently use in your business (e.g. mobile phone to gather weather and price information, etc.)?
- Do you use any specific apps or companies providing ICT to help you run your business?
- For example, are you familiar with any of the following companies and the services they provide? MERGDATA, QualiTrace (including QualiMart, QualiCheck, QualiHelp), ESOKO (buying and selling web-based platforms; e-commerce), Farmerline, Syecomp Ghana, AGROINNOVA (Akokotrakra [poultry]) and Anitrack (Anitrack collars for livestock).
- Is there any specific technology that you require to support your business operations but cannot currently access? What is it, and why can you not access it (not available, too costly, etc.)?

2.6 Access to mechanization (production and post-harvest)

- Do you use any machinery in your operations (e.g. tractors, harvesters, processing and packaging equipment, etc.)?
- Do you own this equipment, or do you hire it? If you own it, where did you get the capital to purchase it? If you hire it, who is the service provider?
- Are you familiar with the Troto Tractor company (or similar companies) that hosts a platform to connect farmers and tractor operators? Have you ever used their services or services of other companies that use web-based platforms to connect entrepreneurs to mechanization? How would you rate them (poor, average, good, very good)?

- Is there any specific machinery or other hard technology that you require to support your business operations but cannot currently access? What is it, and why can you not access it (not available, too costly, etc.)?

2.7 Risk factors affecting the sustainability of your enterprise

- What do you think are some of the key reasons women and youth-led enterprises fail during the start-up phase (specifically) and beyond?
- What do you think are the specific challenges that cause a higher rate of failure in women and youth-led enterprises when compared to those led by (adult) males, i.e. are there any specific risks that you face that you believe do not necessarily apply to male-led enterprises (e.g. household risks for women that reduce the time they have available to allocate to the business – e.g. childcare duties, caring for elderly or sick relatives – and for youth enterprises – e.g. family commitments/obligations, competing employment opportunities/need to engage in wage-earning activities, etc.).
- Is there anyone who could take over the business for you if you were no longer able to run it, i.e. when you retire, or if you were no longer able to run the business (because of sickness, family issues, etc.), what would happen? Do you have a plan for managing this? What would you do?

3. Enabling environment for FBUs

3.1 Access to infrastructure

- Do you currently have access to water, electricity, mobile telecommunications, internet, wholesale markets and all-weather roads needed to produce and transport your products?
- Are there any limitations to the current infrastructure available that is needed to support and grow your business?
- Do you believe you are disadvantaged in any way from accessing this infrastructure because you are a woman or a young person?
- Is there any specific infrastructure that you believe the government should be investing in/upgrading to support the development of agribusinesses?

3.2 Enabling policy environment

- What government policies are you aware of that aim to support entrepreneurs (general)?
- Are there any policies that specifically target women and youth-led enterprises?
- Did you benefit from any specific government policies during the start-up phase that encourage the setup of women and youth-led enterprises (e.g. things like low-interest loans, access to training programmes, mentoring or incubation support, etc.)?
- Do you think the government is doing enough to support women and youth-led agribusinesses during this start-up phase? If not, what do you believe is the most important thing they could have done to support your business at this time?
- Are you currently benefitting from any supportive policies or projects offered by the government, donors or NGOs to help grow your business? Such as value chain support programmes at district or decentralised levels or other initiatives that are favourable to your business?
- Are there any policies that you are aware of that have a negative impact on the growth of your business? (e.g. excessive taxes on imported machinery or inputs, complicated process to register as formal business, unfavourable employment rules, such as if FBUs hire labour outside of the family, does this change their status?)

- Has your business ever suffered because of unpredictable changes in policy from the government (e.g. import or export bans)?
- Have you ever had any experience with environmental protection laws? Do you have any problems with environmental protection laws and regulations, such as rules against using certain packing materials (plastics), disposal of waste, etc.?
- Do you feel that women and youth-led enterprises have an opportunity for discussing issues that are inhibiting the growth of your business with local and higher-level government, i.e. do you feel you have a voice in influencing policy-making?

4. Product offerings

4.1 What products (or services) do you produce? How many units of each product would you produce per month/year?

Description of product	Units/month	Units/year

4.2 Describe the production process for each product

Product	Brief description of production process (key steps)

4.3 Marketing and pricing strategy

Do you have a marketing and/or pricing strategy, i.e. how do you find your customers and how do you decide what price to charge for your products?

5. Food safety and quality assurance

5.1 What food safety processes exist in your production processes? Have you or any of your employees been formally trained in food safety and quality assurance practices?

5.2 Does your business have any formal quality assurance certification, e.g. HACCP, GAP, etc.?

If so, when did you get it, and what impact has it had (if any) on accessing new customers?

What are the costs involved in implementing and maintaining a quality assurance programme?

5.3 Does your business have any sustainability standards, such as Rainforest Alliance, organic, Fairtrade, etc.? If so, when did you obtain it, and what are the costs involved in implementing and maintaining this standard?

6. Value chain analysis (FBU as focal actor in the chain)

6.1 Suppliers

→ FBU demand for main raw materials or inputs (e.g. seeds, fertiliser, agricultural products such as vegetables, milk, etc.)

Description of raw material or inputs used by the business	Monthly demand	Quality specifications	Average price paid/unit (in GHS) (Any seasonal variation?)
e.g. sunflower seeds	5 000 kg	No foreign materials percentage of moisture content	GHS/kg

→ Supplier relationships

Raw material	Number and type of suppliers (e.g. farmers, wholesalers, co-ops, etc.)	Ordering process and terms of trade (e.g. order once per week, pay cash on delivery; once per month, contract supply)	Can suppliers meet your requirements for quantity and quality? (Y/N) If no, why not?
e.g. milk	1 cooperative (20 farmers)	Weekly order by phone, payment at the end of the month in cash	No, sufficient quantity often not available, milk quality does not always meet required standards; percentage of butterfat fails to pass bacteriological testing

- If something is wrong with the raw material delivered by your supplier, how do you deal with this (e.g. call and tell them, return to supplier, discounting on price, stop buying from them, etc.)? Does this happen often?
- Do you have any long-term suppliers (i.e. one year or longer)? If so, how long have they been supplying to you, and what makes them a good supplier?
- How do you find and select new suppliers?
- If there was one thing you could improve about the service offered by your suppliers, what would it be?
- Are you aware of any ICT solutions (mobile applications or companies providing online/telephone help services) that can be used to help source raw materials and address quality issues (e.g. QUALITRACE company, QualiMart and QualiCheck applications to help farmers source genuine agro-inputs from dealers and verify authenticity)?

6.2 Customers

Customer-demand profile for your product(s)/services – top five customers

Customer type (e.g. wholesalers, local shops, consumers)	Your product and average monthly order	Total monthly demand (of customers, if known)	Quality specifications (packaging, labelling, QA certification, etc.)	Price/unit (GHS)
e.g. local market retailers	Yoghurt (200 ml)	500 units		GHS/unit

→ Customer relationships – for each of your customers listed under, i, please provide details in the table below related to ordering processes, terms of trade and ability to meet the requirements of your customers.

Customer type	Ordering process and terms of trade for payment	Can you meet the requirements of your customers?
(e.g. wholesalers, local shops, consumers)	(e.g. customer order once per week by phone call, SMS, cash on delivery/order once per month, contract supply)	(Y: always; S: sometimes; N: rarely) What are the main problems you face in meeting requirements?
e.g. consumers	Consumers buy directly from farm and pay cash on purchase or via mobile banking app	

- What happens if the customer is not satisfied with the products that you deliver to them? Do they call/message you and tell you? Do you have to replace the product or for bigger customers, do they deduct it from the invoice that they owe you? Does this happen often? Do you ever check that your customers are satisfied with your product?
- Do you have any long-term customers (i.e. one year or longer)? If so, how long have you been selling to them, and why do you think they continue to buy from you?
- Is there potential to increase sales to your existing customers?
- Have you identified any new customers for targeting? How do you plan to approach them?
- Are you aware of any ICT solutions (mobile applications or companies providing online/telephone help services) that can be used to help market your product, (e.g. ESOKO MarketPlace App for buying and selling, PushAPP for marketing, etc.)?
- Do you have your own brand/logo and packaging? Did you develop it yourself or with support?
- Have you ever received any feedback on your product from consumers? If so, how did you use this information? Do you think it is important to know what consumers think of your product?
- If there was one thing that you think you need to improve (as a supplier) in order to better meet your customers' needs, what would it be?

6.3 Support services

→ Existing support services used by your company

Type of support service (e.g. transporter, packaging company, bank, training provider)	Name of provider and frequency of use e.g. number of months/years/times used	Description of service	How satisfied are you with the service they provide? Rank (1 to 5) 1 = Not satisfied 5 = Very satisfied
e.g. Transporter	Company X Use twice/weeks for the past 6 months	Company X collects finished products from farm and delivers to local retailers twice per week	
e.g. Bank or VLSA	X Bank 3 loans over past 5 years	12-month loan to cover operating costs; monthly repayment of principal and x% interest/month/annum	
e.g. Training	Provincial Department of Agriculture	Introduction to food safety practices for agroprocessing	
e.g. ICT	QUALITRACE Used twice in past 12 months	Use of Qualicheck APP to verify quality of seeds and fertilisers purchased	

→ Are you a member of any associations (e.g. cooperatives, village savings groups, youth associations, women's groups, etc.)? If so, please complete table below.

Name of association	Membership fee	Services offered and frequency of use
e.g. VLSA	GHS/year	Monthly member meetings to collect savings and distribute loans to members

→ Are there any services that you wish your associations would provide to members that they currently don't?

7. Competitor analysis

7.1 Do you know who your competitors are? How many other companies produce the same products that you do? Do you compete for the same customers?

7.2 Do you have any strategies to defend and grow your market share?

i.e. What makes you a better supplier to your customer than other companies? What is your competitive advantage?

8. Assessing financial performance

8.1 Marginal analysis for past financial year

Item	Total per annum (GHS)	Per unit sold (GHS)
A. Income		
<hr/>		
B. Variable costs		
<hr/>		
Total variable costs		
<hr/>		
C. Fixed costs		
<hr/>		
Total fixed costs		
<hr/>		
D. Net income (A - B - C)		

Profitability analysis

- Net income per annum =
- Net income per unit sold =
- Number of units sold/year =
- Return on Investment (%) =

Comments:

8.3 Unit cost analysis

Unit item	Item cost per unit (GHS)	Total unit cost (GHS)	% of unit costs
<u>Total variable costs</u>			
Total fixed costs			

8.4 Break-even analysis

→ Break-even price per unit =

→ Break-even sales =

Comments:

8.5 Business health check

	Output (GHS)	Actual % of output	Acceptable % of output
<u>Variable input costs</u>			
			<30-35%
Subtotal =			
<u>Paid labour</u>			
			<15-17.5%
Subtotal =			
<u>Power & machinery</u>			
			<15-17.5%
Subtotal =			
<u>Rent & finance</u>			
			<15%
Subtotal =			
<u>Sundry overheads</u>			
			<5%
Subtotal =			
<u>Profit</u>			
			>15%
Subtotal =			

Comments on business health check:

8.6 Summary of financial performance

→ Viability

→ Sustainability

8.7 Recommendations to improve profitability

Based on the findings from your financial analysis and business health check, what do think are the priority areas that you need to focus on to improve the profitability of your business in the next 12 months? E.g. Do you plan to reinvest any income generated into the business?

9. SWOT Analysis

9.1 What do you think are the overall strengths, weaknesses, opportunities and threats facing your business?

Strengths	Weaknesses
e.g. good relationship with suppliers so can always get raw product when needed	e.g. no quality standard, therefore, cannot sell product to higher value customers like supermarkets
Opportunities	Threats
e.g. strong opportunities to increase sales volumes to existing customers	e.g. many competitors offering same product for similar price

10. Conclusions and Recommendations from the business analysis (5-9)

This section is to be completed by the national consultants conducting the interviews after reviewing the data collected as a way of summarizing key findings from Sections 5-9.

10.1 What are the main findings from the business analysis related to the following sections:

- Food safety and quality assurance
- Relationships with suppliers
- Relationships with customers
- Business support services
- Competitors
- Financial performance

Annex 2: List of participating WYEs

No	Name	Contact	Products	Location	Rural/peri-urban/urban	Gender/age category
	Adom Marada		Poultry	Abokobi Sesemi, Greater Accra Region	Peri-urban	Female-led
	Acquatic World Industries Ltd	0555507515	Processing of fish sausages	Sakumono	Peri-urban	Female-led
	Anderson Agumbillah**	0544500073	Pig production	Pokuase	Peri-urban	Adult man
	Ayeh Farms	0268993995 Mamalee00@gmail.com	Rabbit production and processing	Atwima, Nkawia, Ashanti Region	Rural	Female-led
	Benjbelle Company Ltd	0575807401 Bosei@benjbelleltd.com Bernardoseikwaku@yahoo.com	Catfish production and processing	Wadia-Adwuma, Kaase, Ashanti Region	Peri-urban	Youth-led
	Cecilia Fish Products	0554071370	Fish processing	Keta	Rural	Female-led
	Daniel Oppong		Poultry production	Berekum	Rural	Adult man
	David Kuwornu Akumani	0246516936	Pig production	Dzemeni	Rural	Adult man
	Doris Ahadzi Enterprise	0244222204	Fish processing	Tema New Town	Peri-urban	Female-led
	E-Juice Company Ltd	0242243324 amaasomakarikari@gmail.com	Fruit processing	Atonsu, Kuwait, Ashanti Region	Urban	Female-led
	Emmanuel Gyabaah	0244478220/ 0203045717	Poultry production	Berekum	Rural	Adult man
	Faama Mick	0201853100 Michealagyamfi2002@yahoo.co.uk	Catfish production and processing	Ahodwo-Kumasi A/R	Urban	Youth-led
	Farm hup	0201522354	Marketing of vegetables	Adenta Down	Peri-urban	Woman and youth-led
	Fertile Acres Farms	0243953070 Mimaggie95@yahoo.com	Poultry production and processing	Ejisu, Ashanti Region	Peri-urban	Female-led
	Goat Masters	0245353507	Rearing, processing and marketing of goats and goat meat	Kotobabi	Urban	Youth-led
	Jesko Farms	Josephkorang999@gmail.com	Catfish, poultry	Berekum, Bono Region	Rural	Youth-led
	Kenny Farms	0242248311 kennykonadu84@gmail.com	Cassava	Sewua, Atobiase, Ashanti Region	Rural	Youth-led
	Mariseth Farms	0545958588/0267786212	Production and marketing of cash and food crops	Swifo	Rural	Woman and youth-led
	May Farms (trial interview only)	0244130213	Quail farming	Ofankor	Peri-urban	Woman and youth-led
	Mountain Brown Rice	020842306	Production, processing and marketing of rice	Vane, Avortime	Rural	Female-led
	Mr Kitchen	0207849751	Production of natural spices and drinks	Madina Estate	Peri-urban	Youth-led
	Nyame Bekyere Farms	0591613977	Cassava	Sewua, Atobiase	Rural	Female-led
	Oserby Unique Ventures	0245255549/0244361990	Catfish/poultry	Kubease, Ashanti Region	Rural	Female-led
	The Oak Farms Ltd	0242232181 portia@apoakltd.com apoakltd@gmail.com	Maize and poultry	Accra	Urban	Female-led
	Wontesty Farms	0243571076 skamponsah@gmail.com	Catfish processing and marketing	Ejisu Kwaso, Ashanti Region	Peri-urban	Youth-led
	Rabbits Republic GH	0501300350	Rabbits	Accra, Spintex Road	Urban	Youth-led
	Yehowa Nye Kplorlanye Fish Processing and Trade	0246675232	Fishing and fish processing	Dzemeni	Rural	Woman and youth-led

Annex 3: Value chain information

A. Poultry value chain

The importance of the poultry sector in Ghana can be exemplified by the an increasing poultry population. There has been a raise in poultry population of 40 percent between 2011 and 2017. The increase has mainly occurred in the layer population driven by market opportunities for eggs without competition of imports (SRID, 2017). The contribution of the livestock sector to GDP was 3 percent in 2018 (GSS, 2019), with meat (livestock and poultry) contributing 40 percent of the national animal protein supply (the rest coming from fish).

The trends in the poultry population (in '000)⁵ in Ghana between 2011 and 2017 (Statistics, Research and Information from MoFA Directorate, 2017) shows a constant increase from 52 575 to 75 373. The distribution between the subsectors is: 59 percent layers, 14 percent broilers, 14 percent indigenous chicken, 7 percent guinea fowls and 6 percent others (Veterinary Services Directorate, 2010; USAID programme Feed the Future).

The most prevalent system for layers (estimated at 23 million, 2012) is under commercial systems, indoors in deep litter, or battery cage systems with a productivity of 250 eggs/year (high investment costs; purchase of DoCs, feed, vaccine and drugs and biosecurity practices). The majority of the production occurs in Brong Ahafo Region (32 percent); Ashanti Region (37 percent); Eastern Region (10 percent); and Greater Accra Region (11 percent).

The broiler production (estimated 5 million, 2010) is mostly undertaken in Brong Ahafo (over 50 percent), Ashanti and Greater Accra regions. The systems are uncompetitive since the consumer price for local produced broilers are higher than consumer prices for imports because of high feed costs locally. (223 000 tonnes in 2018).

Technical coefficients: The broiler birds attain 2 kg to 2.25 kg live weight at six to seven weeks, and are ready for the market. Layer birds reach 16 weeks before pullets start laying eggs. The average industry egg production is 230 to 250 eggs per layer per year. The average cost per kilogram of producing broilers in Ghana is estimated at GHS 15 (USD 2.7) for large-scale producers, and it is higher for small-scale producers. The average weight of live ready-to-eat broiler birds is between 2 kg to 2.25 kg, and that of dressed birds ranges between 1.5 kg to 1.9 kg.

The 2014 data for per capita consumption of chicken meat is 6.6 kg (4 kg in 2010), of which the bulk (60 to 70 percent) is from imports, mainly from Brazil, China, EU and USA. There has been a change in consumption habits, with an increasing preference for dressed and processed chicken. The market share of different subsectors are: 10 percent from domestic broiler production; 20 percent spent layers; and 10 percent guinea fowl and traditional raised chicken (backyard). Prices in 2016 at the retail level (Kumasi and Accra) were (in USD) : imported broiler: 3.5; domestic broiler: 15; local cockerel: 6.1; guinea fowl (Northern Region: 6.1; Accra: 10 to 14); spent layer: 4.9; eggs: local chicken/ tray: 6.1; eggs from layers per tray: 6.1. During festive seasons, consumers prefer local chicken, and this is driven by taste.

A SWOT analysis of the poultry value chain is provided in the following table (multiple sources)

⁵ Thousands

Weakness

- Low access to financial services by value chain actors because of high interest rates and lack of collateral (plus sector perceived as high risk (avian influenza [2007]));
- Poultry vaccines are not produced locally. Apart from the ND-12 vaccine produced to combat New Castle Disease, they are all imported to Ghana.
- Biosecurity not guaranteed (as evident from outbreaks of the avian Influenza, lack of vaccines and low quality of available vaccines);
- High cost of production because of high feed costs;
- Limited processing and cold chain facilities, and high energy costs for processing and cold storage;
- Lack of legislative framework for hatcheries and low-quality day-old chicks due to poor-quality local hatcheries, most poultry farmers prefer to buy imported day-old chicks, especially layer day-old chicks. In 2018, Ghana imported 511 960 broiler day-old chicks and 7 130 999 layer day-old chicks.
- Poor processing facilities (certification, control of standards);
- Feed millers supply:
 - » Only producing at about 40 to 50 percent of their capacity because of low demand from the local poultry industry for local small-scale producers as large-scale poultry producers mostly make their own feed;
 - » inability of local feed mills to meet local demand because of inadequate maize and soybean production locally;
- Inefficient production systems, especially in feed wastage, abuse of antibiotics and poor linkages between input suppliers and marketers;
- Inadequate testing facilities for feed, making it difficult for farmers to test locally produced feed and need for investment in testing facilities for carcass and water.

High cost of local production (more than 80 percent of poultry farmers in Ghana produce their own feed because of the cost of feed on the market; feed cost constitutes about 60 percent to 70 percent of total cost of production), making the unit cost per live bird very high and competition from imported poultry products.

Strengths

- Ability to produce well formulated diets at the existing 17 commercial feed mills (1 000 tonnes per day);
- In 2013, the Government of Ghana removed customs duties on poultry inputs such as feed, additives, drugs and vaccines and has facilitated improved access to veterinary services;
- Potential high demand for poultry vaccines; over 70 million birds in Ghana provide a huge opportunity to invest in poultry vaccines production locally;
- Partnerships with local training institutions to run short courses for poultry farmers in the areas of biosecurity systems, feed formulation, use of veterinary medicines, administration of vaccines, etc., can be explored.

Opportunity exists for investments in processing facilities, value addition to poultry meat, packaging materials, cold chain facilities (transport, storage, etc.).

Constraints

- Lack of organization and integration: poultry value chain constitutes actors who largely are 'stand-alone' business entities and having weak relationships with other industry actors;
- Feed, day-old chicks and veterinary inputs are all outside the control of the farmer;
- Required transport facilities to transport day-old chicks from the airport to the final destination are non-existent. Very few hatchery/breeder companies have parent stock. Poor functioning hatchery equipment, day-old chicks not vaccinated with Marek's vaccine, lack of proper functioning standby power source to keep the incubator functioning during power surges or outages. Poor quality day-old chicks lead to poor functioning flocks.
- Few farmers cultivate yellow maize, which is an important ingredient for feed. The price of maize has a direct impact on the cost of poultry feed (maize is the country's most important cereal crop and the main input for the production of maize meal one of the staples in Ghana; maize accounts for 60 percent of poultry feed, its availability and price have important implications for the profitability and growth potential of feed).
- Producers technical practice:
 - » wrongful siting of poultry farms, inappropriate housing for the birds, poor biosecurity systems, feed wastage;
 - » abuse of antibiotics and limited knowledge in improved production techniques;
 - » A lack of value-addition activities, mainly have to do with a lack of knowledge, equipment and technology;
- Slaughtering and processing facilities for poultry in Ghana are limited: only two modern certified poultry processing facilities exist in Ghana.

Opportunities

- High demand for poultry meat and eggs, high consumption all year round, with peaks during festivity periods;
- High demand for DoCs (15 local hatcheries and 8 importers [GPP, 2017])
- The existence of the Ghana Veterinary Medical Association (formed in 1974);
- Government measures in support of the sector:
 - » In 2013 the Government of Ghana removed customs duties on poultry inputs such as feed, additives, drugs and vaccines and has facilitated improved access to veterinary services. Moreover, on 15 July 2014, the Broiler Revitalization Project was launched, aiming to stimulate local broiler production;
 - » A new poultry and livestock import policy was designed to cut down the country's importation of chicken meat. The policy limits imports to 60 percent, meaning that importers must buy 40 percent of their produce from local sources;
 - » In 2019, the President of Ghana launched the "Rearing for Food and Jobs" campaign, aimed at developing a competitive and more efficient livestock industry that will increase domestic production, reduce importation of livestock products, contribute to employment creation, and improve livelihoods of livestock value chain actors;
 - » The Ghana Poultry Programme (GPP) is a five-year (2015–2020) project being implemented by ACDI/VOCA and Technoserve to expand local production and processing of poultry meat and eggs in Ghana.
- Council for Scientific and Industrial Research – Animal Research Institute ((CSIR-ARI): trial using the black soldier fly larvae (insect larvae) as part of efforts to find cheaper sources of protein. Insect meal can be sold at half the price of fish meal (CSIR-ARI under the auspices of the Centre for Agriculture and Biosciences International [CABI] and the Sustainable Agricultural Intensification Research and Learning in Africa [SAIRLA]).

B. Rabbit value chain in Ghana

A SWOT of the rabbit value chain is provided in the following table (multiple sources)

<p>Weaknesses</p> <ul style="list-style-type: none"> → Current demand for rabbit meat is low; → Due to low popularity of rabbit farming compared to other livestock, there has been little efforts in research, extension and promotion; → Hard to get manufactured feeds for rabbits; → No formal marketing system; → Benefit of rabbit meat not well known.
<p>Strengths</p> <ul style="list-style-type: none"> → The Investing for Food and Jobs (IFJ): An Agenda for Transforming Ghana's Agriculture (2018–2021) includes rabbit farming as one of its value chains.
<p>Constraints</p> <ul style="list-style-type: none"> → Low price of rabbit meat; → Shortage of fodder; → Pest and diseases; → High cost of capital; → High cost of operating materials and veterinary care; → Inadequate knowledge among extension agents on diseases, diagnosis and treatment.
<p>Opportunities</p> <ul style="list-style-type: none"> → A study in Kumasi found that desirable nutritional attributes of rabbit meat and other socio-economic factors of meat consumers make the potential demand for rabbit meat high (69 percent). → It was estimated that GHS 5 292 (approximately USD 2 672 at the time of the study) was needed as start-up capital for a 40-doe⁶ unit meat rabbit farm in Kumasi Metropolis. The cost of breeding animals, housing and equipment, represented 12.47 percent, 53.97 percent and 24.87 percent, respectively, of the initial estimated capital. A net present value of GHS 5 910.75 (approximately USD 2 984) was obtained at the end of the fifth year, with an internal rate return and profitability index of 70 percent and 1.12, respectively. Based on the analysis, it was concluded that meat rabbit production is feasible in the Kumasi Metropolis of Ghana. The study recommends embarking on mass advertisement; farmer association and adapting to new technologies in the production process will help to enhance productivity and market opportunity as there are a few rabbit butcheries. → Rabbit eating culture is picking up, including in hotels and chain stores. → Rabbits manure (composted with its urine) is a high nitrogen organic fertiliser. → Pelts can also be cured and be sold to tanneries for the leather industries.

Aquaculture Value chain (tilapia and catfish) and value chain for processed fish (tilapia and catfish)

Ghana is already a leading aquaculture producer and the fastest growing in sub-Saharan Africa (SSA). FAO (2017) estimates that Ghana is the 13th largest producer of tilapia in the world and the second largest in SSA after Uganda. As a lower middle-income country with a growing middle-income population, the market for high-value products, including tilapia, is expanding. Fish annual consumption stands at around 28 kg/capita in Ghana, one of the highest consumption levels both in SSA and globally.

⁶ Female rabbit

Fish accounts for 60 percent of the national dietary intake of animal protein in Ghana (Rurangwa et al., 2015), about four times higher than the global average (Hishamunda et al., 2009).

On the production side, the presence of one of the largest man-made lakes in the world in Ghana, Lake Volta, provides an almost-ideal resource for cage aquaculture, comparable only to Lake Victoria in Eastern Africa. Production from capture fisheries in Ghana, both marine and inland, is declining or stagnant. Aquaculture can satisfy the demand of Ghanaian consumers for fish.

Tilapia cage aquaculture in Lake Volta grew twenty-five-fold over the last decade, from 1 500 tonnes in 2006 to 45 000 tonnes in 2015, according to official data from the Ministry of Fisheries and Aquaculture Development (MoFAD), although industry experts estimate it to be closer to 35 000 tonnes.

An IFPRI (2018) study on the feasibility of aquaculture included key indicators such as production costs and harvest information per cage and per kilogram, feed conversion ratio, input prices, tilapia (output) prices, and the profit margin. Production costs included those for feed, fingerlings, fuel of boats used for feeding and monitoring, hired labour, salt, medicine, vaccines, yearly depreciation and repairs of cages, electricity and transportation. The costs of family labour were not included in the production costs (this is usually between six and seven person-months annually for micro and small-scale farms. Investors and managers' salaries also were not included (these cost components are more relevant for medium and large-scale farmers). Production costs and harvest information were collected for the period 2015–2017. Two scenarios are presented: a low-yielding cycle or season, which are those in which disease and extreme weather events adversely affect the farmed fish, and under a high-yielding cycle or season, which represents more normal production conditions.

The Tilapia value chain:

- Fish hatcheries, feed producers, and other suppliers that sell cage construction materials (nets, poles, and barrels) to farmers. Tilapia farmers in Ghana primarily rear the fish in cages on Lake Volta, but also in concrete ponds. Cage culture is closely governed by regulatory bodies.
- Availability of quality fingerlings: Hatcheries are both public and private. All the large-scale commercial farms produce fingerlings for their own farms and some medium-scale and small-scale farmers have also integrated brood-stock production. The Fisheries Commission estimates that there are 47 private hatcheries and three public hatcheries currently in operation. The main breed for farmed tilapia in Ghana is the local Akosombo strain, first developed in the early 2000s and now in its eleventh generation. The main alternative to Akosombo is the newer generation of genetically improved farmed tilapia (GIFT) strain. Earlier impact studies on GIFT tilapia show an 18 to 58 percent higher bodyweight at harvest compared to unimproved strains (Dey et al., 2000). Newer generations of GIFT show additional improvements in productivity. GIFT is considered by government and research institutes in many SSA countries as an exotic crossbred species that could pose a risk to the genetic resources of wild tilapia on the continent (Gupta et al., 2004; Brummet and Ponzoni, 2009; Ansah, Frimpong and Hallerman, 2014). In Ghana, while considerable interest in GIFT was expressed by most of industry actors interviewed, no risk assessment has been done to assess whether the commercial introduction of the fish strain in Ghana would be prudent.
- Feed is the key determinant of the cost-effectiveness and competitiveness of the industry. Feed represents about 80 percent of the cost of production of farmed tilapia. The local feed sector is dominated by one producer, Raanan Fish Feed West Africa. Imported feeds, such as Multifeed, Pira, Coppens, and AllerAqua, are 30 percent more costly than local feed (Rurangwa et al., 2015; interviews conducted for this study), and their prices are dependent on the exchange rate. Farmers

prefer to use imported feed at early stages of fish production and then continue with the cheaper locally-produced feed from Raanan.

- The high cost of raw materials is the main issue facing fish feed producers.
- The ingredients required include maize, soybean, fish oil, fish meal, groundnut cake, cotton cake, premix, wheat bran and vegetable oil.
- Farmers: The vast majority of tilapia farmers practice cage culture and are concentrated on Lake Volta. Cage culture requires lower start-up and operational costs than pond culture. The Fisheries Commission estimates that there are ten large tilapia farms, all of which use cage culture, eight medium-size farms (six cages and two ponds), and several hundred micro and small-scale farmers. From interviews with industry actors and a listing exercise in main-producing regions, our estimates of the number of medium- and large-scale farms correspond to the official statistics, but our estimates of the number of small-scale farmers is between 100 and 300.
- Marketing: The tilapia value chain in Ghana is relatively short and simple; this is reflected in the integration of production and sales. Although salted, dried, and smoked tilapia have been traditional sources of protein in the country for decades, consumers now prefer fresh tilapia in Greater Accra, Volta and Eastern regions.
- Smaller-scale farms cannot compete in the large-sized tilapia market because they cannot provide consistent supplies of large fish. The determination of tilapia price is generally controlled by the few large-scale farms in the country that supply substantial amounts of tilapia to their customers on daily basis.
- The average farm-gate price in Ghana at the time of the study was GHS 11/kg (USD 2.75/kg), compared to USD 1.23 to USD 1.88/kg at farm gate in other countries (FAO GIEWS).
- Hired labour represents 2 to 6 percent of total costs. This figure does not include family labour, which is usually a full-time person, for micro (minor) and small-scale farms. This also does not include investors' returns and managers' salaries for medium and large firms. Hired labour is mainly for feeding, monitoring, security and harvesting, and general business operations for larger firms.
- Cage construction, depreciation and repairs (two-year lifespan) account for 2 to 5 percent of costs. Other costs are transport or conservation equipment.

Profit margins:

During good harvests, micro farmers incur GHS 6.40 in costs to produce 1 kg of tilapia, while during bad harvest, micro farms incur GHS 7.60. At a farmgate price of GHS 10, micro farmers generally receive between GHS 2.40 and 3.60 as a gross margin. Depending on the sales outlet, as much as GHS 8/kg of tilapia is captured by transportation and traders' margins before it reaches final consumers. Regular and size 1 tilapias fetch roughly GHS 18/kg in most local markets, cold chains, and roadside outlets.

For small farmers, the cost to produce 1 kg of tilapia is GHS 6.80 during good harvests and GHS 9.30 during bad harvests. Compared to micro farmers, small-scale farmers have higher interseasonal variability in outputs, making them more prone to very low yields and low profits during bad harvests. For medium farmers, the cost to produce 1 kg of tilapia is GHS 5.70 during good harvests and GHS 8.80 during bad harvests. Medium farmers' returns are between GHS 2.20 and 5.30. For large farmers, the cost to produce 1 kg of tilapia is GHS 4.00 during good harvests and GHS 6.60 during bad harvests.

Large-scale farmers' returns range from GHS 4.40 to GHS 7.00, and can even go up depending on the market outlet.

Overall, tilapia cage culture is profitable and provides good income-generation opportunities along the value chain to traders, transport operators, feed importers, and producers and hatcheries. Despite higher costs of production, attractive tilapia prices ensure that profit margins for tilapia farmers in Ghana are comparable or even higher than those observed for tilapia farmers in other countries.

Catfish production

A catfish culture feasibility study⁷ documented three profitability metrics, i.e., benefit-cost ratio (BCR), payback period (PBP), and return on investment (ROI) to assess profitability. Average BCR for smallholder aquaculture farms for a 5-year period was estimated at 1.14. When disaggregated, tilapia profitability was higher (BCR = 1.16) compared to catfish (BCR = 1.11) but not significant.

The results showed that both tilapia and catfish farming had positive returns on investment. However, in the long term, profitability from catfish was higher (ROI = 0.74) than tilapia farming (ROI = 0.73) but not significantly different. Tilapia farms recorded shorter payback time of seven years when compared to catfish farms estimated at nine years.

The data showed that lack of capital in general is a major challenge for the development of aquaculture. Aquaculture farming necessitates adequate capital, which is necessary to create, maintain, and expand operations to increase efficiency.

The study indicates that funding for aquaculture farms is mainly from personal savings. According to Varadi (2000), the aquaculture sector is characterized by being composed mainly of small, family-owned businesses of limited financial capacity. According to FAO (2002), the most common external source of funding to provide capital for aquaculture ventures is borrowing, mainly from banks.

Main factors impede access by aquaculture farmers to bank loans in sub-Saharan Africa: (1) banks' perception that commercial aquaculture carries a particularly high risk of failure, (2) banks' insistence on collateral, (3) high interest rates, and (4) lack of knowledge on how to prepare and present a loan application to a bank, and what specific information the bank might require.

Improved profitability of Ghana's small-scale aquaculture industry will, however, only be possible if the issue of access to loans is addressed. The predominant form of ownership among small-scale ventures in Ghana is sole proprietorship, which explains why this form of ownership for aquaculture farms are preferred over joint ventures.

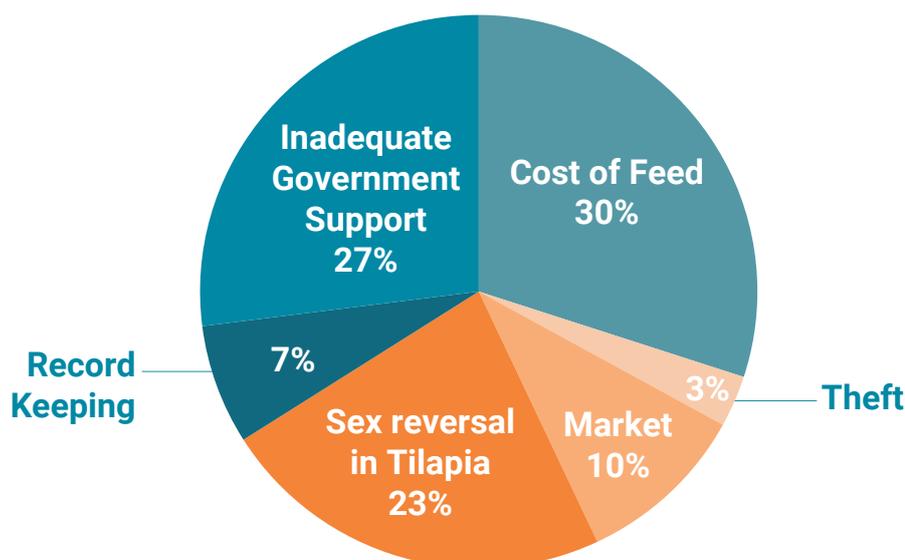
Arguably, joint ventures enable partners to increase efficiency, reducing expenses by cutting back on fixed costs and eliminating redundant operations.

In Ghana, the cost of feed accounts for about 70 percent of total fish-farming production costs. Choice of feed for fish farming could greatly affect total productivity. Although some supplement with agricultural by-products such as groundnut and maize husk, most farmers prefer using commercial feed because it has higher nutritional value, the ability to float, and higher palatability, although it is relatively very expensive.

The fact that attention from investors, government agencies and researchers has been lacking in the development of technologies to make locally produced feed competitive with those produced by foreigners has accounted to the high dependency on the latter, which has in turn increased the costs involved in aquaculture.

⁷ Aquaculture International (2019). ; Are small-scale freshwater aquaculture farms in coastal areas of Ghana economically profitable? 27: 785–805. <https://doi.org/10.1007/s10499-019-00363-9>. Denis Worlanyo Aheto, Esther Acheampong, and Justice Odoiquaye Odoi; 25 April 2019.

Figure 1 Major challenges faced by smallholder farmers in coastal regions of Ghana



Consequently, all the farmers interviewed during the period of the research complained about the cost of extruded feed, as showing in Figure 1. The limited access to agriculture loans and the high interest rates of the few banks that offer loans aggravate the production cost challenges of smallholder fish farmers, forcing them to rely on their personal savings as capital. Therefore, establishing a loan system attractive for small-scale activities would make a boost of aquaculture more likely.

Again, challenges with marketing of fish were recorded among 22.5 percent of the total sample. Marketing challenges could be attributed to distance of farm sites local market, high charges from middlemen and lack of adequate transportation means to get goods to consumers.

Also, 32.5 percent of farmers reported challenges with sex-reversed tilapia where sex-reversal was incomplete and affected production. The situation could be averted when quality fingerlings from accredited hatchery operators are purchased. Hence, the need to train more hatchery and nursery operators and to develop government-owned hatcheries close to aquaculture sites is paramount. Also, from Figure 1, 7 percent of fish farmers had issues with record-keeping, where it was observed that records kept were poor and ignored certain relevant aspects of fish farming, such as water quality assessments, stocking dates, and annual financial reports, similar to challenges reported by Engle and Niera (2005).

According to Machaena and Moehl (2001), inadequacy of governmental support activities had handicapped the orderly and rapid development of the aquaculture venture; as shown in Figure 1, 27 percent of farmers confirmed that inadequate governmental support (financially and provision of training and machinery) was an impediment on aquaculture production in Ghana. Theft, however, was a minor challenge faced by only 3 percent of the farmers; theft cases were not rampant because many of fish farmers lived on their farms.

Recently, a new form of aquaculture has been launched (2011, Cluster Farming Holdings [CFH] is located at Ekumfi Ekrawfo in the Central Region, some 10 km off the Accra–Takoradi road, a site carefully chosen for its access to the big markets in Accra, Takoradi and Kumasi) where by CHF sets up, provides farmers with out-grower contracts, providing a total package of juveniles, fish feed, technical advice and off-taker arrangements. This allows to reach the critical mass required to attract all of the

industry's ancillary services, as well as market its produce. In addition to the fish hatchery, CFH's hub farm also comprises vegetable and fruit nursery and a state-of-the-art chicken hatchery (for fish the volume handled by CFH is 1.5 million juvenile catfish and 200 000 juvenile tilapia a year).

Catfish markets

Processed fish, particularly smoked catfish, has a higher demand in inland areas than in coastal areas. In the Ashanti Region, the main catfish producer, farmed catfish is mainly smoked, although some farmers sell live catfish to buyers in Accra and Kumasi where there is a growing market for live catfish in Nigerian restaurants.

Tilapia is the major species and constitutes over 90 percent of aquaculture production (Kassam, 2014). The catfishes (*Clarias* spp. and *Heterobranchus* spp.) and *Heterotis niloticus* account for the remaining 10 percent.

Twenty-four hatcheries were producing only tilapia fingerlings. One hatchery was producing both tilapia and catfish fingerlings and two hatcheries were producing only catfish fingerlings. Tilapia fingerlings represented more than 99 percent of the total fingerlings production, the rest was of catfish (less than 1 percent) in 2013 (MoFAD, 2014). For catfish, native wild stocks and domesticated farm stocks are largely used, although cross-breeds of wild populations are commonly used to maintain vigour. In recent years, catfish brood-stock imports from Nigeria have been introduced into some fish farms in Ghana. The total number of tilapia and catfish fingerlings produced in all hatcheries increased by 63 percent, from 79 380 269 in 2012 to 130 127 500 in 2013.

Currently, there is no industrial processing of aquaculture products in Ghana. Farmed tilapia and catfish are processed on a small-scale level such as smoked, fried, salted and fermented. There are an adequate number of processors available, but technology applied to processing are generally low (example, sun-drying, small-size smokers). There is the need for innovation in the processing sector.

Weaknesses

Tilapia cage culture:

- Failures in the credit market and lack of institutional arrangements to address moral hazards and loan default
- The cost to produce one kilogram of tilapia in Ghana are much higher than in other countries and is between GHS 7.60 and GHS 9.40 during low-yielding cycles (USD 1.90 to USD 2.40) and between GHS 5.60 and GHS 6.80 (USD 1.40 to USD 1.70) during normal high-yielding cycles. This is mainly attributed to the fact that the price of feed is about twice as high in Ghana compared to other major tilapia-producing countries.
- Affordability for the consumer: Tilapia is 47 percent more expensive than local chicken, and almost three times more expensive than imported chicken. In terms of the protein equivalent, tilapia is 37 percent more costly than local chicken. Similarly, in terms of kilocalories provided, tilapia is three times more expensive per kilocalorie than local chicken.

Catfish:

- Poor access to capital;
- Poor access to quality of fingerlings and juveniles to quality of feed to effective market access

Strengths

- The sector provides employment to many rural workers. Our [FAO's] estimate is that 2 000 to 3 000 workers are employed on tilapia farms as divers, cage construction workers, fish monitors and feeders, and to provide security. This is in addition to thousands more who work in hatcheries, feed production, and tilapia trade and marketing.

Constraints

- High feed costs (80–86 percent of total cost), poor quality fingerlings (costing 5–11 percent of total cost), lack of technical skills on fish farming, theft, and extreme weather events such as flood, strong wind, and drought. Moreover, the cost of District Assembly fees and permits and regulatory hurdles were highlighted by medium and large farmers.
- Higher handling and transportation costs in Ghana compared to other countries (World Bank, 2013a);
- Regulatory hurdles for industry in obtaining productive tilapia strains, such as GIFT; other countries have also used fiscal incentives to encourage private sector growth;
- The regulatory cost of doing business in Ghana has been a major complaint of these foreign investors. For example, a USD 500 000 minimum investment is required by the Ghana Investment Promotion Council, a level of investment which is considered high and restrictive for those smaller foreign investors who are interested in aquaculture.
- Tariffs are considered quite high in Ghana: import duties for imported feeds are 5 percent, but with other taxes and fees, between 20 and 30 percent of feed costs is reported to be the difference in the price of fish feed between its arrival in port and after it leaves the port.
- Quality control and inspection procedures need to be put in place to improve feed quality; this will require training of government staff and updated facilities (regular testing of feed ingredients and finished feeds, also for contaminants, such as mycotoxins and biological hazards, including salmonella);
- Pollution (environmental hazards of cage culture); chain actors complain about the weak monitoring and enforcement of regulations for water quality in the Volta river, threatening the sustainability of aquaculture there. On the other hand, value chain actors complained about the lack of capacity, both in terms of skills and equipment, to test, inspect, and certify their production systems, especially in the fast-growing tilapia sector. There is currently no quality control for chemicals in hatcheries, fish farms, and sales outlets. Medium- and large-scale farms are required to monitor water and sediment quality, but micro and small-scale farms have little environmental awareness, according to key informant interviews. Antibiotics and vaccine for tilapia against *Streptococcus* bacteria are currently not regulated.
- As a result, the misuse of antibiotics in farmed fish (as well as in poultry production) is contributing to rising resistance to the antibiotics in the pathogenic bacteria, constituting a serious public health risk (Donkor *et al.*, 2011; Donkor *et al.*, 2018; Kunadu *et al.*, 2018).

Opportunities

- Tilapia production in Ghana is generally profitable.
- Potential for growth of cage aquaculture on the Volta Lake and potential for export of tilapia to neighbouring countries. There has been import restrictions on tilapia for several decades. However, this ban is not actively enforced – there are regular reports of illegal imported tilapia flooding the market.
- In 2012, the government launched the Ghana National Aquaculture Development Plan (GNADP). However, production projected by GNADP has not been reached, and much of the shortcomings in the implementation of the plan was due to a lack of commitment from higher levels of government, manifested in lack of sustained investments and impactful policy, institutional, and regulatory reforms.
- A national aquaculture technical working committee made up of experts from different organizations was formed in early 2018 to help address some of the challenges in the sector.
- High consumer interest in restoration of catfish (Nigerian type buka's)

C. Rice value chain

Ghana's rice sector is diverse; the crop is cultivated in at least three ecologies, mainly by smallholders (MoFA, 2014). These ecologies include rainfed upland, rainfed lowlands/inland valleys, and irrigated lowlands. About 75 percent of Ghana's rice is produced under rainfed condition in the lowland/inland valleys (Bam, 2012) and the ten regions in the country that produce some rice. The Northern, Upper East, and Volta regions are known for high volumes production of rice in Ghana. In 2014, rice occupied about 11 percent of the total area used for cereal production, representing about 5 percent of the total arable land area of Ghana (SARI, 2014).

In Ghana, rice consumption has increased rapidly over the years and is annually estimated at about 45 kg/per person. This creates a wide gap between demand and supply, and has contributed to the scarcity of the grain and its high price. Consumption exceeds production by far, creating a huge deficit that is offset by large volumes of rice imports. In 2012, FAO reported an annual average production of 145 000 tonnes of rice whereas the prevailing annual consumption is about 800 000 tonnes. In order to meet the supply deficit, Ghana imports about 70 percent of its rice consumption requirement from Asia (China, Thailand and Vietnam) and the USA.

On a scale of 1 to 5, with 1 being the highest quality, rice from South-East Asian countries has a score of 2.4 while Ghanaian rice has a score of about 4.7. The gap in scoring is attributed to the quality of rice from the two sources and explains why consumers prefer imported rice.

Research has shown that the perceived poor quality of locally produced rice is a major constraint to its acceptability compared to imported rice, and hence the higher demand for imported rice over locally produced rice (Bam et al., 2013). In view of the quality gap, Amanor-Boadu (2012) suggests that policy focus be shifted from merely expanding rice production in the country to enhancing the quality of domestic rice with an objective of making it competitive on Ghanaian consumers' preference scale.

In recent years, the government has been working to reduce its agricultural imports by boosting the level of domestic production. The private sector has been seen to be playing key roles in this regard, and a number of State-led initiatives aimed at improving production have been initiated. MoFA projected a doubling of rice production by 2018 under a programme dubbed the National Rice Development Strategy (NRDS), instituted in 2009. Among other goals, the NRDS seeks to improve land and water management practices and access to government services as well as establish partnerships with the private sector (OBG, 2013).

The policies include the fertiliser subsidy programme and the creation of a better investment climate through the encouragement of public-private partnerships (PPPs).

The Planting for Food and Jobs (2017–2021) includes rice production (paddy) in its action plan (rice production increased by 39.8 percent from 2010 to 2016); however, Ghana is food self-sufficient in all the major staple crops except rice and millet (2017).

D. Pork value chain

Pork consumption in Ghana is on the increase. The growth of Ghana's domestic piggery industry has been impeded by several constraints such as inadequate information, lack of improved breeding stock, land limitations, rising feed cost and water availability. Production in 2011 was 19 072 tonnes produced pig meat (FAOSTAT, 2013⁸); and 26 107 tonnes in 2016.

The multiple roles of pig rearing and other indigenous livestock breeds are significantly acknowledged in different farming systems of Ghana, including the intensive, semi-intensive and free range systems. Pig keeping in residential areas is illegal according to the by-laws of the Greater Accra Region, unlike poultry and small ruminants.

Semi-extensive pig production occurs under the traditional smallholder practice in the rural areas. The system is based mainly on the indigenous Ashanti Black Forest pig which is found throughout the country and constitutes about 70 percent of the national pig population. Crosses between the indigenous and exotic breeds are also used in this system. The pigs are kept in pens and given minimal feed based on household leftovers, and in particular fresh and boiled cassava and cassava peels. In some cases, the pigs are allowed to scavenge for food.

The intensive pig production system is based mainly on the exotic Large White and Landrace breeds and their crosses. The system, practiced mainly in the southern areas of the country, is commercialized and may be classified as small-, medium- or large-scale (Oppong-Anane, 2010). Average farm size for small is 6; semi-intensive 15 and intensive 30. The average mature body weight is 70 kg and the dressing percentage is 60 percent (carcass weight: 42 kg) (Oppong-Anane, 2016; Livestock/Meat and Milk Value Chains Field Data, 2013; VSD, 2012).

The value addition potential of pigs is higher than that of the ruminants, as pork may be processed into more popular products. Their contribution to household food security and income as well as their social roles is well known; however, improvement of their productivity through cross-breeding, improved health and nutritional management are also concerns of many livestock development plans through national and international programmes (MoFA, KNUST).

The growth of Ghana's domestic piggery industry has been impeded by several constraints such as lack of improved breeding stock, the balance between the limitations and availability of land and water, rapid urbanisation processes, pollution and lack of managerial skills. The pork production has been affected by diseases: the PRRS virus, PCVD virus, Classical Swine Fever (CSF), viral diarrhoea in piglets, Aujeszky's disease or pseudorabies, foot-and-mouth disease (FMD), and of secondary importance, bacterial diseases.

Ghanaian entrepreneurs often enter this business based on a survival-driven motive without adequate knowledge and a business plan, leading to subsequent business failure. The two most important variables influencing intensive piggery are the price of pork (output) to the price of corn (input) ratio of 6:1, which is enough for pig farmers to break even. The major challenges for piggery entrepreneur

⁸ Estimation of the consultant for livestock/meat and milk value chains field study (2013).

farmers in Ghana are the attitude that they must have hands-on control of all aspects of their business; from management, accounting systems, sales and decisions making; incurring the cost of training or capacity-building of low-standard employees; lack of the technical know-how in pig management (feed formulation, heat detection, identifying and curing poor and sick animals, pricing, marketing, and drug administration) (Banson *et al.*, 2018).

Employing qualified or trained staff is essential as it results in more efficiency and effectively reduces the total cost of producing the pigs. The basic infrastructure required for pig farming, including water source, proper feed formulation and ration, proper supervision and market access, with appropriately qualified staff, are factors influencing its profitability.

A study on transmission (zoonoses) of diseases (Majekodunmi *et al.*, 2019) analysed the trade and the quality control (inspection by veterinary services). A first mode of marketing is through traders who aggregate pigs in large towns such as Bolgatanga where they are inspected by the veterinary services. A transportation permit is also required to transport trade animals between districts. They are then transported to Accra by truck in consignments of 80 to 120 pigs. In Accra, pigs are slaughtered, dressed and sold to pork retailers (and the occasional consumer). A few are sold live to local pig farmers as breeding or fattening stock. Pigs are available from northern Ghana only in the dry season between December and June. In the wet season, pigs cannot scavenge because of the risk of crop damage and farmers find it hard to feed the confined pigs.

Smaller numbers of exotic and exotic-cross pigs are raised in intensive and semi-intensive commercial or government farms in southern Ghana (Accra, Eastern and Central regions) and sold to Accra-based pig traders. They also undergo veterinary inspection before transport by truck to Accra.

Butcher practices: Gbawe is a dedicated pig slaughterhouse. There are two slaughter slab operators, each with facilities for housing pigs. Most of the pigs available for sale here come from northern Ghana. It is one of the few sites in Accra where customers can select their own pigs for slaughter. On average, fifty pigs are slaughtered at Gbawe Slaughterhouse every week. No planning provision is made for dedicated pig slaughter facilities by urban planning authorities. For religious reasons, these must be kept separate from facilities where other livestock are slaughtered.

The facilities at Gbawe lack proper infrastructure and personal protective equipment for staff. There are low standards of sanitation and hygiene. There is no pipe-borne water or proper sanitation facilities. Instead, water is sourced from an on-site well. Waste from pig pens and carcasses are disposed of at an open dumping site close by and there is significant presence of scavenging dogs and carrion birds.

Disinfectants are not used; in any case pigs are slaughtered and dressed on concrete flooring which, being porous, cannot be thoroughly disinfected. The only interaction with authorities is with the environmental services who inspect regularly and give some training on sanitation. There is no meat inspection by veterinary services.

Butchers are aware that cysts are 'unhealthy', and will not sell carcasses with cysts. The customer is advised to pick another pig and the seller bears the cost. However, there is little understanding of the origin of cysts or of their relationship to tapeworms or sanitation. Pork retailers select animals that appear healthy, with a thin layer of fat. Once slaughtered, carcasses are cut into pieces of about 2 kg. Offal is dressed and packaged separately. They are aware that cysts are unhealthy and reject such carcasses.

Roughly 20 percent of retailers steam these large pieces of pork at Gbawe before taking them home—often in the same vessels used for scalding pig carcasses. Pork retailers sell cooked pork (boiled, fried,

grilled or stewed) 50 percent at bars and 50 percent at food stalls. Food selling premises are regularly inspected by public health and environmental services. They must undergo annual blood and stool tests for food-borne diseases such as E. coli and cholera. They have a good awareness of food-borne diseases and food safety practices but no awareness of zoonotic disease transmission.

Technical information interviews compared

Poultry under commercial systems, indoors in deep litter or battery cage systems with a productivity of 250 eggs/year (high investment costs; purchase of DoCs, feed, vaccine and drugs and biosecurity practices).

Technical coefficients: The broiler birds attain 2 kg to 2.25 kg live weight at six to seven weeks and are ready for the market. Layer birds reach 16 weeks before pullets start laying eggs. Average industry egg production is 230 to 250 eggs per layer per year. average cost per kilogram of producing broilers in Ghana is estimated at GHS 15 (USD 2.7) for large-scale producers and it is higher for small-scale producers. The average weight of live ready-to-eat broiler birds is between 2 kg to 2.25 kg, and that of dressed birds ranges between 1.5 kg to– 1.9 kg.

Case	Production information from interview	Egg production per bird per year = 230–250 eggs 16 weeks before starting to lay = 4 months
Egg production Oppong in Berekum	2 000 chicken Producing 896 crates/month (30 eggs/crate) $896 \times 30 \times 12 = 322\,560$ eggs/year 2 000 birds laying = 161 eggs/year	@ 250 eggs/layer/year = 1 290 birds $1\,290 \text{ birds} \div 2\,000 \text{ birds} = 64$ percent of birds laying
Fertile Accres Farm in Greater Accra region	4 000 birds 400 broilers sold/year 400 crates per year = 12 000 eggs/year 500 kg feed per month at GHS 1 700	250 eggs/layer/year = 48 birds

Rabbit

→ It was estimated that GHS 5 292 (approximately USD 2 672) was needed as a start-up capital for a 40-doe unit meat rabbit farm in Kumasi Metropolis. The cost of breeding animals, housing and equipment, formed 12.47 percent, 53.97 percent and 24.87 percent, respectively, of the initial estimated capital. A net present value of GHS 5 910.75 (approximately USD 2 984) was obtained at the end of the fifth year, with an Internal rate return and profitability index of 70 percent and 1.12, respectively. Based on the analysis it was concluded that meat rabbit production is feasible in the Kumasi Metropolis of Ghana. The study recommends embarking on mass advertisement; farmer association and adapting to new technologies in the production process will help to enhance productivity and market opportunity as there are a few rabbit butchereries.

Case	Production information from interview	Gestation + weaning: minimum 2 months; mature Minimum 5 months
Rabbits Republic in Greater Accra Region	100 animals 40 rabbits sold per month $40 \times 12 = 480$	14 male and 86 female 27 animals/female/year sold $86 \times 27 = 2\,322 \div 12 = 193$ animals for market per month [minimum 5 months old]

Pigs

The average mature body weight is 70 kg and the dressing percentage is 60 percent (carcass weight: 42 kg) (Oppong-Apiane, 2016; Livestock/Meat and Milk Value Chains Field Data, 2013; VSD, 2012).

Lack of the technical know-how in pig management (feed formulation, heat detection, identifying and curing poor and sick animals, pricing, marketing, and drug administration).

Case	Production information from interview	Sexual maturity: 6 months, but mating at 8 to 9 months 2 reproduction cycles/year Average litter: 8 piglets
Oserby Ventures	150 pigs /year at 300 kg/pig	Average mature weight at slaughterhouse is 70 kg and dressing percentage is 60 percent
David Kuworu in Kumasi	Sales of only 12 pigs/year with no technical specifications	
Anderson in Greater Accra Region	Started in 2017 with 2 female pigs and in 2 years produced 1 000 pigs Currently 50 pigs with 4 to 5 mature to breed	Maximum production of 2 female pigs over 2-year time $= 2 \times 2 \times 8 = 32$ 2nd year = 2 + 16 (50% of 32 female piglets) $\times 2 \times 8 = 288$ $288 + 32 = 320$

Fisheries

EUROSTAT 2014 conversion of fresh fish to smoked fish: 1 kg smoked fish = 3.31 kg fresh fish.

Cost production of 1 kg of tilapia in cage culture (GHS 4 = USD 1) = USD 1.9

Feed conversion tilapia aquaculture fish production: Quantity (kg) of feed ÷ quantity of kg of fish produced: micro farms bad season: 1.5–1.3 (large farms: 1.3–1.0).

Feed conversion ratio (FCR) is a measure of how efficiently an animal converts feed to body mass, and it is determined by dividing the weight of feed fed by live weight gain over some time interval (feed/gain). Catfish grown from fingerlings to marketable size (about 1.5 pounds) in research ponds routinely exhibit an FCR of 1.8:1 or less. While this ratio may be achieved on an individual commercial catfish farm, it is rare. Averaged over the catfish industry as a whole, the farm-level FCR (feed fed divided by fish sold) is significantly higher, with a 5-year average of about 2.5.

FAO study feasibility aquaculture in Ghana: fish pond (no supplementary feeding, only chicken manure: mixed tilapia and catfish: grow-out period = 6 months, 2 cycles per year; fingerlings per square metre: 1 tilapia and 1 clarias; average weight of fingerlings: 10 g for tilapia, 20 g for clarias; mortality rate until harvest: 10 percent of initial stocking; monthly fertiliser application: 200 kg/ha; work: man-days per month: 5; annual total yield: 5 700 kg/ha.

Case	Interview information	FCR clarias: 1.8–2.5 Production per hectare: 5 700 kg Mortality rate: 10% Conversion fresh to smoked fish: 3.31
FAMMA Mick in Ashanti Region	1000 fingerlings; 1 pond 54 bags of feed @15 Kg= 810 Kg feed 500Kg fish sold = 50 percent mortality rate	@ 2/m ² = 500 m ² (0.05 HA) FCR: 810 Kg/500 Kg = 1.6
Wontesty Ventures in Ashanti Region	Sales 83 kg of fish per month 1 000 kg per year 5 bags feed per month = 75 Kg	FCR: 75 kg × 12 = 900 kg feed/1 000 kg fish sold = 0.9
Acquatic world industries in Greater Accra Region	Processing fish into fish sausages 50 kg fish = 78 kg sausages in packs of 300 g	50 kg fish minus bones; head give 78 kg sausage (added spices, etc. count for over 28 kg)
Jesko Farm in Berekum	5 fish ponds Production of 3 000 kg of catfish Feed: 240 bags at 15 kg = 3 600 kg	FCR: 3 600 kg/3 000 kg = 1.2
Benjelle company @ Kumasi	5 ponds producing 4576 Kg fish 6500 fingerlings 200 bags of feed@ 15Kg = 3000 Kg feed Produces 2200 Kg smoked fish	FCR: 3000/4576 Kg= 0.6 Conversion fresh to smoked fish: 2.08



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