International Labour Organization

SKILLUP
Upgrading skills for the changing world of work

Sector Skills Strategy

Agriculture Sector

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1. Introduction

1.1. The need for a sector skills strategy

Agriculture is a critical sector for the Ghanaian economy; in terms of the number of people employed in the sector, its role to meet local demand and its export potential.

If it is to maximize its potential it is critical that it has a skilled and productive workforce. However, evidence suggests that it lacks essential skills in a variety of occupational areas (COTVET, 2019).

Skills mismatch and shortages are a common challenge in many countries, where applicants and the existing workforce do not have the skills to meet organizational and sectoral requirements (ILC, 2013).

In response to this challenge, countries have been adopting a demand-driven skills development approach that aims to provide individuals with the current and future skills required by the labour market through more effective linkages between technical and vocational education and training (TVET) institutions and employers.

The Council for Technical and Vocational Education and Training (COTVET) in collaboration with the International Labour Organization (ILO) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has established Sector Skills Bodies (SSBs) for the agriculture, construction and tourism and hospitality sectors with the aim of establishing a demand-led TVET system in these sectors.

To support their establishment, the ILO worked with the SSBs to develop sector skills strategies through applying ILO's Skills for Trade and Economic Diversification (STED) approach in order to better align skills development to labour market needs. This document sets out that strategy and outlines a range of proposed actions to address the skill needs of the agriculture sector identified through the process by the SSB members.

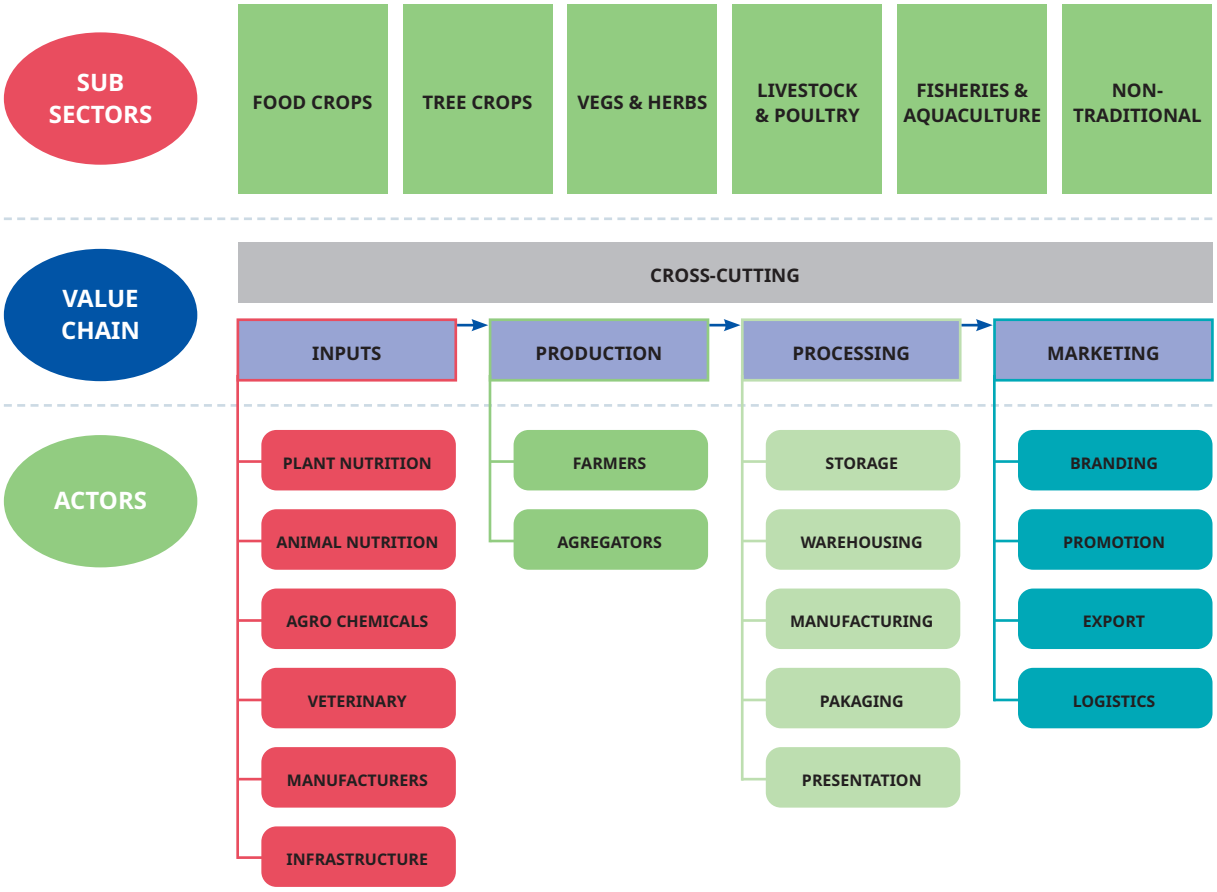
1.2 Sector definition and scope

The agriculture sector is concerned with the production and processing of crops, raising animals and harvesting fish and other animals in a farm or in their natural habitats.

The SSB has identified six sub-sectors:

1. Food crops
2. Tree crops
3. Vegetables and herbs
4. Livestock and poultry
5. Fisheries and aquaculture
6. Non-traditional, such as herbs and snail, apiary and mushroom farming
7. The value chain consists of inputs, such as chemical and veterinary services; production; processing and marketing.

▶ Figure 1: Agriculture value chain



Source: © AgroSkillsGh

1.3 Sector skills strategy aims and scope

The skills strategy has been devised by the Agriculture SSB and outlines the current and future skills and labour needs for the sector and sets out a comprehensive action plan to ensure that the supply of skills and labour meets those needs.

It aims to develop a skilled workforce capable of driving a modernised agricultural sector as an engine for economic growth and poverty reduction through employment, wealth creation and food security.

The strategy helps to support the transfer of those TVET institutions that currently are under the responsibility of the Ministry of Food and Agriculture (MoFA) to the Ministry of Education. It also underpins efforts to both increase domestic consumption and exports across the continent and beyond.

2. Profile and situation analysis for the sector and subsectors

2.1 Economic and workforce profile

According to the Ministry of Food and Agriculture in their Investing for Food and Jobs document (2018), Ghana's Gross Domestic Product (GDP) growth rate continued to decline from 14.0% in 2011 to 3.5% in 2016. This is attributed to low total factor productivity (low skill levels and a lack of capital investment in capita). Its contribution to GDP also continues to decline as the country witnesses faster growth in the service sector.

While agricultural output has been increasing, the sector's growth performance has been highly erratic. There has been a slow rate of growth over the period 2009–2017, averaging around 3.6%. Growth bounced back in the third quarter in 2017 as it accelerated to 10 percent compared to the growth of 2.8 percent for the same period in 2016. (MoFA, 2018)

The impact of the COVID-19 pandemic is yet to be assessed, but it is likely to make it more challenging and costly to export produce and similarly the cost of inputs such as feed and fertilisers are likely to rise. At the same time, imported food is likely to be restricted and cost more, which may increase the demand for domestic products.

Exploring the six sub-sectors in more detail:

Food and tree crops and vegetables and herbs

Approximately, 157,000 sq km or 69% of available land is used for agriculture, of which 1.7 ha is used for cocoa production and a further 1.7 ha for cereal. Small-scale farms averaging 1.2 ha make up 80% of agricultural production. These are often associated with manual labour and basic technology. Less than 15% of farms are considered to be large scale, yet they produce approximately 50% of cash crops, exports and livestock (Oxford Business Report, 2018). Both large and small farms have different labour market and skill needs and required different TVET support.

Maize is the most widely consumed staple crop, accounting for approximately 50-60% of total cereal output. The sector's main cash crops include cocoa, cotton, coffee, rubber, palm oil and coconut (Oxford Business Report, 2018) Cocoa products continue to dominate exports, accounting for over 73% of total exports in 2018.[1] There are approximately 800,000 cocoa farmers, of which the majority are small businesses (Oxford Business Report. 2018). In July 2019, Ghana and the Cote d'Ivoire, which together account for nearly two thirds of global cocoa production, announced a "living income differential" of $400 per tonne of cocoa for the 2020/2021 season in an effort to combat widespread farmer poverty. This replaced an earlier proposal for an outright floor price of $2,600 per tonne. This resulted in global price rises for cocoa.[2]

Cashews generate approximately $276m annually. Eighty-eight percent of cashew farms are also relatively small (Oxford Business Report, 2018).

Cereal production is chiefly maize, rice and sorghum. Aggregate cereal production in 2015 amounted to approximately 2.7m tonnes, made up of maize (approximately 248,000 tonnes), rice (330,000 tonnes) and sorghum (248,000 tonnes). Climate change and reduced rainfall has decreased the production

1 ITC trade data

2 Ivory Coast, Ghana pricing agreement causing a 'spike in cocoa cost' – Mondelez, https://www.reuters.com/article/mondelez-intl-cocoa/ivory-coast-ghana-pricing-agreement-causing-a-spike-in-cocoa-cost-mondelez-idUSL2N24V1M3, accessed on 5 May 2020

of maize by between 40-50 percent in Brong-Ahafo region alone (Oxford Business Report, 2018), reinforcing the need for greater irrigation techniques.

Livestock and poultry

The livestock and poultry sector comprises cattle, pigs, large and small ruminants and poultry. The livestock sub-sector recorded the highest growth of any agricultural segment in 2015, expanding by 9.3%. Whilst commercial poultry and pig farms are the primary income earners, other livestock are also raised to supplement income on traditional farms. Between 2010 and 2015, poultry increased by nearly 50%. There are approximately 20 large operators in Ghana, which largely produce eggs. Improvements in technology has been attributed to the increased growth in the sub-sector, but the cost of feed means that imported chickens are cheaper and therefore more popular (Oxford Business Report, 2018)

Fisheries and aquaculture

Seventy percent of Ghana's fishing output came from marine production, 20% from inland production and 10% from aquaculture (Oxford Business Report, 2018). According to the GSS, Ghana's fishing sector grew by 5.3% in 2015. However, growth is being undermined by over-fishing, caused by too many boats and unofficial fishing from Chinese vessels. (Oxford Business Report, 2018) If not tackled, over-fishing may result in a ban from the European Commission.

The fisheries support 135,000 workers in the marine sub-sector alone. Ghana's fisheries contribute 4.5 percent to annual GDP, and indirectly support the livelihoods of 2.2m people or 10% of the Ghanaian population. Fish farming has grown from 1,200 tonnes in 2005 to 38,500 tonnes in 2014, spurred by the high prices of tilapia, the fast expanding cage farming in the Volta Basin and the high level of government interest and commitment. Tilapia contribute to over 90 percent of the total aquaculture harvest. In recent years, according to members of the SSB, fish farming has been adversely affected by a number of diseases which has depleted stock. Poor skill levels and a poor inspection regime has contributed to these problems.

The Government has placed aquaculture as one of the top priorities in the country's development agenda and substantial support is being given to fish farmers in various aspects of the industry. Aquaculture is also being promoted through restocking programmes in Lake Volta, reservoirs and other water bodies, and the rehabilitation of hatcheries and aquaculture demonstration centres (MoFAD 2016).

Non-traditional

In 2013, Ghana National Export Strategy for the Non-Traditional Sector was developed with the aim of achieving annual growth targets reaching $5bn by 2017. However, it is still to be fully implemented. It has four strategic outputs:

1. Impediments, uncertainties, risks and costs of production and export of goods and services reduced
2. Institutional capacity and resources for export value chain infrastructure development and support service delivery enhanced.
3. Capacity of Ghana Export Promotion Authority, Metropolitan, Municipal and District Assemblies enhanced to promote export so that every District is able to develop at least one significant export product preferably from the Priority Product List.
4. Institutional capacity for export-oriented human capital and resource development expanded and strengthened to enable exporters to keep abreast of modern trends and demands of the contemporary international market where competition is fierce among the emerging economies.

The strategy identified a number of priority products (some of which appear in other categories such as fish and cocoa): fresh chilled/frozen and processed fish (e.g. canned tuna,fresh/ chilled fish, prepared fish); vegetable oils and seeds, tree crop oils and seeds (e.g. raw and processed shea/karite nuts,

cashew nuts, oil palm, groundnuts, soya, sunflower, etc.); fresh and processed fruits and vegetables (e.g. fresh pineapples, banana, mangoes, papaya, citrus, chillies, melons, cut fruit, tomato paste); root crops such as yams, cassava, and sweet potatoes; grains and legumes such as rice, maize and cowpeas; natural plant product preparations/nutraceuticals (medicinal plants and parts, culinary herbs, high nutrient plants, etc.); natural rubber; rubber products and processed cocoa products and products of the creative arts industries.

2.2 Employment

According to MOFA's Investing for Food and Jobs report (2018), over 44.7% of the Ghanaian workforce are employed in the agriculture sector. The sector is still predominately made of subsistence farming and as such whilst a large number of people are classified as working in the sector, only a small percentage do so in the sense of a formally employed workforce.

The Labour Force Survey (2015) estimates that 9,263,346 work in the sector, of which 53.8% are female. Whilst women represent the majority of the workforce, it is suggested that they tend to work on more unproductive areas of the sector (Oxford Business Report, 2018). This is supported by the LFS (2015), which found that 55.7% of 2,949,805 skilled agriculture, forestry and fisheries workers are male.

Almost two-thirds (65.8%) of persons who work as skilled agriculture/fishery workers would not want to change jobs. This could be interpreted as a restriction to labour mobility as many would not possess the necessary skills to gain employment in other sectors. Just under one-third of employed males who work as skilled agriculture/fishery workers (31.1%) would want to work as plant machine operators and assemblers (LFS, 2015).

A breakdown of the Labour Force Survey (2015) indicates that nearly a third of skilled agriculture and fishery workers (32.3%) are aged 15-24 years old and a further 22.7% are aged 25-35. This suggests that the sector is indeed attracting younger workers despite concerns that the sector has an ageing workforce.

The LFS (2015) identifies that there are 2,203,965 households in the sector, of which 1,538,003 produce crops, 2,157,928 livestock and 2,180,905 game. This suggests that most farming households produce a mix of different types of agricultural output, nor do the majority of households work in the sector on a permanent basis. Of 744,645 households questioned, only 94,995 (8.7%) work in the agriculture sector on a permanent basis, which means that for many agriculture provides an extra income and subsistence, rather than full employment. The economic impact of COVID-19 may see workforce numbers increase in the short-term as employment in other sectors fall as a result of the economic impact of the pandemic and some people to return to their families.

In terms of employment the LFS (2015) found that 2,138,355 work in crops, 2,943,696 in livestock and 2,988,896 in game. The LFS (2015) also identifies that 29.7% of migrants are working in the agriculture sector. Agriculture has the highest percentage of migrant workers of any sector in Ghana.

2.3 Drivers of change, enablers and key major trends and their likely impact on employment

There are a number of key drivers that will affect the demand for labour and the types of skills required across the sector. These drivers are predominately interconnected and interventions to address specific drivers are liable to have wider effects.

Increased opportunities to develop new markets internationally.

The Investing for Food and Jobs report sets out an Agenda for Transforming Ghana's Agriculture. It sets out a wide range of interventions to address factors inhibiting growth and employment in the sector.

The report reinforces the importance of investing in land, water and air transport infrastructure to increase trade within the continent and outside. It also sets out interventions to address:

- Inadequate agribusiness enterprise along the value chain
- Weak regulatory regime to enforce standards.
- Poor marketing systems

Similarly, a number of programmes such as the Planting for Food and Jobs, Planting for Export and Rural Development and Youth in Agriculture provides opportunities to increase the productivity and capacity of existing producers.

There is a need to increase productivity in the sector by farmers having broader agri-business skills to increase their yields, grow produce that is best aligned with the climate in their region, meet export standards and process produce to add value and profits.

The African Continental Free Trade Agreement and existing arrangements with the European Union have the potential to open up markets for producers across Africa and beyond and it is important that farmers can maximise these opportunities by having the appropriate skills and knowledge.

Opening markets are liable to have a greater impact on larger producers and those processing an end product. This has the potential to increase the demand for skilled labour.

It also requires officials and experts in MoFA and the Ministry of Fisheries and Aquaculture Development (MoFAD), as well as those working in District Offices, to have the appropriate skills in international trade and standards, logistics, inventory control and packaging and labelling as well as the alignment of research and agri-business skills.

Action to increase opportunities to access markets would also benefit from greater alignment across different agencies in each region. This could help to increase specialisation and to align TVET provision fully with this strategy.

Biodiversity and climate change

Climate change is resulting in the need for greater biodiversity and the need to experiment and use different varieties to address climate change and an expanded dry season and erratic rainfall.

There is a need to be trained in new techniques, new varieties of crops that offer greater resistance to climate change and cost-effective irrigation systems. This will impact the existing workforce that will need to be skilled in these areas. Similarly, new entrants will also need to develop the appropriate skills and knowledge in the sustainable use of soil and water resources, the diversification of farming systems and new cultivation techniques for crops resistant to climate change.

Whilst farmers need to understand the benefits of irrigation techniques, there is also a demand for irrigation experts to increase farm irrigation across the country.

Extension officers and trainers at TVET and tertiary education institutions will also need to have extensive knowledge and skills in these areas.

Financial drivers

A lack of access to finance is hampering investment and innovation. Credit is often only available short-term and this is not suitable for the agricultural sector that may not see any income generated until the end of the season. The Investing for Food and Jobs report (MoFA, 2018) outlines plans to help producers access long-term credit and start-up capital, but as yet this has had little effect.

Farmers need to possess greater financial knowledge to take advantage of available credit. They will also need to be skilled in the importance of key purchases such as farmer insurance, storage and planting materials and certified seeds.

Investment in mechanisation

A key challenge that often requires significant financial investment is equipment and machinery to increase mechanisation. Too often the lack of credit means that farms cannot afford to buy new equipment, which reduces their long-term financial potential and productivity gains. In the short-term, increased use of machinery will help scale up farms to become more profitable, but in the long-term, the adoption of more mechanised production is likely to increase farm sizes and reduce demand for labour.

Ageing farmer population and declining youth interest in agriculture

Despite the findings of the LFS, which suggests a relatively young workforce, members of the SSB raised concerns that the existing sector workforce is ageing and if an insufficient number of people consider employment opportunities in the sector it will result in labour shortages. The sector is not seen as an aspirational sector to work in and often people stay in the sector because of a lack of other opportunities and to support their families.

The lack of available credit makes it difficult for agriculture students who complete their course to establish their own farms.

Low transfer and uptake of research findings by stakeholders

The need to adopt research findings to support the implementation of new techniques and varieties is critical, but the current adoption is extremely low according to the Investing for Food and Jobs report (2018). There needs to be greater awareness of producers to understand emerging research and the impact it could have on production on livestock, animal husbandry and disease monitoring.

There is a critical need for research and best practice to be shared across officials and for it to be fed into policy development and implementation, but also for this to be shared with TVET institutions to ensure that teachers and lecturers have this knowledge and that it is delivered to extension officers and students.

Similarly, there is a need to increase the agricultural research capacity within the country to increase disease monitoring and surveillance systems and genetic material of livestock species. This is especially the case in the area of fisheries and aquaculture. This could increase the demand for scientists, technicians and researchers.

3. Profile of major occupations and key skills in the sector

Given the size and scope of the agricultural sector, there are a large variety of core occupations found in the sector. They can be organised into four broad categories: top managers; professional and middle level managers; technicians and associate professionals; and elementary occupations.

1. High level managers: High level managers include business development managers, technical directors, and farm owners. Their roles include general and strategic management of the organisation. Even though their roles are managerial in nature, they also require, among others, technical competencies such as knowledge of basic farming, data collection techniques and agribusiness incubators for enterprise development. In addition to these, soft skills for managers, such as problem solving, time management, leadership, interpersonal skills and creativity to develop innovative solutions to problems at work are also required.

   These types of management roles would be typically found in larger businesses of which there are few in the sector. It is unlikely that many small producers would have these range of skills nor would they be qualified to a managerial level.

2. Professionals and middle level managers: The professional and middle level occupational group comprises veterinarians, plant breeders, extension officers3 and agricultural technologists, agronomists, agriculture economists and other occupations at the supervisory level. Their roles are mainly technical advice, but also involve direct supervisory and technical oversight on operations and the provision of reports to management. The following competencies, among others, are required to enable them to perform efficiently: knowledge of plant varieties, disease prevention, crop maximization, animal anatomy, problem-solving skills, time management skills, leadership, interpersonal skills and creativity. Computer literacy and knowledge of agribusiness incubators for enterprise development are also required.

   These specialist roles are required in the provision of inputs for the value chain and are higher-skilled occupations both in public and private sectors.

3. Technicians, associate professionals and skilled operators: agricultural technicians require technical competencies related to the area and can be more specialised such as hatchery technicians, occupational health and safety technicians, operators of agricultural machines and equipment, fish cage construction technicians, feed mill technicians, brooder house technicians, and chemical applicators. Key roles of this category include operational work at the farm level while reporting to the supervisors. They also exercise direct supervision of workers in elementary occupations, and often involve training. Key competences include, among others problem solving skills, time management skills, computer literacy, equipment operation and maintenance, knowledge of food safety and standards, data collection, team work and compliance, interpersonal skills for supervision of other workers, creativity, monitoring and evaluation skills.

   These roles require special training in TVET and tertiary education institutions and are typically found in larger businesses, but also in the 'input' part of the value chain. They are often specialist roles with their own separate career pathway.

3 In Ghana, these are workers that have been schooled on good agricultural practices in the cultivation of selected crops. Agricultural extension is the application of scientific research and new knowledge to agricultural practices through farmer education. Source: https://en.wikipedia.org/wiki/Agricultural_extension

4. Elementary occupations. These include fishmongers, farmhands, herdsmen/women, nursery assistants, harvesters and cleaners. Key roles include direct engagement on farm work following the operational guidelines determined by management and under the supervision of technicians. Key competences include but not limited to: problem solving skills, time management skills, equipment operation and maintenance, food safety and standards, creativity, computer literacy, teamwork, compliance and interpersonal skills.

   The majority of the sector workforce are found in elementary occupations, often the breadth of skills are learnt informally, based on experience.

4. The supply of skills:

4.1 Key institutions, formal programmes and qualifications relevant to the sector

There is a wide array of agricultural-specific training available at different educational levels:

Pre-tertiary

Many of those working in elementary occupations have not finished their schooling or have completed junior and senior high schools. As a result they usually have lower literacy and numeracy levels and undertake no formal training before entering the sector. At the pre-tertiary level, farm institutes and technical institutes provide training for the majority of the elementary level occupations.

Agriculture colleges offer a variety of programmes including Diploma in Agriculture, Agricultural extension and Certificate in General Agriculture. Notable colleges include Kwadaso Agricultural College, Animal Health and Production College (Pong-Tamale), Damango Agricultural College, Ohawu Agricultural College, Ejura Agricultural College.

Technical and farm institutes such as Adidome Farm Institute, Asuansi Farm Institute, Leventis Foundation and Wenchi Farm Institute play key roles in the provision of mid-level and lower technical training for the sector.

There are three courses available to develop the competence of extension officers: a two-year Certificate in Animal Health, a two year Certificate in General Agriculture and a three-year Diploma in Animal Health. The Certificate in Animal Health includes a broad content including non-infectious diseases, basic veterinary practices, laboratory diagnostic techniques, principles of aquaculture, introduction to farm management, basic principles of surgery and obstetrics, as well as agricultural law and policy and rural sociology and gender issues. The Diploma is more stretching and includes poultry, diary and pig production. The General Agriculture Certificate includes family nutrients and practical cookery, agribusiness venture management, root and tuber production, farm business management, pig poultry management.

Tertiary

Tertiary education supports the development of skills for technicians and associate professionals and professionals and middle level manager occupations.

All ten technical universities/polytechnics offer Higher National Diploma and Bachelor of Technology programmes in agricultural engineering, agri-preneurship, and food and post-harvest technology.

Traditional public universities and selected private ones offer Undergraduate and Post Graduate level programmmes in Crop Science, Agriculture Economics, Agric Engineering, Agronomy, Agribusiness and Veterinary, among others. These include the University of Cape Coast, Kwame Nkrumah University of Science and Technology, University of Development Studies, University of Ghana, Methodist University, Central University among others.

4.2 Enrolment data

The available data on enrolments focuses heavily on those courses that prepare someone for entry into the sector. Figures from MoFA indicate that in 2019 there were 2,099 students enrolled at agriculture

colleges. The majority of these students were studying for the Certificate in General Agriculture. Enrolment on courses were down from 2018, with the exception of the Certificate in Animal Health.

▶ **Table 1: Students enrolled on agriculture courses (2018–2019)**

Course	2018	2019	Total
Certificate in General Agriculture	690	469	1,159
Certificate in Animal Health	299	166	465
Diploma in General Agriculture	176	203	379
Diploma in Animal Health	50	46	96
Total	**3,233**	**2,903**	**2,099**

Source: MoFA, 2020

Figures from COTVET records enrolments on agriculture courses in TVET institutions from 2015-2017. In 2017, there were 1,091 students enrolled on agriculture courses (see table 2). This is more than double the figure in 2015.[4]

Across the three years, only 14.2% of agriculture students were female

▶ **Table 2: Students on agriculture courses (male and female) (2015-2017)**

2015			2016			2017		
Male	Female	Total	Male	Female	Total	Male	Female	Total
434	102	536	883	109	992	929	162	1,091

Source: COTVET, 2020

There are no data to show the amount of training that had been undertaken with the existing workforce. Given the amount and range of skill gaps in the sector it will be crucial to have a better understanding of this and the collection of data should be a priority for the SSB.

4.3 Workbased and informal learning

Training for those in elementary occupations is often informal, workbased learning, which is undertaken on-the-job.

Depending on the size of the business, training is delivered either by farm owners or supervisors. In larger operations, training is delivered through an informal apprenticeship system or by formal sector trainers, including agricultural extension officers. These trainers provide specific training to address specific skill needs.

After such training, team leaders or champions are identified to facilitate the practice of the acquired skills. A similar approach is used in the training of staff hired from within the industry but requiring the development of more specific skills.

Smaller farmers get support from extension officers and community engagement, but it is often ad-hoc and infrequent.

4 These figures do not include enrolments on courses in tertiary education

5. Supply side challenges and constraints

5.1 National skills policy and strategy

Technical and vocational education and training is delivered at the secondary and tertiary education levels. Ghana has good literacy rates compared to the region as a whole. Literacy rates for those aged 15-24 years is 92.5% and 79.0% for those aged over 15 years.5 Since September 2017, secondary education has been free and as a result net enrollment has increased, but enrollment rates still pose a challenge. In 2013, net enrollment rates were 52.7%. This had risen to 57.24% by 2019. 6

A review of the Ghanaian TVET system found that the current technical vocational education and training system neither reflects the current skill needs of employers, nor is it anticipating and developing the future skills that Ghanaian businesses and the Ghanaian economy will require in the future (COTVET, 2018).

The 2018-2022 Strategic Plan for TVET Transformation produced by COTVET identifies a number of critical challenges that need be addressed:

1. Poor linkage between training institutions and industry;
2. Deeply fragmented training landscape and lack of co-ordination among multiple TVET delivery agencies;
3. Multiplicity of standards, testing and certification systems;
4. Low quality of instruction, due to inadequate instructor training and lack of instructional support and TVET infrastructure;
5. An informal TVET system that has been neglected and detached from the formal sector;
6. Poor public perception of TVET, which is seen as good for only the academically weak students.

A lack of sustainable funding and poor partnership linkages between employers, TVET institutions and government is deemed a central reason for many of these problems.

The Plan aims to overcome many of these challenges by 'transforming Ghana's labour force to enhance productivity and performance'. It has five policy objectives:

1. Governance and management of TVET: to provide a coherent legal and institutional framework for the TVET sector which is accountable and responsive to the demands of the private sector and other stakeholders
2. Increased access: to ensure equitable access and promote gender mainstreaming in TVET
3. Improving quality: to ensure quality assurance in TVET according to internationally accepted standards
4. TVET financing: to develop a sustainable source of financing for TVET
5. Environment sustainability: to green TVET for environmental sustainability

The National Commission for TVET Bill is currently going through the Parliament. It makes provision for the voice of employers and private sector industries to be represented through a new National Commission for TVET. It will also have representation from relevant ministries, educational agencies and public and private educational bodies.

5 http://uis.unesco.org/en/country/gh viewed 15 May 2020
6 http://uis.unesco.org/en/country/gh viewed 15 May 2020

The object of the Commission is to regulate, promote and administer technical and vocational education and training transformation and innovation for sustainable development.

The Bill outlines provision for five standing committees of the Board which includes the Sector Skills Committee. SSBs may be sub-groups of this committee.

The Bill also outlines the creation of a TVET Service to manage, oversee and implement approved national policies and programmes relating to pre-tertiary technical and vocational education and skills development.

The TVET Service will be responsible for all the existing government pre-tertiary technical and vocational institutes currently under various ministries and agencies, such as the Ministries of Education; Employment and Labour Relations; Gender, Children and Social Protection; Youth and Sports; Trade and Industry; Food and Agriculture; Trade and Highways; Transport; Local Government and Rural Development.

There is widespread concern that the Ministry of Education will find it difficult to take responsibility for the wide range of institutions currently under MoFA given their existing wide remit. Similarly, there is concern that the lack of subject expertise in the Ministry of Education will make it difficult for them to manage agricultural-specific TVET institutions and that some of the recent reforms to refresh the qualifications and increase practical delivery will be lost. If the policy change is implemented, the SSB will have an important role to ensure that the transition to the Ministry of Education is smooth.

The TVET Service Board will include representation from the National Commission for TVET, Association of Ghana Industries, Ghana Employers' Association and the Ministry of Trade and Industry.

Currently, there is limited labour market information available that provides detailed projections of occupational demand. As a result, it is difficult to ensure that the availability of provision is effectively aligned to these needs.

5.2 Governance and stakeholder coordination

Private and public tertiary level TVET training providers delivering agriculture-oriented programmes are administered by the board of governors/councils of their respective institutes. These are overseen by the Ministry of Food and Agriculture.

Curricula are approved by the National Accreditation Board, however there is currently minimal sector input into the scope, content, delivery and assessment of a programme. Employers are often asked their opinion of a proposed course, but are not engaged in its development or delivery. In most TVET institutions there are currently no sector advisory bodies to help shape the content and delivery of programmes. It is important that these reflect the breadth of the sector and incorporate critical areas such as aquaculture, which may not always be considered.

There is a strong desire for regions to increase their focus on specific crops to reflect the soil and climate. With greater co-ordination between MoFA and MoFAD, district officers, research agencies and TVET institutions it is felt that yields and productivity can increase and that there can be a much better alignment and focus on meeting export standards and targeting specific markets. This will require considerable policy engagement and it will be important that relevant officials have the necessary capacity and skills to maximise these opportunities.

5.3 Funding

Funding of TVET institutions in the agriculture sector is through government budgetary allocations and interventions; interventions from development partners and fees paid by students. At the tertiary level, the cost of training is shared between students and government, with students contributing the largest portion, especially for practical training. Government contributions cover the cost of lecturers and other administrative costs of the institutions.

At the pre-tertiary level, students in training institutions under the Ghana Education Service benefit from free tuition, food and accommodation. However, the cost of practical training is borne by students, with minimal support from government. As a result students are unlikely to undertake extensive practical delivery.

Institutional Production Units (IPUs) are used as means of internal funding in larger institutions, for example by hiring out equipment. However, the commercial opportunities are not being fully maximised to allow them to invest in new equipment and raw materials and increase practical delivery.

The lack of credit is seen as a challenge and an area to explore in order to test the possibility and benefits of a greater linkage between students completing their course and their access to finance to allow them to rent or buy their own land and invest in seeds, fertilizers, feed etc.

5.4 Relevance of curriculum and qualifications

Recently, MoFA has made substantive changes to the content of courses being delivered to ensure that they reflect current practice and to ensure that 80% of delivery is practical.

It may be too soon to assess the impact of these reforms as it is generally felt that the curriculum is too theoretical and is not sufficiently broad to equip farmers with the broader agri-business skills they will require to be successful.

Available courses do not fully reflect labour market needs, so for example there is little focus on fishery and aquaculture, despite its importance and its need for more technicians in the field to increase disease prevention and carry out inspections. There are similar gaps for irrigation and occupations related to critical inputs such as seeds and fertilisers.

Curriculum development is slow to take into account new approaches to adapt to climate change or more productive agricultural techniques. A more transparent flow of best practice and latest research findings needs to put in place across the various ministries, agencies and TVET institutions.

5.5 Delivery and assessment practices

There are inadequate up-to-date or state of the art equipment and laboratories for practical training. Too few students have opportunities to develop practice skills, although recent reforms implemented by MoFA may address this.

Teachers and lecturers often lack up-to-date experience. The onus has been on teachers and lecturers gaining academic qualifications at a higher level, rather than ensuring that the teacher or lecturer has the required experience of working in the sector. There are few examples of continuous professional development where teachers or lecturers have opportunities to refresh their skills and knowledge in the workplace and benefit from the transfer of the latest research findings and international best practice to feed into the delivery and the future content of courses.

There is little use of remote learning and support, from simple advice and guidance to short training videos and virtual training and instruction. With the increased use of mobile telephones, this is an important area to wide access.

5.6 Access to training, industry-institute linkages and support for workplace learning

Extension officers provide support and training to farmers. However, the allocated areas for an extension officers and the difficulties of transportation means that their impact is often limited. Better engagement with TVET Institutions could extend the support for farmers and help increase the outreach of TVET institutions, particularly if they were able to be more innovative in their engagement and delivery. Examples would be selling seeds and fertilisers, hiring out machinery and providing short and

relevant training around its use. Similarly, working with community partners to provide short burst of periodic training.

Similarly, testing the impact of existing best practice such as farmer field schools can help increase yields and profitability. The SSB is well placed to work with partners to pilot different approaches, assess their impact and if success to facilities their adoption. Currently, there are a wide variety of pilots, but few become sustainable when funding ceases. The SSB could help ensure that best practice is communicated and work with local communities to ensure impactful interventions can continue beyond their initial funding.

5.7 Gender equality

Women make up the majority of the workforce and it is important that they have the same opportunities for skills development. This is often not the case, as many combine farming with childcare and other commitments. This means that TVET institutions and other organisations providing support and training need to be flexible in their approach and consider the best time of day to deliver training, the gender of the trainers and the types of barriers that need to be overcome to encourage engagement.

6. Vision for the future of the sector

The SSB through the STED approach devised a vision for the sector which provides a future focal point for everything to become aligned:

A modernised agriculture culminating in a structurally transformed economy and evident in food security, decent employment opportunities and reduced poverty.

It will be important that the sector has a skilled and productive workforce to meet the sector's vision and that the TVET system adapts to meet the needs of the sector in developing the skills of the future workforce and supporting the development of the existing workforce.

To realise the vision, the SSB will develop appropriate key performance indicators to assess progress and ensure it remains within scope of its terms of reference.

7. Gaps in the capabilities and skills needed to achieve the vision for the future

The paucity of labour market information makes it difficult to assess the demand for labour in coming years, but also the types of skills that maybe required and the types of skills currently lacking within the sector workforce. Developing a mechanism to collect timely labour market information for the sector is critical in order to create an effective demand-led TVET system.

In the absence of these mechanisms, labour shortages, skill shortages and skill gaps have been identified through an analysis of the recent skills gaps analysis undertaken for COTVET (2019) and consultation with members of the SSB.

7.1 Labour shortages

Members of the SSB found it difficult to identify specific occupations that were experiencing labour shortages. Despite the findings of the LFS, the general view was that there were too few young people entering the sector to directly replace older farmers. However, encouraging new entrants into the sector could provide an opportunity to increase productivity through improved agriculture practices supported by skills development.

There are specific labour shortages in fishery and aquaculture for professional and technical occupations in particular those roles that can provide advice on disease prevention and those that inspect fish farms and ensure compliance with standards.

Similarly, there is a need for more irrigation specialists within the country to increase the access to irrigation systems.

Capacity also needs to be developed within Ghana to produce animal feed, fertilisers, seeds and other critical inputs. This supply needs to be incentivised to reduce the demand for imported products and to reduce the cost of producing them. Targeted training needs to be provided as part of this approach to develop the specialist skills required of those working in this area.

7.2 Skill shortages

SSB members did not report specific skill shortage occupations other than in fisheries and aquaculture. However, they did identify that those entering the sector often lack practical skills and wider agribusiness skills including understanding markets, meeting standards and technical knowledge and skills to increase yields and productivity.

Those entering the sector also need to have more knowledge of sustainable energy, in particular solar power and how it can be used to reduce costs and increase efficiency.

7.3 Skills gaps

There are a large range of skill gaps identified for farmers and given the extent of these the challenges are how best to prioritise them, how best to ensure access to delivery and how best to follow up to refresh skills and provide ongoing support.

Farmers and farm employees

During their STED Technical and Policy workshop, members of the SSB identified a number of key business capacity gaps and the types of skills lacking. These were adapted during the development of

a strategy and provide an initial basis onto which a development matrix can be developed to ensure the supply of relevant.

▶ Table 3: Gaps in the capabilities and required skills of farmers

Key business capability gaps	Skills needed to attain vision
Agronomy and agriculture operations	Yield maximisation, use of fertilisers, multi-crop approach, disease prevention, climate change adaption, irrigation, storage, mechanised techniques to increase productivity and efficiency
Market knowledge and compliance with market standards	Understanding of key markets for specific products, requirements to meet specific standards, quality control
Post-harvest and agro-processing	Processing techniques to add-value to raw products
Sales and marketing	Customer service, sales and marketing skills, especially for entrepreneurs and business managers in businesses of all sizes
Brand management	Marketing skills (for brand development and ongoing brand management), knowledge of packaging design,
Compliance with regulatory requirements	Knowledge of quality standards for quality assurance, food safety and regulatory compliance.
Growing agricultural businesses	Agri-business strategy and development, knowledge on agri-business start-up and incubation, and computer literacy skills, especially for entrepreneurs, managers and professionals
Financial management	Cash flow, accessing credit, bookkeeping
Human Resource Management and day-to-day people management	Interpersonal skills, supervisory skills; knowledge on: performance management, appraisal, training strategies and management, hiring and placement, human resource strategies, and career management (with succession planning), Human capital management
Information technology applied to management and operations	All occupations need the relevant information technology skills for their work. These may be basic computer skills, such as office packages or medium computer skills, such as CRM – customer relationship management software, HR software and other software applications that may require certain configurations or data entry to support business processes.
Supply chain management	Technical competencies related on agro chemicals, nursery stock, seed, and agro equipment and machines.

Core work employability skills

Gaps is core work skills cut across all of business capability gaps listed above. These include gaps in problem solving skills, time management, project management, innovation and creativity, lateral thinking, interpersonal skills.

The range and depth of skills outlined above will vary between large and small businesses.

Government officials and specialists

Given the extent of the support required to increase productivity in the sector, it is critical that government officials in ministries and district offices, extension officers and specialists have the requisite skills and knowledge to advise ministers, implement appropriate policies, provide the right advice and be able to communicate this clearly and appropriately.

The following skill gaps were identified:

▶ Table 4: Key occupational groups and required skills

Occupational Groups	Skills needed to attain vision
Officials in ministries	Interpreting and communicating research findings, international best practice, implementing policy across multiple agencies, monitoring and evaluation of policy implementation, speed of reaction to new evidence and research, communication and engagement skills with employers, industry partners and community leaders
Engineers	Safe and efficient use of the latest agro equipment. Soft skills required by managers including problem solving skills, time management skills, supervisory skills for effective monitoring and evaluation, innovation and incubation skills and computer literacy.
Officials at Research and Development institutions	Communication skills to communicate research findings and data, simply and visually
Specialist in extension services	Agri-business, agronomy, aquaculture etc., skills in training and advice, small business management advice, Good Agricultural Practice (GAP), knowledge of public-private partnerships and ICT *

* Given the existing breadth of courses relevant to extension services, there needs to be a review of the curriculum available for extension officers and whether farmers would benefit from more specialist support from specialist extension workers that could address more effectively:

- Develop more productive farms
- Provide more targeted support for the aquaculture sub-sector
- Adapt practices to climate change

8. Recommendations on meeting priority skills needs and gaps

8.1 What skills are needed and where and who should deliver them

There are four key skills priorities that need to be addressed in the agriculture sector:

1. Developing the skills and knowledge of existing farmers and where relevant their workforce
2. Developing the skills and knowledge of government officials and specialists
3. Ensuring that effective provision is in place to address skill shortages occupations, including technical and professional occupations in aquaculture and those providing much needed inputs into the sector e.g. seeds, feed etc.
4. Ensuring that those students on full-time agriculture-related provision leave with the breadth of practical skills and access to credit and support

All four priorities require a strong and co-ordinated public-private partnership with key ministries, industry associations, employers, employee representatives, community groups and TVET institutions. The SSB has a critical opportunity to bring these partners together to pilot and test different approaches and roll out successful approaches and to implement greater regional specialism and alignment of policy and effort.

9. Recommendations on meeting system-level priorities for the sector

9.1 National skills policy and strategy

There is a need for a top level commitment to engage with and help implement the Skills Strategy from the Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education. This will help ensure that the transfer of agriculture-specific TVET to the Ministry of Education is smooth and effective. It will also help ensure that ministries and their agencies play a critical role in moving the strategy forward; aligning TVET to national policy priorities. International organisations, donor organisations and NGOs also need to be engaged to ensure a commitment to the strategy and to align funding commitments to aspects of the strategy's action plan.

Proposed action:

- Ministry of Food and Agriculture, the Ministry of Fisheries and Aquaculture Development and the Ministry of Education to produce a detailed transition plan for transfer of TVET from the Ministries of Food and Agriculture and Fisheries and Aquaculture Development to the Ministry of Education, which ensures the momentum behind recent reforms to agriculture-TVET are not lost and that there is close connectivity between TVET and extension farmers. This activity needs to consider resource requirements and how civil service expertise can be maintained. It also needs to assess the effectiveness of current extension officer support and whether farmers would benefit from a range of specialist, but connected advice as part of reformed extension farming support.

- Ministries of Food and Agriculture and Education to work with the Ministry of Finance to put a plan in place where long-term credit can be better aligned with TVET-delivery and support

- Ministries of Food and Agriculture and Education to work with the Ministry of Trade to align key markets with TVET supply to increase regional specialization

- Ministries of Food and Agriculture and Education to agree with CORAF a mechanism to disseminate research findings to the SSB and TVET and tertiary education institutions to ensure it is reflected in curriculum development and delivery

- SSB to work with the Ministry of Food and Agriculture, Ministry of Education and the Ministry of Trade to undertake an audit of skill needs to ensure the various ministries have the required skills in relation to markets and latest agri-business techniques and trends

- SSB and relevant Ministries to seek the commitment of international organizations, donor organizations and NGOs to align their work and funding to the strategy

9.2 Governance and stakeholder coordination

Proposed action:

- Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education to put in place mechanisms to support the transition plan for transfer of TVET from the Ministries of Food and Agriculture and Fisheries and Aquaculture Development to the Ministry of Education.

- SSB to engage partners to develop appropriate key performance indicators to assess the progress and impact of the SSB
- Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education to work with the Ministry of Finance to put in plan in place where long-term credit can be better aligned with TVET-delivery and support
- Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education to work with the Ministry of Trade to align key markets with TVET supply to increase regional specialization
- Ministries of Food and Agriculture and Education to agree with CORAF a mechanism to disseminate research findings to the SSB and TVET and tertiary education institutions to ensure it is reflected in curriculum development and delivery
- SSB to work with Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education and the Ministry of Trade to undertake an audit of skill needs to ensure the various ministries have the required skills in relation to markets and latest agri-business techniques and trends
- SSB to create sub-sectors to take forward work focused on the needs of the six sub-sectors
- SSB to ensure that all TVET institutions delivering training on agriculture have agricultural representatives on their Board
- SSB to ensure that all TVET institutions and tertiary education institutions delivering agriculture training have an employer advisory panel that ensure representativeness of agriculture employers in the vicinity
- SSB to support TVET institutions and tertiary education institutions to put in place tracer studies to monitor the effectiveness of the TVET institution in developing appropriate skills to enable students to gain employment and to assess the impact of the skills strategy in developing a more demand-led TVET system
- SSB to set up mechanism to collect relevant LMIS for the agriculture sector, linking with broader approaches to collect LMIS at a national level and complement available data. This will allow better understanding of the job demand, and the skill needs
- SSB to put in place mechanism to collect supply-side data to collect and monitor the supply of sector-specific provision in technical secondary schools, TVET institutions and tertiary education
- COTVET to hold sensitization session with senior officials in Ministry of Food and Agriculture to ensure they are aware of the implications of the TVET Bill and the role of the SSB and commit to holding six month review meetings with senior officials to review progress of the SSB and help review its impact
- COTVET to hold sensitization session with stakeholders in the agriculture sector to raise awareness of the implications of the new TVET policy
- SSB to engage with the sector to spell out its role and strategy, put in place secretariat to take forward strategy, work with key partners to fund and pilot activities in the strategy

9.3 Funding

Funding remains a critical barrier to effective delivery and access to training. There is a need for greater co-ordination of existing funding to ensure it has a greater and more sustained impact and to test whether TVET Institutions can become more innovative and entrepreneurial in how they can increase their income through hiring equipment etc.

Proposed action:

- SSB to identify existing initiatives and funding opportunities that could be used to help fund activities in the skills action plan and that could be used by TVET institutions
- SSB to pilot more commercial activities within the TVET and tertiary education institutions that would generate income to increase practical delivery and the use of modern equipment. This include purchasing and hiring equipment.

9.4 Curriculum and qualifications

There is a need to ensure that the relevant training provision is in place that address the identified skill shortages and gaps. This will require an assessment of current provision against a matrix of skill needs for farmers and government officials and specialists. This will also require an evaluation of the impact of recent curriculum reforms. Courses also need to be developed for a range of skill shortage occupations.

Proposed action:

- SSB to outline core occupations in the sector and a produce career progression map to show entry and progression into and through the sector
- SSB to work with partners to develop a training and competency matrix that set out the skills that farmers need to developed, identify and map existing provision and develop appropriate courses to address gaps
- SSB to work with partners to develop a training and competency matrix that sets out the skills that government officials and technicians need to develop, identify and map existing provision and develop appropriate courses to address gaps
- Develop or refresh occupational standards for priority occupations
- SSB to review the impact of recent curriculum reform to ensure it responds to labour market needs
- SSB to ensure a review takes place of the curriculum in place to develop the competence of extension officers
- SSB to bring together relevant TVET institutions and tertiary education institutions to develop curricula for skill shortage occupations that is consistent across the country
- SSB to work with CORAF to produce periodic updates of research findings that will be used to inform new training and development
- SSB to outline a career strategy with existing intermediaries to promote sector job opportunities, change the perception of careers in the sector and offer guidance. This must include activities to encourage more women to enter the sector.

9.5 Delivery and assessment practices

There is a need to increase the focus of TVET institutions on upskilling and addressing skills gaps. This will require greater co-ordination with extension officers, better alignment with regional priorities and markets and greater innovation and engagement, including the use of remote learning.

Proposed action:

- SSB to work with district offices and other partners to align TVET provision with regional priorities and markets

- SSB to work with Ministry of Finance to pilot new approaches to credit being offered to students completing specific courses
- SSB to pilot TVET institutions and tertiary education institutions hiring out equipment, linked with training and development of new equipment, assess the lessons from the pilot and rollout.
- SSB to facilitate capacity building with senior staff in TVET and tertiary education institutions to increase innovation, commercial activities, and engagement with the sector
- SSB to work with relevant partners to put in place new specifications for teachers delivering agriculture courses to have relevant practical experience and to stipulate periodic industry refreshers
- SSB to identify skill needs of current teachers and provide upskilling training to ensure their skills and knowledge are up-to-date
- SSB to pilot more remote and virtual learning and training to farmers and other learners
- SSB to pilot Recognition of Prior Learning (RPL) with mastercraft persons, deliver top-up training (including finishing techniques, literacy and numeracy) and certify through COTVET
- SSB to work with Ministry of Food and Agriculture to pilot new approaches as to how TVET institutions can support extension officers support and upskill farmers

9.6 Access to training, industry-institute linkages and support for workplace learning

The engagement and co-ordination between TVET institutions and the sector are critical to take forward the strategy and address the skills needs of the sector. In addition to greater innovation in delivery, there is a need to put in place more internships to increase the practical skills of students and create alumni associations to increase the institutions' engagement with the sector.

Proposed action:

- SSB to facilitate pilots to align TVET institutions with extension officers to deliver workplace training in a region
- SSB to pilot internships with key employers, review, amend and roll out across all TVET and tertiary education institutions
- SSB to pilot setting up of alumni networks to increase engagement with TVET and tertiary education institutions and the sector

9.7 Gender Equality

Women play a critical role within the agriculture workforce and it is critical that they have the same opportunities to access training and support as men and that, barriers preventing women attending training are removed.

Proposed action:

- SSB to work with partners to monitor and ensure that training opportunities are equally targeted at women and that barriers are removed to encourage full participation.
- SSB to ensure that careers strategy and activities actively target more women, showcasing existing high profile female role models working in the sector

10. Timescales

The passing of the TVET Commission Bill will help establish the role and authority of the SSB and will help increase its leverage to galvanise the change outlined in this strategy. The following sets out the actions outlined above across an eighteen month timeline and suggests those actions that can be taken forward before the Bill is passed and those where it would be more advantageous to wait.

10.1 Immediate actions

Time period	Category	Actions
First six months from launch of strategy	Governance and stakeholder coordination	SSB to create sub-sectors to take forward work focused on the needs of the six sub-sectors
	Governance and stakeholder coordination	SSB to ensure that all TVET institutions delivering training on agriculture have agricultural representatives on their Board
	Governance and stakeholder coordination	SSB to ensure that all TVET institutions and tertiary education institutions delivering agriculture training have an employer advisory panel that ensure representativeness of agriculture employers in the vicinity
	Governance and stakeholder coordination	SSB to engage partners to develop appropriate key performance indicators to assess the progress and impact of the SSB
	Governance and stakeholder coordination	SSB to support TVET institutions and tertiary education institutions to put in place tracer studies to monitor the effectiveness of the TVET institution in developing appropriate skills to enable students to gain employment and to assess the impact of the skills strategy in developing a more demand-led TVET system
	Funding	SSB to identify existing initiatives and funding opportunities that could be used to help fund activities in the skills action plan and that could be used by TVET institutions
	Curriculum and qualifications	SSB to review the impact of recent curriculum reform to ensure it responds to labour market needs
	Curriculum and qualifications	SSB to bring together relevant TVET institutions and tertiary education institutions to develop curricula for skill shortage occupations that is consistent across the country
First 12 months from launch of strategy	Governance and stakeholder coordination	SSB to set up mechanism to collect relevant LMIS for the agriculture sector, linking with broader approaches to collect LMIS at a national level and complement available data. This will allow better understanding of the job demand, and the skill needs
	Governance and stakeholder coordination	SSB to put in place mechanism to collect supply-side data to collect and monitor the supply of sector-specific provision in technical secondary schools, TVET institutions and tertiary education
	Curriculum and qualifications	Develop or refresh occupational standards for priority occupations
	Curriculum and qualifications	SSB to work with partners to develop a training and competency matrix that set out the skills that farmers need to developed, identify and map existing provision and develop appropriate courses to address gaps
	Curriculum and qualifications	SSB to ensure a review takes place of the curriculum in place to develop the competence of extension officers
	Funding	SSB to pilot more commercial activities within the TVET and tertiary education institutions that would generate income to increase practical delivery and the use of modern equipment. This include purchasing and hiring equipment.
First 18 months from launch of strategy	Curriculum and qualifications	SSB to outline core occupations in the sector and produce career progression map to show entry and progression into and through the sector
	Curriculum and qualifications	SSB to work with CORAF to produce periodic updates of research findings that will be used to inform new training and development

10.2 Actions after TVET Bill has been passed

Time period	Category	Actions
First six months after Bill is passed	National skills policy and strategy	Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education to put in place mechanisms to support the transition plan for transfer of TVET from the Ministries of Food and Agriculture and Fisheries and Aquaculture Development to the Ministry of Education.
	National skills policy and strategy	Ministries of Food and Agriculture and Education to work with the Ministry of Finance to put in plan in place where long-term credit can be better aligned with TVET-delivery and support
	National skills policy and strategy	Ministries of Food and Agriculture and Education to work with the Ministry of Trade to align key markets with TVET supply to increase regional specialization
	National skills policy and strategy	Ministries of Food and Agriculture and Education to agree with CORAF a mechanism to disseminate research findings to the SSB and TVET and tertiary education institutions to ensure it is reflected in curriculum development and delivery
	National skills policy and strategy	SSB and relevant Ministries to seek the commitment of international organisations, donor organisations and NGOs to align their work and funding to the strategy
	Governance and stakeholder coordination	Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education to put in place mechanisms to support the transition plan for transfer of TVET from the Ministries of Food and Agriculture and Fisheries and Aquaculture Development to the Ministry of Education.
	Governance and stakeholder coordination	Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education to work with the Ministry of Finance to put in plan in place where long-term credit can be better aligned with TVET-delivery and support
	Governance and stakeholder coordination	Ministries of Food and Agriculture, Fisheries and Aquaculture Development and Education to work with the Ministry of Trade to align key markets with TVET supply to increase regional specialization
	Governance and stakeholder coordination	COTVET to hold sensitization session with senior officials in Ministry of Food and Agriculture to ensure they are aware of the implications of the TVET Bill and the role of the SSB and commit to holding six month review meetings with senior officials to review progress of the SSB and help review its impact
	Governance and stakeholder coordination	COTVET to hold sensitization session with stakeholders in the agriculture sector to raise awareness of the implications of the new TVET policy
	Governance and stakeholder coordination	SSB to engage with the sector to spell out its role and strategy, put in place secretariat to take forward strategy, work with key partners to fund and pilot activities in the strategy
First 12 months after Bill is passed	National skills policy and strategy	SSB to work with Ministries of Food, Agriculture and Education and the Ministry of Trade to undertake an audit of skill needs to ensure the various ministries have the required skills in relation to markets and latest agri-business techniques and trends
	Governance and stakeholder coordination	SSB to work with ministries to identify skill needs required in each ministry
	Curriculum and qualifications	SSB to outline career strategy with existing intermediaries to promote sector job and offer guidance. This must include activities to encourage more women to enter the sector. Pilot different approaches
	Delivery and assessment practices	SSB to work with district offices and other partners to align TVET provision with regional priorities and markets
	Delivery and assessment practices	SSB to pilot TVET institutions and tertiary education institutions hiring out equipment, linked with training and development of new equipment, assess the lessons from the pilot and rollout.

Time period	Category	Actions
	Delivery and assessment practices	SSB to facilitate capacity building with senior staff in TVET and tertiary education institutions to increase innovation, commercial activities, and engagement with the sector
	Delivery and assessment practices	SSB to put in place practical development strategy for existing TVET and tertiary education lecturers delivering agriculture-specific provision
	Delivery and assessment practices	SSB to work with relevant partners to put in place new specifications for teachers delivering agriculture courses to have relevant practical experience and to stipulate periodic industry refreshers
	Delivery and assessment practices	SSB to pilot Recognition of Prior Learning (RPL) with mastercraft persons, deliver top-up training (including finishing techniques, literacy and numeracy) and certify through COTVET
	Delivery and assessment practices	SSB to pilot more remote and virtual learning and training to farmers and other learners
	Access to training, industry-institute linkages and support for workplace learning	SSB to facilitate pilots to align TVET institutions with extension officers to deliver workplace training in a region
	Access to training, industry-institute linkages and support for workplace learning	SSB to pilot internships with key employers, review, amend and roll out across all TVET and tertiary education institutions
	Access to training, industry-institute linkages and support for workplace learning	SSB to pilot setting up of alumni networks to increase engagement with TVET and tertiary education institutions and the sector
	Gender and disability equality	SSB to ensure that careers strategy and activities actively target more women, showcasing existing high profile female role models working in the sector
	Gender and disability equality	SSB to work with partners to monitor and ensure that training opportunities are equally targeted at women and that barriers are removed to encourage full participation.
First 18 months after Bill is passed	Delivery and assessment practices	SSB to work with Ministry of Fisheries and Aquaculture Development and industry partners to develop specific provision to address skill shortage for professional and technical occupations
	Delivery and assessment practices	SSB to work with Ministry of Finance to pilot new approaches to credit being offered to students completing specific courses
	Delivery and assessment practices	SSB to identify skill needs of current teachers and provide upskilling training to ensure their skills and knowledge are up-to-date
	Delivery and assessment practices	SSB to work with Ministry of Food and Agriculture to pilot new approaches as to how TVET institutions can support extension officers support and upskill farmers

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