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Indaba Agricultural Policy Research Institute (IAPRI)

Lusaka, Zambia

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The Indaba Agricultural Policy Research Institute (IAPRI) is a non-profit company limited by guarantee and collaboratively works with public and private stakeholders. IAPRI exists to carry out agricultural policy research and outreach, serving the agricultural sector in Zambia, so as to contribute to sustainable pro-poor agricultural development.

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Any views expressed or remaining errors are solely the responsibility of the authors.

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EXECUTIVE SUMMARY

Youth unemployment remains a critical challenge in Zambia and if the status quo is not dealt with the country may, in the near future, experience political challenges. As at 2017, Zambia's youth unemployment rate ranged from 45.5% to 51.1% in 2017 (CSO 2018). To address the pressing need for youth employment, agriculture remains the key driver. However, it has been unclear what youth employment opportunities exist within the agriculture sector. Therefore, this study sought to identify opportunities available for youth in the agriculture value chain by addressing the following research questions:

1. What are the current and potential employment opportunities suitable for youth in agriculture value chains?
2. How can prospective employers in the agriculture value chains be motivated to employ youth?
3. What challenges do youth face and how can their abilities and interests to engage in agriculture value chains be strengthened?

Methods

Using the Value Chain Approach (VCA), the study employed the qualitative approach by undertaking desk review of literature, interviewing key informants from among employers, large and small-scale agri-business entrepreneurs along the agriculture value chain, policymakers, development organizations, primary/secondary school teachers, college and university lecturers. Further, the study conducted Focus Group Discussions (FGDs) in schools and villages among youth aged from 15 to 35 years, to ascertain their aspirations, skills, and constraints for engaging in agriculture, as well as how they could be motivated to engage in the sector's value chains. This was done in five purposefully sampled districts all of which are active in the agriculture sector.

Results and Recommendations

This study has highlighted existing and potential employment opportunities in the agriculture sector that if implemented can greatly contribute towards addressing youth unemployment. The study found immense opportunities in primary production, mainly in crops (soya beans, cotton, beans, cassava, maize), horticulture, aquaculture, and livestock (cattle, goats, sheep, pigs, poultry, and beekeeping), which can also be reared in almost all parts of the country. Additionally, in the secondary segment of the value chain, the study identified agro-processing (milling, soya bean oil, meat, and milk products), trading, and retailing in these agro products as key opportunities for youth employment. Opportunities in the tertiary segments include training and engagement in private agriculture extension services. Large scale agribusinesses provide employment to youth but they lamented the high tax regime, which inhibits further expansion and consequently reduce their capacities to enhance youth employment. Furthermore, young people's own negative perception of the agriculture career, mainly influenced by the education curriculum that shapes the student to be an employee rather than an employer, coupled with inadequate education, skills, information, and knowledge of existing opportunities hinder youth employment in the sector. Challenges such as inaccessibility of finance, lack of access to land and tenure insecurity, the high cost of undertaking agri-businesses, and poor road infrastructure also prevent youth from taking advantage of these opportunities. As such, the study recommends the following:

1. There is a need for a paradigm shift from the myopic perception of agriculture to view it broadly as consisting value chains that provide immense opportunities for youth employment. This includes investing more in education and improving the education curriculum for both short and long-term training of youth at different levels and revamping the career guidance in schools and colleges to view the sector broadly as a value chain.
2. Policy makers need to make agriculture profitable by reducing the cost of borrowing for young people to access capital; reducing user charges in specific subsectors such as veterinary services; and lowering transaction costs in land administration while strengthening collaboration with traditional leaders to promote youth access to land.
3. Youth targeted financial programmes, especially grants to well-selected groups/cooperatives (with benefits accruing to individuals), need to be considered. Equally, value chain players need to further promote savings groups for youth, to affordably accumulate capital for investment in agribusiness.
4. Strengthening links and collaborations between training institutions and agro-investments in the value chain through internship programs is crucial, so as to expose youth to and raise their prospects for employability.
5. There is need for government to work on feeder roads to facilitate smooth movement of goods and services to and from the markets.
6. There is need for government to promote use of technology such as mechanization (ripping with tractors, planters, tricycles, irrigation equipment, and combine harvesters) and Information Communication Technologies (ICTs), as these would facilitate young people's access to relevant knowledge and information on available opportunities in the agriculture sector.

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ACRONYMS

CEEC	Citizens Economic Empowerment Commission
CSO	Central Statistical Office
FAO	Food and Agriculture Organisation
FGD	Focus Group Discussion
FISP	Farmer Input Support Programme
GRZ	Government Republic of Zambia
ICT	Information Communication Technology
IAPRI	Indaba Agricultural Policy Research Institute
MCTI	Ministry of Commerce Trade and Industry
MYS	Ministry of Youth Sports
RALs	Rural Agricultural Livelihoods Survey
ZAM	Zambia Association of Manufacturers
ZDA	Zambia Development Agency

1. INTRODUCTION

The demographic dividend being experienced in most countries in Sub-Saharan Africa (SSA) has been touted as a potential source of growth for the African continent and its relatively young population. While this may present opportunities for social and economic development, it also presents the challenge of employment creation that can absorb a large cohort of youths entering the labor markets. Youth employment and entrepreneurial opportunities particularly those in rural areas of the developing countries remain limited, poorly remunerated, and of poor quality (Brooks et al. 2013; AGRA 2015; Yeboah and Jayne 2017). Besides, the majority of employed youth in SSA work in the informal sector pursuing non-attractive, low-paying, and unstable employment, hence the need to create formal jobs (World Bank Group and IFAD 2017). The formal sector is important but is only able to absorb about 25% of the youth labor force (Filmer and Fox 2014) leaving the rest to be taken up by the informal sector including agriculture (agrifood system, supplying inputs, distribution, and trading of commodities).

Like in most Sub-Saharan African countries, Zambia is faced with a similar challenge of youth unemployment. While the country's youth proportion of the population was estimated at 35.5% in 2011, the proportion is projected to slightly increase to 36.5% by 2035 (CSO 2013)¹ and thus, continue to supply more youth into the employment market. However, job creation growth has lagged behind population growth for a long time resulting in high unemployment rates for young people. Further, based on the national definition of employment by Central Statistics Office (CSO), "...persons who work for pay (i.e., in cash or in kind), [barter, family gain], or profit...", *ibid*, an estimated 45.5 to 51.1% of youth in Zambia aged 15 to 35 years were unemployed in 2017 (CSO 2018). The country's job market has not been growing at a rate commensurate with the rate of the labor demands especially from the young people, partly due to low agriculture growth rate and growing mechanization in the industrial sector. If youth unemployment is not addressed, it is likely to result in political challenges for the country.

To address the pressing need of promoting economic growth and absorbing the youth population in the labor force market, agriculture still remains the key driver in most countries in the African region accounting for 50% of employment. However, the narrative around agriculture in most African countries invokes a story of back-breaking labor and subsistence with agriculture seen as a last resort option for the poor. As such, despite offering employment opportunities, the sector is unattractive to young people, as they prefer to have formal jobs in urban areas, citing backwardness, drudgery, and low profitability. However, the limited absorption capacity of the formal sector leaves many unemployed.

According to the 2014 Living Conditions Monitoring Survey, among the young people that are engaged in agriculture, the majority are concentrated in primary production (CSO 2015), while the participation rates are low in secondary (industry and manufacturing) and tertiary (services) levels. It is not entirely clear what the requirements are for youth engagement in these value chains and how prospective employers can be motivated to employ young people. However, young people face constraints in participation in the various segments of the agriculture value chains that undermine their potential and ability to engage and excel in agriculture. These include living in areas where there is inadequate infrastructure, inaccessibility of land, credit, technology, inadequate support, and usually unreliable markets (FAO, IFAD, and CTA 2014; AGRA 2015; Lambon-Quayefio 2017). The majority face a skills gap challenge between their education and job employment requirements. They often

¹ CSO 2013. Figure 6, P. 16.

have to invest additional time volunteering in order to acquire the necessary skills to get a job (MasterCard Foundation 2016; Muyanga, Jayne, and Otieno 2017).

Notwithstanding these constraints, and with the emergence of Information Communication Technologies (ICTs), most youth are eager to engage in agriculture, as they have the energy, and the enthusiasm to learn and undertake new initiatives in the various segments of the value chains (AGRA 2015; MasterCard Foundation 2016). For example, the Nigerian federal government developed an Agricultural Transformation Agenda (ATA) that aims, among other things, to promote employment opportunities for youth in the agriculture sector through increased productivity and value addition. The programme is reported to have decreased the proportion of unemployed youth owing to the creation of more targeted job programs (Adesugba and Mavrotas 2016).

Despite Zambia's agriculture sector's ample potential to provide income-generating opportunities for rural youth, challenges related specifically to youth participation in agriculture and, more importantly, options for overcoming them have rarely been documented. Equally, there is scant literature to inform policy decisions on available opportunities for youth employment in the agriculture value chains. The Zambian government has prioritized youth employment creation; this paper provides evidence to contribute towards achieving that goal. Against this backdrop, this study adopts the Value Chain Approach (VCA) and focusses on identifying opportunities for young people in the agriculture value chains. The study sought to address the following research questions:

1. What are the current and potential employment opportunities for youth in agriculture value chains?
2. How can prospective employers in the agriculture value chains be motivated to employ youth?
3. What challenges do youth face and how can their abilities and interests to engage in agriculture value chains be strengthened?

To address these questions we hypothesize that:

1. There are no opportunities in the agricultural sector for young people's engagement;
2. Even if appropriate incentives are instituted, employers would not increase their engagement of young people;
3. Young people are not interested in being employed in the agriculture sector value chains; and
4. There is a mismatch between employers' needs and youth qualifications.

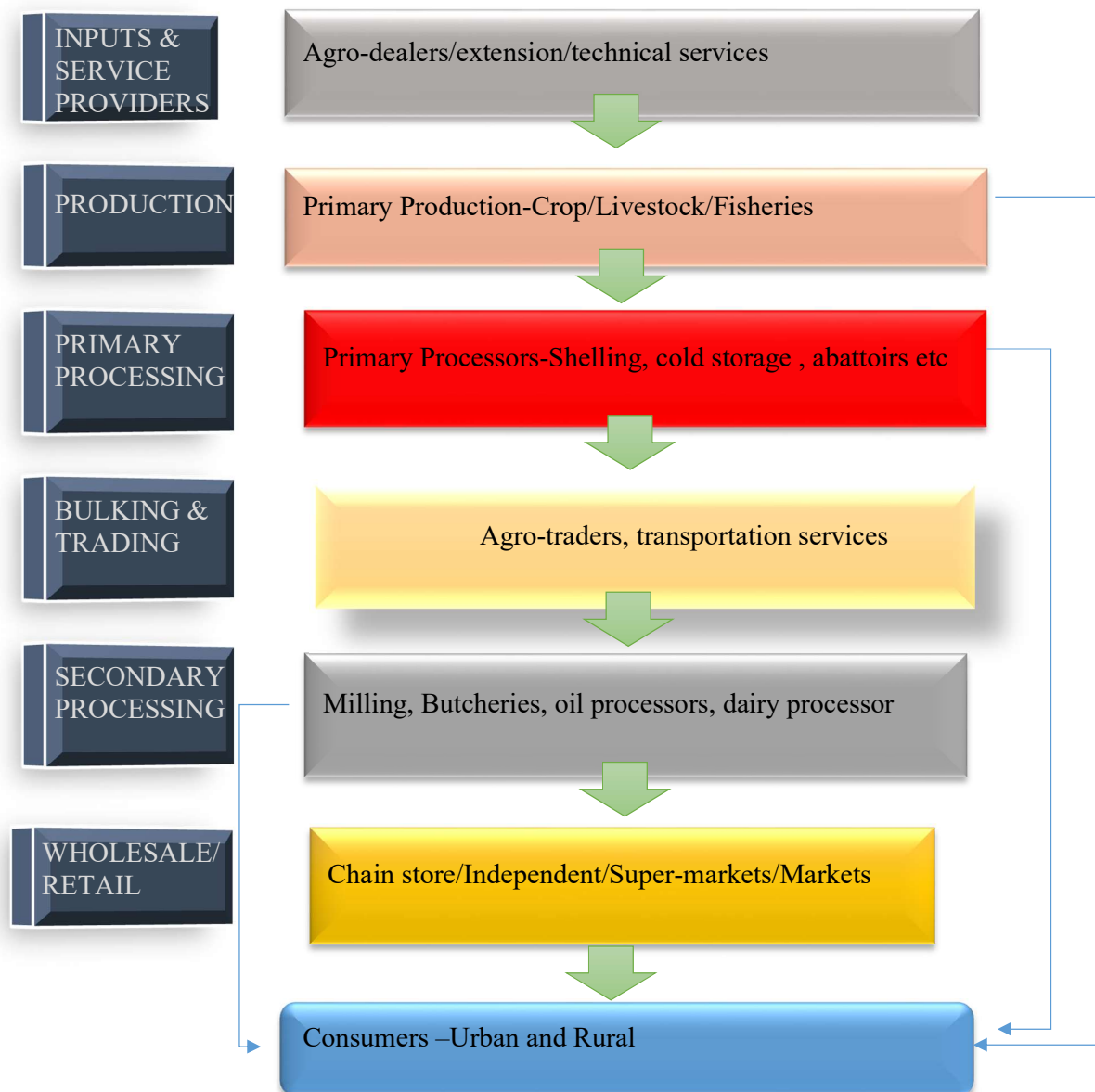
For the purposes of this study, we adopted the Central Statistical Office (CSO) definition of employment. This definition may be contentious as it may exclude people who may qualify to be employed and vice versa. However, this important discourse is beyond the scope of this study as the study focuses on identifying opportunities for youth employment in the agriculture sector. We define a youth as one who is aged 15 to 35 years, in line with Zambia's National Youth Policy of 2015. We adopt this definition yet with caution as to its appropriateness in defining this category of the Zambian population with regard to employment as the definition includes young people who are in school. We further use the terms 'youth' and 'young people' and 'young men and women' interchangeably. Further, we provide policy recommendations on what youth, government, the private sector, and CSOs can do to promote agriculture employment among young men and women. The rest of the paper is organized as follows: Section 2 presents the data and methods used in this study while in Section 3 results of the study are presented including youth employment

opportunities in the agriculture value chain, possible options for motivating employers to employ youth and what needs to be done to employ more youth in agriculture. Lastly, Section 4 presents the conclusion and recommendations based on the study findings.

2. CONCEPTUAL FRAMEWORK

This section highlights the agriculture value chain map linking the various actors in the sector from the input/service providers to the final consumers. We use the value chain analysis (VCA) approach to identify the different segments in the agriculture value chain that offer employment opportunities for the youths in Zambia. According to Kaplinsky and Morris (2001), the VCA describes the full range of activities which are required to bring a product or service from conception, through the different phases of production (involving a combination of physical transformation and the input of various producer services), delivery to final consumers, and final disposal after use. It analyzes the range of activities that take place in this process while adding value to the product in the links of the chain. The analysis seeks to understand the factors and incentives that drive movement and change of form of the product as well as constraints that determine the course of direction while identifying opportunities in the industry.

Figure 1. Agricultural Value Chain



Source: Authors' field notes.

A value chain can either be formal or informal. As shown in Figure 1, a formal value chain can be one that goes through each and every segment highlighted in the value chain map from primary production through processing and distribution in retail shops and supermarkets to the final consumer. In an informal value chain on the other hand, a product can move directly from the producer to the consumer without passing through any formalized marketing channel. Depending on the products of interest, the segments in the value chain tend to differ and so are the employment opportunities available. Similarly, employment opportunities available will differ between a formal and an informal type of value chain that is under consideration. In both channels (formal and informal), the value is added and depending on the policy and legal framework supporting the particular value chain and the level of competition, jobs are created from which young men and women can tap. They can be employed as farm managers, veterinary officers, agribusiness trainers, security guards, transporters, brokers, marketers, engineers, and cashiers. Therefore, the purpose of adopting the VCA framework in this study is to identify the different employment opportunities available for young people in Zambia's agriculture value chains. We take the agriculture value chain, as comprising primary production, secondary and tertiary segments in which young people are and can be employed both in terms of wage employed and on self-employment basis. For the purposes of this study, 'primary' includes production, service provision, and extracting raw materials, secondary consists manufacturing/processing while tertiary involves service provision in the value chain.

3. DATA AND METHODS

This study employed the qualitative approach by undertaking a desk review of the literature on youth employment and interviewing a total of 47 key informants in February and March 2018. The latter came from among large and small-scale agri-business employers along the agriculture value chain, policymakers, agro-dealers, grain traders, agro processors, livestock traders, agriculture colleges and a university, development organizations, and primary/secondary school teachers to determine their perception of youth and agriculture. Among the policy makers interviewed were high-level government officials (Directors) and District Agricultural Coordinators (DACOs) to get their vision and policy directions on youth employment. Other key informants came from learning institutions that prepare youth for employment in the agriculture value chains.

The study conducted two Focus Group Discussions (FGDs) with a total of 83 youth (farmers and students) in each of the sampled districts, to ascertain their aspirations, motivations, and constraints for engaging in agriculture value chains.² This was done in five purposefully sampled districts (Lusaka, Mumbwa, Mpongwe, Chongwe, and Namwala). These districts are characterized by high agriculture production and marketing (Mpongwe, Mumbwa) and high population density and proximity to markets (Chongwe, Lusaka), coupled with high activity in agro processing and service provision. According to the nationally representative Rural Agriculture and Livelihoods Survey (CSO/MAL/IAPRI 2015), Namwala is the highest cattle producing district in Zambia and thus offers more employment opportunities for youth in livestock production, trading. The study also utilized the pairwise ranking method to ascertain challenges that youth face. Table 1 provides the details of the field participants.

Table 1. Number of Focus Group Discussions and Key Informants' Interviews Conducted

No.	District	Primary	Secondary	Tertiary
1	Mpongwe	1 FGD of 12 smallholder farmers 1 large scale investor	1 large scale processor 1 Agro dealer	1 DACO - 3 Agriculture officers - 1 FGD of 6 college students - 1 College Principal
3	Mumbwa	1 FGD of 13 smallholder farmers 1 key informant (successful farmer)	1 Agro dealer 1 transporter	1 Agriculture Officer 1 FGD of 12 students 1 Grade 9 school teacher 1 Development Organisation (ZNFU) 1 Bank
2	Chongwe	1 FGD of 12 smallholder farmers 1 key informant (successful farmer)	2 transporters 1 small scale processor	1 DACO 1 FGD of 8 Grade 9 students 1 Grade 9 school teacher 1 Development Organisation (World Vision)

² In selected few cases people aged beyond 35 years were still allowed to be part of the group discussions.

Table 1 cont.

No.	District	Primary	Secondary	Tertiary
4	Namwala	3 successful cattle farmers	2 key informant (cattle traders) 1 FGD of 12 cattle traders 1 buyer of Namwala products (Choma large supermarket)	1 Senior Livestock Officer 1 FGD of 8 Grade 12 students 1 agriculture teacher 1 Production Unit manager teachers
5	Lusaka	1 large scale investor (fish hatchery)	1 Processor/large scale investor 1 Transporters /distributors 1 Grain Trader	2 Development Organizations 3 lecturers from training institutions (NRDC, NIPA, and UNZA) 1 CEO -Zambia Association of Manufacturers 4 Policy Maker/implementer (Ministries of Commerce and youth) 6 participants from the International Labour Organization

Source: Authors' compilation.

4. RESULTS AND DISCUSSION

The first hypothesis in this study is that there are no employment opportunities for youth in Zambia's agriculture sector. To the contrary, this study found immense employment opportunities in the sector's value chains. More specifically, opportunities lie in primary, secondary, and tertiary segments of the agriculture value chains. The study found that crop production (especially soybeans, cassava, groundnuts, and maize), livestock (cattle, goats, pigs, sheep, poultry, and dairy), and aquaculture are important wage and self-employment opportunities for youth. Agro-processing in these products, trading and retailing in the produce are equally key in the secondary segment while youth have an extraordinary opportunity to provide the largely unavailable extension services. Young people can also work as plumbers, accountants, information technology technicians, veterinary officers, and marketers. We discuss these in detail in this section.

4.1. Opportunities in Primary Production Value Chain

IAPRI's study (Machina, Chapoto, and Sambo forthcoming) showed that nearly all youth (90%) that are engaged in agriculture are in primary production, the majority of whom are young and without education. Most of them dominate this segment mainly as family dependents or as de facto actors with limited alternatives. With the country's huge natural resource endowments (water, land, and labor), the agriculture sector provides the greatest opportunity for youth employment. In the primary production segment of the agriculture value chain, the study revealed diverse youth employment opportunities in which they engage especially with their dynamism. Prominent among these are in crop production, livestock, and aquaculture (see Table 2 below). In primary production, the key informants and focus group participants identified crops such as soya beans, groundnuts, mixed beans, and horticulture (fruits, tomatoes, and onions) as the most profitable/promising mainly attributing these to good climatic conditions and soils in the districts surveyed. With the growing health sensitivity on the Zambian market especially among urban consumers, demand for organic products is gaining prominence and, therefore, creating an opportunity for youth engagement. Training institutions are taking up the challenge to train more producers, an opportunity that young men and women can exploit.

Livestock production is yet another key venture that emerged from the findings of this survey and it supports many households for income and nutrition purposes. Notable among the livestock species commonly cited by respondents as providing opportunities for youth employment are cattle, goats, sheep, pigs, poultry, and beekeeping. Most of these species are relatively easy to manage as smallholder farmers rear them mainly using traditional methods and knowledge. With basic training supported by appropriate services, young people can increase production of these animals and birds. Cultural factors, coupled with improved management of livestock, play a key role in encouraging production of livestock. In Namwala District, Zambia's largest producer of cattle, ownership of a large herd of cattle is highly esteemed and a symbol of social status. However, this study observes that this may not be the case among youth, as very few of them actually own large herds of cattle. Conversely, the effects of climate change have forced some families to migrate northwards where historically cattle production has been uncommon. While this is a challenge for the affected districts, it poses an opportunity for young people in the host districts, as they learn to get into the cattle rearing business.

Table 2. Employment Opportunities in Selected Agriculture Value Chains and Youth Engagement

Types of Employment Opportunities in Value Chain Categories			
Value Chain	Primary	Secondary	Tertiary
Crops (e.g., wheat, maize, sunflower, soybeans)	<ul style="list-style-type: none"> - Input marketing and distribution - Refrigerated transportation - Farming - Services (spraying, extension, veterinary, etc.) - Requirements from employers 	<ul style="list-style-type: none"> - Grain trading – storage - Distribution/transportation of produce - Value addition processing (milling, by-products, etc.) - Packaging - Cooperatives entrepreneurship development - Processing cooking oil from soybeans, groundnuts, sunflower, meat, poultry and fish 	<ul style="list-style-type: none"> - Marketing, - Food preparation and consumption - Education/Training
Livestock (poultry, cattle, goats, sheep)	Own production	Trading, meat processing, marketing	Veterinary services, research, training,
Aquaculture	Own production	Value addition (fish processing, canning), trading, transportation, market research	Fish pond construction, research and training farmers, and prospective entrepreneurs. Training others on proposal development to source funding,
Agro dealing	Trading in farm inputs	Transportation, retailing, market research	Training and advising farmers and mentoring producers, research

Source: Authors.

Most parts of Zambia, particularly in Agro-ecological Zone II and III are conducive for livestock production. Notable among these are Central, Copperbelt, and Luapula Provinces with favorable climatic conditions (rains, temperatures), soils, and land availability from which young people can engage in profitable agribusiness ventures. Equally, with the growing population and rapid urbanization, the demand for protein is increasing and is estimated to rise—especially driven by high-income households (Chisanga and Zulu-Mbata 2017)—and in the process, create markets for livestock products and opportunities for youth employment. Young people can also trade in livestock by-products such as hides and process them into shoes, belts, and handbags for the market. Additionally, dairy production is an emerging and rewarding agribusiness venture offering great potential for youth employment

in Zambia. The interviews in this study, however, revealed some challenges in livestock production which include lack of access and tenure security to land due to growing human population and high charges for veterinary services, all of which limit their potential to start or expand their activities. To address land access by youth, the Ministry of Youth and Sport working with line ministries has opened up land for young people in Mwange and Mufumbwe resettlement schemes in Northern and North-western Provinces respectively. Some youth have taken advantage of this opportunity and settled in those areas. However, poor infrastructure has discouraged many of the youths from acquiring land and staying in the said resettlement schemes.

In recent years, Zambia's *aquaculture* has been growing rapidly due to increasing demand triggered by depletion of river fish stocks and population increase. The Government of Zambia has prioritized aquaculture to meet the estimated annual shortfall of 77,000 tons the country has been importing from other African countries and increasingly from China (Krishnan and Peterburs 2017). About 12,010 smallholder farmers were engaged in aquaculture production in 2014 (Genschick et al. 2017) and more on-farm jobs could be realized. The subsector is poised to grow further and employ young people in the construction of fish ponds for farmers and undertaking actual production of fingerlings or fish in general, supplying of feed inputs (such as maize and soybeans), distribution and marketing. However, there are challenges, which may affect young people including low supply of fish fingerlings, water shortage, high cost of inputs, land inaccessibility, and tenure insecurity, coupled with bureaucracy in acquisition of land titles.

Funding opportunities, though limited, are available for youth to access from the government supported Citizens Economic Empowerment Commission's (CEEC) Value Chain Development Programme.³ Some youth have accessed funds for various projects especially in value addition under the CEEC while others are constrained by stringent funding conditions and ignorance of the existence of these opportunities coupled with what seemingly is lack of motivation to pursue the challenging process of funds acquisition. Discussions with the youths in FGDs revealed that lack of access to water, particularly in the dry season, hinders youth from engaging in profitable agribusinesses. This forces them to engage in these businesses only during the rainy season. The seasonal farming system leaves time for idleness in the dry season and, consequently, results in delinquency among young people. In this regard, *irrigation* initiatives are important for youth to raise incomes and be occupied in a constructive manner. While taking into account social and environmental factors, the government needs to take the lead by investing in construction of dams and boreholes and facilitate micro-irrigation technologies. These should encourage youth to engage in agriculture. The Irrigation Development Support Project under the Ministry of Agriculture offers funding for irrigation projects to farmer groups. However, in the last seven years of its existence, the project has publicized its funding opportunities, however this only resulted in approval of thirty-three project proposals worth \$5.2 million (save for funds disbursed to public institutions). By March 2018, the funds were yet to be disbursed. The low response rate is seemingly due to unfavourable requirements (which are currently in review) but also due to applicants' expectations. Despite this result, however, the project still provides an opportunity for youth to access funding for irrigation projects.

While these constraints are real, young people can overcome them by gaining necessary information and knowledge, by engaging with the private sector, civil society organizations and government departments dealing with youth, commerce, and industry, agriculture,

³ Citizens Economic Empowerment Commission press statement, January 18, 2018.

fisheries, and livestock for technical support. Equally, they can form *cooperatives* as platforms for information and knowledge sharing, accessing capital for farming activities, and bulking their produce for the urban market for better returns. *Savings groups* are yet another opportunity for youth to accumulate capital locally, even though in some cases they do not have the capacity to borrow and utilize the savings. However, all this needs a well-functioning extension system that would train and provide advice on the aquaculture value chain business.

Private sector investors contribute immensely to employment opportunities for young people. In the districts under study, they constituted the largest wage employers, especially those engaged in the production of wheat, maize, and soybeans. For example, a Mpongwe based private agribusiness (Still Waters Farm) employs an average of 120 workers annually (mostly youth), including 40 permanent ones. The farm produces maize, wheat, and sheep and is eager to increase its investments by diversifying into nuts and avocado trees. Zambeef group of companies employs over 7,200 employees in its entire agriculture value chain agribusiness ventures, over 65% of which are youth. Countrywide, commercial farms employ large number of workers (mostly youth) on a full-time or part-time basis. Therefore, facilitating the establishment of more private large-scale farms while taking into account social and environmental impacts would result in more employment opportunities for youth.

Technology promotion is key in attracting youth into the agriculture sector as it not only boosts their productivity but also motivates them. Since they view agriculture as ‘laborious’ and ‘dirty’ and less profitable, promoting technology such as mechanization (ripping with tractors, planters, tricycles, irrigation equipment, and combine harvesters) would ease their work and change their perception. In addition, technologies that promote value addition in agro products branding and promote quality and increase shelf life would increase as well as jobs. Since young people tend to be adventurous and innovative, promoting Information and Communication Technologies (ICTs), such as easy to use phones, radio, and internet, would encourage them to engage in the sector as they make more informed choices in their endeavors. ICTs help transfer information and knowledge reliably, accurately, and in a timely way. They also help farmers to access distant markets at lower costs while promoting innovation. Electronic payments have also eased business and helped lower costs while enabling agribusinesses to meet their statutory obligations (Pay-As-You-Earn and pension schemes). ICTs are, therefore, key in demonstrating to the youths that agriculture is not just farming but includes a large variety of agribusiness enterprises in the entire value chains. These include general management, engineering, value addition, and research, all of which provide young people with employment opportunities.

Furthermore, farmer input supply provides yet another opportunity for youth employment. Through the electronic voucher system of the Farmer Input Support Programme (FISP) introduced by the Zambian Government in 2013, young people have been part of the beneficiaries. The agro-dealer business has enhanced the products offered and diversified services. It now employs over 3,000 people (Machina, Sambo, and Nzila 2017) mostly young men and women trading in chemicals, fertilizers, and improved seed varieties, while additionally providing services such as training farmers in the application of these chemicals and crop management. During the 2017/18 agricultural season, the system faced some implementation constraints but still remains an opportunity for youth employment if well managed and funded.

4.1.1. Employment Opportunities in the Secondary Segment of the Agriculture Value Chain

The secondary segment of the agriculture value chain also provides employment for young people. The primary and agro processing industries employ more than 60% of Zambia's total labor force (ZDA 2014). The secondary segment of the agriculture value chain constitutes adding value to primary agricultural products. It harbors immense potential for employment creation among young people through the use of simple and inexpensive technologies. For youth, opportunities lie in processing meat and its products, hides, horticulture (canning tomatoes, mangoes, cashew, and pineapples), and grain milling (rice, maize, and wheat). Other opportunities are processing of cotton products, stock feed, cassava, vegetables, cashew nuts, snacks, and a range of butter and edible oils, soybeans, sunflower and groundnuts, and soy milk as well as retailing in agricultural products.

Many youths are engaged in the processing of primary agricultural produce into products such as cassava meal, chips, and starch as industrial raw material, peanut butter, and cooking oil from sunflower and soybeans; also in drying of foods using simple technologies such as solar dryers and supplying to open markets and chain stores.

However, challenges such as unpredictable weather patterns/climate change that affects raw material production from the local primary production segment as well as the unpredictability and inconsistency in macro policy implementation, raise the cost of processing and access to inputs. This can threaten the growth of the processing sector and consequently affect youth employment. Additionally, the country's processing industry is still small though has potential for growth. Our findings revealed optimism among major agro-processers in particular millers, edible oil processing companies, and meat processing firms with plans to expand their enterprises thereby creating more opportunities for youth employment.

The *trading and retailing* sub-sector is also a major employer among youth in Zambia, both as a wage-employment provider and for self-employment. Young people trade in agricultural products, particularly staple grain and horticulture. A thriving grain trading business would promote transport and warehousing. However, this business depends mainly on good rural infrastructure that would facilitate movement of agro produce to the markets. Equally, capital is critical for youth to undertake meaningful businesses in grain trading.

Most major cities in Zambia rely on informal trading markets for agricultural products, which consequently provides employment for youth. However, these markets are sometimes unreliable, as they are characterized by price fluctuations, an inadequate flow of information to farmers, and are controlled by middlemen who reduce farmer's profits. Young people need functioning markets to be attracted into agriculture. Further, international markets for varied agriculture products such as the Democratic Republic of Congo (DRC) provide a great opportunity for the youth to expand their trade and promote local employment. The challenges in marketing of agricultural produce provide a business opportunity for youth employment, as professional marketers and sales agents especially if they take advantage of ICTs. For example, young people can actively generate and manage market information and use internet based applications to communicate with other players who access it.

Cities in Zambia rely on informal trading for the supply of agricultural products (mostly tomatoes and green vegetables), which in itself provides youth employment. Our discussion with the food chain store Spar Choma outlet for instance, revealed that all its 132 employees—except two—were youth. Locally sourced farm produce are key pullers of customers to these chain stores. Other opportunities lie with the youth participating in livestock trading. In Namwala District, young men people buy cattle from farmers and sell to

locally based abattoirs, while others trade in steers in other districts. Some are engaged by the abattoirs as agents who source business and are paid a commission. Where the livestock production is aggressively promoted in all suitable districts countrywide, these businesses can help employ many young people. However, the youth in the district do not belong to any formal grouping. As a result, they lose out on critical information and skills and have a lower price bargain in the markets. Developmental organizations can play a key role in encouraging rural youth to form or join formal groups/institutions, say, own cooperatives that would link them to similar institutions and lobby for their interests.

Processing: Young people can realize their employment needs by engaging in these ventures partly through the development of the cottage industry to process different kinds of foods such as peanut butter, sausages, and cooking oil. The growing urban population provides an opportunity for youth to engage in restaurant businesses to meet the food needs of the people. They can equally get employment in private sector entities that process these commodities, either as machine operators, transporters, trainers, accountants, and managers. In Mpongwe District, for example, a private soya and maize processor (Emman Farming Enterprises Limited) employs 104 workers, from which only 15 are aged above 35 years. The rest are youth (although only 15% of the youths are female). Private sector investors have an interest in entering the agro-processing industry or expanding existing businesses and increase employment opportunities for youth. In Mumbwa District, for instance, one commercial farmer is setting up a milling plant for soybeans and maize to meet local demand and is expected to employ youth. Therefore, facilitating the establishment of more of such processing entities would increase employment opportunities among young people. Among the measures government could put in place in the sub-sector are reduction of the Value Added Tax to manufacturers to lower the cost of processing, lower the policy rate to free resources for banks to lend to the private sector, and continue with efforts to stabilize the exchange rate volatility.

Meat processing (from cattle, goats, sheep, and chickens) is an important area of employment opportunity for the youth. The government needs to expand this subsector by increasing investment in the upgrading of animal production through improvements such as dip tanks, artificial insemination, restocking, animal husbandry, and overall livestock disease management, so as to increase youth employment opportunities as suppliers of livestock and livestock product to large-scale processors. This should increase overall production and meet the industry's increasing local and international demand. Low product quality is one of the challenges in Zambia's agro-processing sector. Therefore enhancing quality will also promote exports. For instance, a large scale agro processing firm Zambeef plans to expand the supply of its products locally and internationally (especially in the great lakes region) and in the process, increase employment among the local youths. Equally, as a growing sector, the dairy sub-sector provides enormous opportunities for youths in Zambia, especially for products such as pasteurized milk, butter, and cheese. In addition, while the aquaculture sub-sector is growing in Zambia, much of it is in production and retailing, with very minimal being processed locally. Therefore, an opportunity lies for youth to access resources for processing fish, for instance, into stock feed and canning. Refrigerated transportation (cold storage) is equally an opportunity for youth employment.

The agro-processing capacity of the industry in Zambia is, however, very limited but can grow to provide more opportunities for youth employment. Though statistics on youth employment in this specific sub-sector are scant, it is apparent that it employs a substantial portion of young people. With the growing national population, the agro-processing subsector will continue to play a key role in taking up youths. However, many young people lack education, knowledge, skills and information, required to engage in value addition, either as

full-time employees or on self-employment basis. Institutions such as the Zambia Association of Manufacturers (ZAM) build capacities and influence policy change for the enhancement of the processing subsector. For instance, through its lobby work, ZAM has influenced government to set up a credit guarantee scheme as well as removing customs duty on various inputs used in the manufacture of stock feed and fish feed. Many young people are unaware of such services but can utilize such institutions to have their interests addressed. For example, ZAM can link youths to industries that require various inputs (raw materials) needed to manufacture goods such as safety shoes, and farm machinery or processing equipment for various agro products.

Grain trading is yet another subsector that can create employment opportunities for youth. However, this business depends mainly on good infrastructure that would facilitate movement of agro produce. Further, thriving grain trading business would promote transport and warehousing which is yet another opportunity for youth employment. Equally, capital is critical for youth to undertake meaningful businesses in grain trading.

Funding opportunities are available for youth to access mainly from traditional sources (banks and microfinance institutions), but the high cost of borrowing coupled with stringent requirements (e.g., demand for collateral) hinder youth participation. In some cases, young people themselves close the doors for borrowing by defaulting when provided with collateral-free loans. However, youths can access funds from institutions such as the CEEC if they have sellable value addition ideas in agribusiness ventures such as pineapple and mango processing. Through its Youth Empowerment Fund, the Ministry of Youth and Sport disbursed over ZMW 43,000,000 worth of soft loans to over 1,200 youth between 2011 and 2014. The success rate of this programme is, however, unclear and threatens its sustainability.

In Kenya, out of the 13 million youth targeted for loans under the Youth Enterprise Development Fund (YEDF), only 158,000 were served with the loans after five years of implementation (MaryStella and Kithae 2015). This brings to question the approach of placing a huge youth employment promotion under a government institution. Evidence from elsewhere, especially where a programme is managed by an independent project, shows successes. For instance, working in partnership with MasterCard Foundation, TechnoServe helped rural young women and men aged 18 to 30 years in East Africa transition to economic independence through the Strengthening Rural Youth Development through Enterprise (STRYDE) in its 5-year program through skills training, business development, and mentoring in Kenya, Rwanda, and Uganda. The programme exceeded its target of 15,000 graduates by over 100%. Further, the graduates increased their incomes by an average of 133%, with 90% saving money regularly, 30% running micro- and small enterprises, 37% engaged in farming, 11% found wage employment while 6% returned to school (Technoserve 2018). STRYDE's lessons are critical for Zambia as the country benefits from it on how to better equip rural youth to find employment, establish or enhance businesses, and to provide reliable sources of income for themselves and their families. To achieve a most desired result, it may be appropriate to render such a programme into an autonomous body if youth employment is to be enhanced.

4.1.2. Employment Opportunities in Tertiary Agriculture

In the tertiary segment of the agriculture value chain young people can be employed or provide services including training in the education sector, veterinary and spraying, offering extension services and marketing agro produce or as employment contractors.

The Zambian government has prioritized economic diversification towards agriculture away from the wasting copper industry.⁴ However, there is a certain level of skills needed for people to participate in modern agriculture. This implies increasing agricultural skills, especially for young people in training institutions. The Technical Education, Vocational, and Entrepreneurship Training Authority Fund established under the Skills Development Levy Act of 2016 to tax employers to fund the promotion of skills development is yet another opportunity for youth to access assistance. Additionally, the extension services in Zambia are extremely inadequate and cannot meet the demand of most farmers. Currently, the extension worker to farmer ratio is estimated at 1:1,200. This high demand for the service provides an opportunity for trained youth to provide extension services by building capacities of farmers who would in turn meet the cost. Most smallholder farmers lack modern knowledge on livestock disease management and general welfare of their animals; they also lack information on aquaculture production and cannot prepare sellable proposals for funding. Trained youth have an opportunity to pass on their knowledge, be remunerated in cash or in kind, and earn a living. Similarly, the use of ICTs provides an opportunity to facilitate these farmer support initiatives.

In this study, some employers we talked to had no difficulty with employing young people without academic qualifications, as they would train them on the job. Others, especially those requiring specialized personnel, (e.g., plumbers, accountants, information technology technicians, veterinary officers, and marketers) testified to the need for professionally qualified youth. This placed a limitation to most unqualified youth. One large-scale employer cited the shift in company policy from employing those who left school, to certificate, diploma, or degree holders, as the latter required less time to train and were more stable on the job. Similarly, with the growing interest in farming by urban residents but without time to manage their small farms, young people can manage these on their behalf. They can also go into contracting and managing employees for the farm owners while charging commissions for the service. To facilitate their implementation of these activities, rural infrastructure (e.g., roads, phone, and radio coverage) and other services need to be developed particularly in remote areas.

With the opportunities outlined, we now discuss in Section 4.2 the ways in which prospective employers can be motivated to employ young people.

4.2. How Can Prospective Employers in the Agriculture Value Chains Be Motivated to Employ Youth?

In this section, we elaborate further on youth employment opportunities provided by employers and the challenges the youth face in plying their role in the sector. As discussed earlier, employment opportunities in agriculture for the youths are immense, especially when the sector is defined broadly. Equally, employers' perceptions suggest that the current levels of employment are in fact youth dominated. Youths are employed as accountants, drivers, harvesters, marketers, among other jobs. Employers also offer on-the-job training for unqualified youth. This, therefore, disproves our hypothesis which states thus, "Even if appropriate incentives are instituted, employers would not increase their engagement of young people".

⁴ From the speech for the Official Opening of the First Session of the Twelfth National Assembly by President of the Republic of Zambia, Mr. Edgar Chagwa Lungu, 30th September, 2016.

However, private sector employer's views suggest that the government has not fully prioritized agriculture. Poor rural infrastructure especially feeder roads limits their ability to expand their agribusinesses. With the natural resource endowment (e.g., land and water, as well as an abundant supply of labor) the Zambian government must more seriously take advantage of the opportunity that agriculture offers, and take the lead in developing the sector. Improving rural infrastructure (such as roads and telephone networks) will reduce production and marketing costs and encourage more rural investments—even in the processing industry. If rural infrastructure remains unattended to, youth unemployment will continue to worsen as the population increases. Equally important is research and development as the key in providing opportunities for new innovations and investment in them.

The prevailing unstable and unpredictable commodity export policies (Chisanga, Chapoto, and Subakanya 2017) prevent employers (especially commercial farms and large-scale processors) from planning and investing sustainably in order to expand their businesses and, consequently, their employment base. Therefore, policymakers need to acknowledge agriculture as a priority, including maintaining stability in the export market to help farmers plan consistently and increase their income so they can set and meet realistic goals to expand production. Stability in agro-exports and reduction of taxes especially for the agro-processing industry would increase private sector capacity to expand and raise youth employment opportunities, besides promoting international competitiveness of Zambian products. It is important to recognize that specialized jobs in agriculture require academically qualified youth. Therefore, skills development plays a key role in promoting youth employment. Similarly, unlike in the 1980s and early 1990s when parastatals operated state farms and collaborated with training institutions by accommodating interns, Zambia's current agribusinesses are reluctant to do so, as interns are perceived to be too costly to utilize. Therefore, students lose out on practical training necessary to prepare them for employment upon graduation. This lack of collaboration was seen by students interviewed and some key informants as a major challenge that needs addressing. As a way of motivating the private sector, the government must provide tax incentives to those who engage interns.

4.3. What Challenges Do Youth Face and How Can Their Abilities and Interests to Engage in Agriculture Value Chains Be Strengthened?

To some extent, the study proved this hypothesis, as most youths perceived agriculture as an unprofitable, dirty, and laborious career confirming most literature on the subject (see for example AGRA 2015; Losch 2014). The majority rarely see the sector beyond farming. As such, they have no interest in taking it up as a long-term career. This contributes to overall high youth unemployment. Among those engaged in the sector, particularly in farming, the majority of the younger youth (aged 15 to 19 years) are there by default or are in school as they come from farming households and are on the move to other sectors when opportunities arise (Machina, Chapoto, and Sambo forthcoming). Yet some youth expressed interest in getting employed in the agriculture sector but that either the job opportunities are limited or they are simply inhibited by challenges discussed earlier in this paper. Table 3 shows the ranking of the challenges identified by youth in three FGDs, with lack of capital being their most critical challenge.

Table 3. Focus Group Discussions Pairwise Ranking of Youth Challenges

Problem	Rank
Lack of finance/credit/capital	1
Low market prices	2
lack of inputs/implements	3
Lack of skills/qualifications	4
Lack of Land	5
Poor road infrastructure	6

Source: Authors.

Clearly, one major limitation is that most youth are oriented towards being employees. This was echoed by most respondents including academics, policymakers, farmer key informants, and youths themselves in learning institutions. Most had aspirations of becoming a high-level employee in a public or private institution and not starting their own businesses. Those who wanted to work in agriculture commonly defined the sector narrowly as primary production (farming). They did not view agriculture as a value chain that also consists secondary and tertiary segments. This definition contributed to their perception of agriculture as an undesirable profession. Their orientation stems from various factors. First, from childhood, a young person is commonly oriented by his or her family to have a white-collar job (e.g., pilot, medical doctor, teacher, office manager, lawyer, etc.). Secondly, both the secondary school and college curricula from the institutions visited (as observed) largely reinforce this orientation and shape a youth's mindset in that direction. In this light, there is a need for a paradigm shift to change the family approach to training their children as well as changing the curriculum in learning institutions to value agriculture in its broad sense. The curriculum requires significant changes, as achieving the intended goals is currently unlikely the way it is.

Further, policy implementation is critical. For example, there is currently a policy pronouncement to teach agriculture science to all pupils, yet in practice schools still regard it as an option mainly due to insufficient qualified teachers. Furthermore, there is need to promote training among youth outside the education system to re-orient them towards agro-entrepreneurship. Finally, young people themselves can address their challenges by gaining necessary information and knowledge and engaging with the private sector, civil society organizations, and government departments dealing with youth, commerce, and industry, agriculture, fisheries and livestock for technical support. Equally, they can form cooperatives as platforms for information and knowledge sharing and accessing capital for farming activities and bulking their produce for the urban market for better returns and save resources locally to accumulate capital.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

Youth unemployment is a critical challenge Zambia faces, as over half of the country's youth are unemployed. Leaving this challenge unattended to would have long term consequences including political instability. This study has however, highlighted existing and potential employment opportunities in the agriculture sector that if implemented can contribute towards addressing the problem. The study found immense opportunities in primary production (mainly crops, livestock, aquaculture, and agro input supply), secondary (agro-processing, trading and retailing), and tertiary (extension services) segments of the agriculture value chain. However young people face challenges that prevent them from taking advantage of these opportunities mainly due to inadequate education, skills, knowledge and information, inaccessibility of finance, lack of access to land and tenure insecurity, high cost of undertaking selected businesses, poor road infrastructure, and their own negative perception of agriculture. As such, the study recommends the following:

1. There is a need for a paradigm shift from the myopic perception of agriculture to view it broadly as consisting of value chains that provide immense opportunities for youth employment. This includes improving the education curricula for both short and long-term training of youth at different levels, so as to increase skills and prospects for engaging in agribusiness entrepreneurship. Further, career guidance programmes in schools and colleges need to be revamped, so as to nurture young people's perceptions towards agriculture and to view the sector broadly as a value chain. Special emphasis needs to target young women who are more disadvantaged. This includes reorienting youth to develop interests and self-confidence to engage in the various segments of the agricultural value chain. The government needs to invest more in education and short-term training; incubation and mentoring of youth along the agriculture value chain is critical, so as to increase skills among youth to get employment or engage in technical agribusiness entrepreneurship activities that include aquaculture, veterinary services, agro dealing, agro-processing, and marketing.
2. Policy makers need to find means of making agriculture profitable by: reducing the cost of borrowing for young people to access capital; reducing user charges in specific subsectors such as veterinary services; and lowering transaction costs in land administration while decentralizing issuance of land titles to promote efficiency in land administration and land tenure security. Collaborative efforts with traditional leaders to promote youth access to land are critical to improving youth employment in agriculture. Persistence of the status quo will limit opportunities to engage in agriculture value chains.
3. Youth targeted financial programmes especially grants to well-selected groups/cooperatives (with benefits accruing to individuals) need to be considered. Equally, value chain players need to further promote savings groups for youth, to affordably accumulate capital for investment in agribusiness.
4. Strengthening links and collaboration between training institutions and agro-investments in the value chain through internship programs is crucial, so as to expose and raise prospects for youth employability.
5. Infrastructure is important for youth operated agribusinesses to thrive. Most rural youths rely on feeder roads to acquire agro-inputs and transport produce to markets. There is need for government to work on feeder roads to facilitate smooth movement of goods and services to and from the markets.

6. There is need for government to promote use of technology such as mechanization (ripping with tractors, planters, tricycles, irrigation equipment, and combine harvesters) and ICTs in rural areas, as these would facilitate young people's access to relevant knowledge and information on available opportunities in production, market trends, and services in the agriculture sector.

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