

Youth involvement in Dairy value chain: Driving force for Transformation and Sustainability of the Tanzanian Dairy Sector

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Abstract

The world population of 8 billion people creates alarm for more food demand, hence the need to increase productivity per available resources. It is pointed out that 50% of Africa's population are youth below 25 years, meanwhile, 66.1% of total population (61million) of Tanzania youths aged between 15-24 years are participating in the national labour force. Therefore, youth involvement in the dairy value chain is inevitable. Thus, this study used data from AADGG database and complemented with data from mini survey to assess youth involvement in the value chain of dairy production given recent past innovation and technology change. The analysis found that majority of the dairy keepers (55%) are above 45, while youth involvement in dairy business is only 13%. This suggests that if no consented efforts are taken to motivate youths to engage themselves in the dairy value chain, the sector will face a serious labour shortage with time. This study also found that 90.5% of dairy farmers have mobile phones with basic features while only 9.5% have smart phones and majority of this category are youths under 35 years. This is an opportunity since youth with smart phones could easily access new technologies that would transform and sustain livestock sector. However, land being factor in agricultural production, the research found that allocation of 53%, 39% and 8% are for crop, livestock, and pasture and or forest production respectively. The region that allocates major land for livestock is Kilimanjaro (66%) and Arusha (63%) which makes it even harder for youth to access land locked in *kihamba* style of land ownership. It is therefore concerted effort is recommended to address key constraints through policies, initiatives, strategies, and programme to eliminate challenges and create enabling environment for dairy business that are attractive to youth to invest.

Key words: *Youth, dairy, transformation, Sustainability, AADGG Database*

1.0 Introduction

World population is now 8 billion and is projected to reach 9 billion by 2050. The number of young people with age between 15-35 years is 1.8 billion (FAO 2014). Most of the youth are in developing countries in Africa and Asia and half of them live in rural areas(FAO 2009). In rural area young people are less opportune than their urban peers, even in participating in the public and developmental plans that provides income. There should be a framework for local and regional authorities on how to

provide better support for young people to be able to stay in rural areas as they have fewer services access. Regardless of their strength, energetic and creative which can change the investment through innovation and technology but still they have less chance in accessing information that can be used in decision making.

Youth has several definitions given by different entities, for example United Nations define youth as those persons of the age group 15 to 24 (UN 2009), African Union categorise youth in age between 15 and 35 (AU 2006), and Tanzania government definition of youth as AU (URT 2007).

Research shows that African is the continent with youngest global population, whereby over 50% of Africa's population is below 25 years old (FAO 2020) the statistic also show that every year 11 million young Africans will join the labour force over the next decade and over 50-70% youth rely on agriculture for food, nutrition, and employment (FAO 2020).

Tanzania population is 61,741,120 in 2022 (NBS 2022) whereby participation of youth at the age of 15-24 in the labour force is 66.1% of total population (ILO 2020). This is the exception given that the youth that participation in the labour force is in sectors of production (agriculture, service, and Industry). Moreover, 7.8 million households (65.3 percent) are involved in agricultural activities and live in rural area. However, majority of youth are participating in the service sector given the innovation and technology that is used by the service sector unlike agricultural sector. Lyatuu et al., (2015) concluded that most farmers still doing subsistence farming (70% of farmers use hand-hoe, 20% animals, 10% tractors) that make agriculture un-paying business and unattractive to the youth. Assume youth have access to proper facilities such as access to land, education, market, storage facilities, and financial support, yet will they still choose to invest in livestock? This is an important question that we should ask ourselves when we think about sustainability of livestock sector and youth involvement in the value chain. Ng'atigwa et al., (2020) on her paper mention factors that challenges youth to invest in livestock business such as access to land, low access to credit facilities, low profit margins, perishability, and limited accessibility of the market of livestock products, less access to extension services, negative attitude towards agriculture and parental influence. More challenges narrated by CGIAR as difficulties accessing green jobs, limited involvement in policy dialogue, insufficient access to knowledge, information, and low level of education (ILRI 2019).

Despite massive effort and political will of government to support and commits different mechanism to engage youth in agribusiness as a strategy to address youth unemployment but most youth still shy away and desire quick and more paying business. The effort that government attempted to attract youth includes, Agricultural Sector Development Programme that encourages the inclusion of youth in all agricultural programme. Tanzania Agriculture and Food Security Investment Plan which promotes youth employment, local government also set fund that provide group of youth credits each

year but still youth do not plan to invest in livestock. Recently, there is initiative which encourage youth to engage in value chain of livestock spearheaded by Ministry of Livestock and Fisheries called Build Better Tomorrow in Livestock and Fisheries (BBT-LIFE). Several research revealed that aspirations of youths' access to resources (land, finance, information), and participation in collective action encouraged youth's participation in agribusiness(Ng'atigwa et al. 2020). This was concluded by (Oyelami and Ajanaku 2019) that inadequate capital and infrastructures constitute the major constraints to youths' involvement in livestock farming as career.

There are massive opportunities available in the value chain of dairy production such as animal feed (fodder production), breeding, veterinary services, fattening, transportation, information sharing, processing, and marketing. If these opportunities are well known by youth, many youth will be attracted to invest in the value chain of livestock production. Looking at the value chain FAO (2020) findings show that young men are often hired or self-employed in herding, marketing, and slaughtering while young women provide the bulk of household labour for animal care and feeding. Research shows that livestock is a real opportunity for young Africans given that in Sub-Saharan Africa millions of tons of milk (14.5) and meat (7.8) were produced in 2020(FAO 2020) but was not enough to sustain the expected increase of consumption of milk by 155% and meat by 170% by the year 2030(FAO 2020).

However, it is unfortunate that the future labour force is facing many challenges today and youth always choose quick earnings. The number of old farmers is increasing in dairy farming, and they cannot comprehend with changing of technology and innovation that is used in the dairy business. Therefore, this paper assesses youth involvement in the value chain of production in dairy farming given recent innovation used in the dairy sector. The Tanzania government shows willing to support youth involvement by providing initiatives in different angles, such as youth initiative for Agribusiness in Building a Better Tomorrow in Livestock and fisheries (BBT-LIFE). The aim is to empower youth and enable them to earn income through incubation centres.

2.0 Methodological Research Approach

2.1 Data Sources and Analysis Techniques

The study is based on a qualitative and quantitative research approach, represented on exploratory, explanatory, and descriptive, based on livestock data and development trend over a period of 2016 - 2022. The study used data from African Asian dairy genetic gains (AADGG) project database that were captured in a period mentioned above. The data and information gathered were used in triangulating the facts that relate dairy production value chain, and its connectivity to the youth engagement in any stage with the chain. Study gathers data and information from several studies conducted within

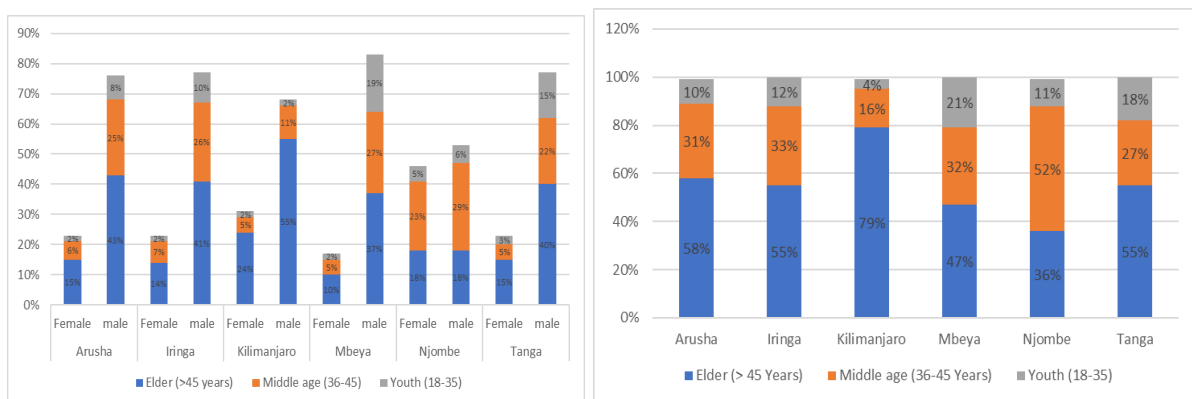
AADGG framework. Results of Data analysis was related with the techniques to see the relevant with previous similar study suggestions and recommendation. The study used STATA to run multivariate analysis.

2.2 The Conceptual Model

The conceptual framework is based on research contribution by ADGG data gathered from 24 local Government Authorities (LGAs). The model is composed of one dependent variable which is labour (youth inclusive) and considered an important stage of dairy value chain production to understand youth engagement and their impact to the development and transformation of dairy sector. Regarding conceptual model, the study used policy and strategies/initiatives/programme developed as one of the moderating variables which relates to youth engagement but also connected to the value chain of dairy sector production from the farmer to consumer.

3.0 Results and Discussion

This research found that the average household size for the regions was $5 \pm 0.02(SE)$. Most of the farmers heading households (57%) were over 45 years of age (Figure 1) and had at least a primary education (98%) while youth proportion in the household that are engaged in livestock is only 13% (figure 2), this implies that major decisions are made by head of household that are over 55%. Except Kilimanjaro, other regions (Arusha, Iringa, Mbeya, Njombe and Tanga) have at least more than 10% of the members that are youth who are directly involved in dairy cattle rearing and do the decision on the management. The middle age (36-45) is more than 30% except Kilimanjaro which has more elderly group who are involved in dairy cattle and do decisions (figure 1).



Source: ADGG database

Figure1. The proportionate composition of households by gender and age group that are directly involved in dairy cattle management and decision making.

Generally, as it was explained above that majority of the dairy keeper (55%) are above 45, while youth involvement in dairy business is only 13%. This implies that most of decision and dairy work are done by the elder group which have less interest with innovation and technology. Therefore, deliberate efforts are needed to attract more youth to the dairy business by unlocking the opportunity available in the sector and avail necessary information that will stimulate youth engagement in dairy value chain.

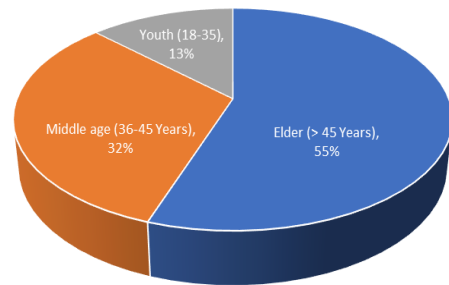


Figure 2. Proportionate composition of age group engaged directly to the dairy production.

Using the innovation in attracting youth to the dairy sector may be important steps but more effort and evidence is needed to show youth that dairy business pays more and faster than other business with the use of available technologies. This research has also found that the majority (90.5%) of dairy farmers had mobile phones with basic features, among those phones, 9.5% were smart phones (mostly of them owned by youth under 35 years). This means that, with the change in the technology and availability of dairy information in social media and applications, then it would be easier to increase the number of youths engaged in dairy production. Take example of the available information on dairy on dedicated applications which will make the youth use phone to acquire skills and market information and having network of input suppliers that could change their business. This show great perspective that more youth who are involved in the dairy have good access to information and can use new technology to develop their dairy business.

Creativity and innovation in Dairy Sector

In recent years, there have been evidence of innovation packages that are more friendly to youth to be engaged in dairy business in any stage of value chain. This study found that most of innovation are created, and availed to beneficiaries which are the dairy farmers (however major criterial to get this innovation is evidence of dairy cow investment). This made youth find it had to penetrate in the dairy industry simply because they do not have much capital nor access to finance. This study found that 8.2% of youth revealed that they have access to new technology or innovation that is developed for dairy farmers, and they have adopted the technology. However, youth who are not yet in the dairy business but living in high milk shade area, were asked if they have interest or would like to be engaged in dairy, they said they will be ready but with the condition that they learn and acquire skill and adopt the best technology that is more modern than traditional methods of dairy farming that have being used by their fore father.

Access to Land and use

Research shows that more than half (53%) of the land available for agricultural production is allocated for crop production while livestock allocation is 39% and remaining 8% is located for pasture and or forest use. Land located for Livestock keepers in all the regions belonged either to an individual, or to the family (Figure 3), there were very few (less than 0.01%) farmers use communally land (i.e. Iringa and Njombe) (figure3). Each regions had different interest and priorities in land allocation whereby Kilimanjaro located more land for livestock (66%) followed by Arusha (63%), other regions have lower

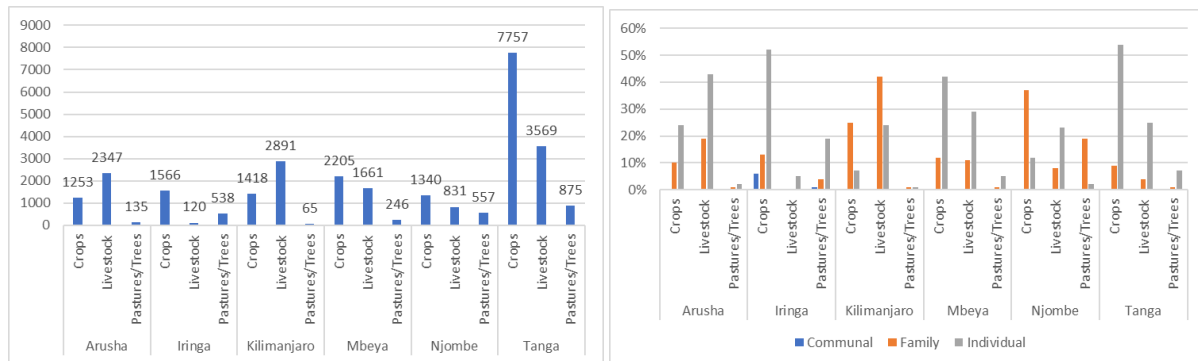


Figure 3. Household engaged in crop, livestock, pasture/tree and proportional of using land as family, communal and or individual.

than 40%, but Iringa was critical with only 5%. The reason for Iringa may be due to economic reason where tree and crops are more dominant (have more economic value compared to dairy) than livestock business, hence most households integrate agroforestry with their dairy production systems. It is not surprising that Kilimanjaro land is mostly owned by family members unlike other regions which is own by individuals. Kilimanjaro has cultural heritage of “*kihamba*” system where land belong to all family members, and it passes from one generation to another. However, the timing for passing the land ownership is not define nor predictable. When youth were asked about this traditional *Kihamba* system, they had mixed feelings, some were desperate saying the land can be only pass on when parents are tired and old enough to work, therefore they find it better and comfortable traveling far seeking for potential land.

4.0 Conclusion

This study found that youth are important as they are huge in number, energetic and adapt quick to technology, therefore it is important to make then an explicit target group in livestock investment and this should well be stipulated in the policies, strategies, and programmes for smooth transformation and sustainability of dairy sector, this was also supported by a conclusion made by FAO (2020). There are substantial efforts needed to address key constraints facing youth especially in the area of access to land, access to finance/capital, markets and skills. Engage youth in existing training/extension

services and avail them with the evidence that encourage them to invest in the dairy value chain is necessary step in order to use available potential of huge number of cattle that are available in Tanzania. Government and development partners need to have concerted effort to support development of youth focused on creativity and enhance innovation in production by availing enabling environment for dairy business in the livestock sub-sector.

References

AU. 2006. "African Youth Charter."

FAO. 2009. "Livestock in the Balance THE STATE OF FOOD AND AGRICULTURE."

FAO. 2014. *Youth and Agriculture: Key Challenges and Concrete Solutions*.

FAO. 2020. "FAO-Infographic-Youth-Livestock-Africa-En." *FAO*.

ILO. 2020. *Labour Force Survey*. Tanzania.

ILRI. 2019. *CGIAR Research Program on Livestock Youth Strategy*. Nairobi.

Lyatuu, Eliamoni Titus, Fengying Nie, and Cheng Fang. 2015. "Economic Growth Beyond Structural Transformation in Tanzania: Small and Vulnerable Economy." *International Journal of Developing and Emerging Economics* 3(June):1–23.

NBS. 2022. "Matokeo Ya Mwanzo Ya Sensa 2022." *National Bureau of Statistics*.

Ng'atigwa, Adella Albert, Aloyce Hepelwa, Mastewal Yami, and Victor Manyong. 2020. "Assessment of Factors Influencing Youth Involvement in Horticulture Agribusiness in Tanzania: A Case Study of Njombe Region." *Agriculture (Switzerland)* 10(7):1–17. doi: 10.3390/agriculture10070287.

Oyelami, B. A., and A. O. Ajanaku. 2019. "Assessment of Youth Involvement in Livestock Farming as a Career in Oluyole Local Government, Ibadan." *International Journal of Forest, Animal and Fisheries Research* 3(4):146–53. doi: 10.22161/ijfaf.3.4.2.

UN. 2009. "Definition of Youth."

URT. 2007. "Tanzania National Youth Development Policy."