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Role of Sericulture in Uplifting Socio-Economic Status of Casual Workers and Constructors: A Case Study of Sheema, Kiruhura, Kween and Mukono District in Uganda

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***Keywords*— Sericulture, Employment, Socio-economic impact, Status, Development.**

***Abstract*—** *This study was undertaken in the four sericulture research stations of Sheema, Kiruhura, Kween and Mukono in Uganda with the main objective of documenting the socio-economic impact of sericulture project on the livelihood for permanent and temporary casual workers and constructors/ builders at different sericulture stations. Sericulture is labour intensive projects that need both permanent and temporary casual workers and constructors/ builders who are required for smooth running of daily sericulture field activities. Sixty five casual workers and constructors were randomly selected as respondents to the structured questionnaire aspects related to the factors such as sex, education, age, marital status, type of family, nature of employment, household expenditure, household assets acquired and challenges faced by casual workers and constructors/ builders were collected by well-structured questionnaire through personal interview method. The results obtained revealed that more 52.3% male workers were employed than female workers, 36.9% of the respondents were in the age group of 31-40 years, the biggest percentage 73.8% were married, 50.8% of the respondents were working as casual workers whereas 49.2% as constructors/builders, a majority 83.1% of respondents were working as permanent workers and only 16.9% as temporary workers. A majority of the respondents reported that the salaries earned at the end of month has positively impacted and changed their livelihoods of many respondents and this has help them to meet all the family needs and requirements such as family feeding, educating their child's, buying clothing for themselves and for their child's, health, pay utilities bills, drinking alcohol, others have managed to acquired different family assets such as land, some have managed to build houses, mobile phones, radios, televisions solar panels, bicycles and motorcycles and livestock's such as cows, goats, sheep, birds, pigs, turkey and ducks, this can fetches them little economic support for their families and can serve as addition income.*

I. INTRODUCTION

Sericulture is the art and science of rearing of silkworms for the production of raw silk and its end product is silk. Silk is referred as "Queen of fabrics" and is well known for its natural colour, purity and unusual lustre. It is natural fabric, animal oriented and produced from silkworm (Hiware 2012). Sericulture refers to conscious mass-scale rearing of silk producing organisms in order to obtain silk from them (Ganga 2006). Sericulture is an important labour intensive, agro-based industry providing gainful employment to unemployed/underemployed in the rural and semi-urban areas and facilitates economic development and improvement in the standard of life of the people. It is the only cash crop that gives returns within 30 days (Kamili and Masoodi, 2000). Sericulture is the only cash crop which provides frequent and attractive returns in the country through year. Most of the crops in world can be grown once or twice in a year but sericulture can be practiced 4-8 times in a year and thus provide regular employment to the rural and urban communities which ultimately check the migration of population from rural areas to urban areas (Thapa & Shrestha, 1999); and hence, it is considered as an essential tool for the rural development for improving the standard of living of human population of village level. These opportunities include planting of mulberry gardens, management of mulberry gardens, harvesting mulberry leaves to feed silkworms, silkworm rearing, production of silkworm seed, reeling of silk cocoons, processing silk fabrics, printing, dyeing and finished product making and their marketing (Thangavelu, 2002; Mahapatra, 2009).

Sericulture industry has played a vital role in improving economic development in several countries across the world. The leading producers of silk in the world are China, India, Uzbekistan, Brazil, Japan, Republic of Korea, Thailand, Vietnam, DPR Korea, and Iran but a few others that produce minute quantities are recognized; Kenya, Botswana, Nigeria, Zambia, Zimbabwe, Bangladesh, Colombia, Egypt, Japan, Nepal, Bulgaria, Turkey, Uganda, Malaysia, Romania, Bolivia (International Sericultural Commission, 2018; Nagaraju, 2008). Uganda was ranked 20th out of 22 silk producing countries with 3.10 metric tonnes of silk produced in the year 2019. (International Sericultural Commission Statistics, 2020).

Socio-economic benefits of sericultural technology transfer is labour-intensive farming enterprise employing 1 million workers in China, 7.9 million people in India, and 20,000 weaving families in Thailand. (International Sericultural Commission, 2020) Sericulture can help keeping the rural population employed and to prevent migration to big cities and securing remunerative employment; it requires small investments while providing raw material for textile industries. Casual workers and constructors/ builders are required for smooth running of daily sericulture field activities such as planting of mulberry gardens, management of mulberry gardens, harvesting mulberry leaves to feed silkworms, silkworm rearing, production of silkworm seed, reeling of silk cocoons, yarn making, weaving and fabric processing, printing, dyeing and finished product making and their marketing (Ahmed & Rajan, 2011).

Agriculture is the core of the economy and the primary source of employment, employing 73 percent of the country's (Uganda) labor force primarily in the rural areas and jobs available on the market lack required working experience, low qualifications and about 30 percent of the youths who are institutionally qualified in Uganda every year are unable to find jobs, and the situation is even worse for semi-skilled and unskilled ones. Youth who remain unemployed or underemployed and those who do not exploit their full potential, are often associated with high incidences of drug abuse, prostitution and gambling (Peter Magelah and Barbara Ntambirweki 2014), leading to high poverty and criminal cases (Tregenna, 2015). Big problem in Uganda and Africa is having high increased rural-urban migration in search for new opportunities and improve their lives such as better paying jobs, inadequate land access, and family disputes in urban areas and failure to find better new opportunities resort to extreme poor conduct namely; prostitution and sex abuse, drug abuse and any other criminal acts (Tangri & Mwenda, 2013). Rural urban migration is one of the causes of youth unemployment this affects youth between 18-30 years. Over 29.3 percent of the Uganda youth population migrate to urban centres for better opportunities (Mukwaya et al, 2011). In Uganda the biggest problem is youth unemployment between the age of (15-30 years) comprising of approximately 77 percent of the country's population (UBOS, 2014).

The International Monetary Fund advises that government of Uganda has to create 600,000 jobs annually to stay on track with its poverty reduction goals (IMF 2015). Ugandan government has put in a number of interventions to address youth unemployment since 2013 and has been expedited by over 6,181 projects by December 2015 with an aim of providing youth with grand opportunities to invest in productive ventures (National Planning Authority, 2017) such as Youth Livelihood project, Directorate of Industrial Training (DIT) the government has endeavoured to train youth in various vocational skills to promote self-development in a network of about 110 government institutions across the country, Youth SACCOs, parish development model and Non-Government Organizations (NGOs) such as Action Aid

Uganda (AAU), Uganda Youth Network, Uganda Youth Development Link (UYDL) have been at the fore front to ensure youth change their mind-set and attitude towards work and take opportunity to make a living. Through the trainings offered, youth have gained skills and built potential to compete in the job market (Mbasalaki, 2011). Currently in Uganda, one of the leading research institution promoting sericulture project (Tropical Institute of Development Innovations) under the project entitled Commercialization of Sericulture Technologies and Innovations in Uganda is government funded project through Ministry of Science, Technology and Innovation strategic intervention in addressing the Uganda National Development Plan (NDP) II. The project started in 2018 with one sericulture research station at Rubare sericulture station in Sheema district now after three years (2018-2022) establishment it has been spread to more than thirty two (32) districts and continue to spread to other districts in Uganda, a total of 100 technical staffs, around 800 casual workers and 150 constructors/builders are employed, all these employees earn a living in form of salaries and wages from sericulture related activities. The creation of more job opportunities through sericulture industry has employed many youths as casual workers, constructors/ builders and technical staffs within the sericulture value chain which would help arrest unemployment problem in Uganda.

II. METHODOLOGY

The study was to examine the role of sericulture in uplifting socio-economic status of casual workers and constructors under commercialization of sericulture technologies in Uganda. The study was conducted in four districts namely Sheema, Kiruhura, Kween and Mukono. The study composed of 65 casual workers and constructors who have been working on different sericulture research stations were randomly selected. Casual workers and constructors are actively engaged in different activities of sericulture such as planting of mulberry, management of mulberry gardens, harvesting mulberry leaves to feed silkworms, silkworm rearing, reeling of silk cocoons, yarn making, construction of rearing houses and construction of staff houses etc. The pre-tested interview questionnaire covering activities such as demographic characteristics of respondents, socio-economic impact, income and livelihood improvement and challenges faced by respondents was used for data collection and the data collected was analyses using SPPS (version 26).

III. RESULTS AND DISCUSSION

According to the demographic characteristics of the respondents studied in Table1, a majority 52.3% of the respondents interviewed were male while as 47.7% were female and this implied that sericulture project employed more of male as compared to female casual workers and constructors. Majorities 64.6% were found to be household head, only 35.4% were not the house head. This is partly as a result of social and cultural norms in community that both young men and women must be married in order to be considered heads of their households. Jera and Ajayi (2008) in their study reported that traditional power structures and controls over household productive resources are less favourable towards women than male-headed households. The majority 36.9% of respondents belonged to the age group of 31-40 years, meaning that they are energetic enough to perform the manual work in sericulture field activities such as planting of mulberry gardens, management of mulberry gardens, harvesting of mulberry leaves to feed silkworms, silkworm rearing, reeling of silk cocoons, silk yarn making and construction of rearing houses and staff houses, 73.8% of the respondents were married and only 10.8% were single. Saghir et al (2005) in their study reported that majority (76.5%) of the farm workers in rural areas were married followed by (17.5%) who were unmarried. This showed that respondents worked very hard to take care of their families and other needs. Most of the respondents had attended formal education. It was found out that 49.2% of the respondents had ever attended primary education, 24.6% had attained secondary education though dropped out at lower secondary. The government of Uganda launched a free Universal Primary Education in 1996 (UPE) and Universal Secondary Education (USE) in 2007 with the aim of provide greater access to primary and secondary education to do so tuition-free for the majority of children throughout the country. The results obtained from Table, revealed that majority 52.3% of the respondents had 0-5 people living in their families followed by 43.1% who had 5-10 peoples in families.

Table1. Demographic characteristics of respondents

Characteristics	Classification	Frequency	Percent (%)
Sex of the respondents	Male	34	52.3%
	Female	31	47.7%
Household head of the respondents	Household head	42	64.6%
	Not house head	23	35.4%
	18-30 years	16	24.6%

Age of the respondents	31-40 years	24	36.9%
	41-50 years	14	21.5%
	51-60 years	9	13.8%
	Above 60 years	2	3.1%
Marital status	Married	48	73.8%
	Single	7	10.8%
	Divorced	5	7.7%
	Widowed	5	7.7%
Education	Illiterate	6	9.2%
	Primary	32	49.2%
	Secondary	16	24.6%
	Tertiary	11	16.9%
Number of respondents living in household	0-5 members	34	52.3%
	6-10 members	28	43.1%
	11-15 members	3	4.6%

IV. EMPLOYMENT UNDER SERICULTURE AND SOCIO-ECONOMIC IMPACT OF SERICULTURE

According to the results obtained from Table 2, revealed that 50.8% were employed as casual workers and 49.2% were employed as constructors/builders. A majority 83.1% of the respondents were recruited on permanent and only 16.9% on temporary basis and they were directly and indirectly employed for smooth running different sericulture field activities such as mulberry cultivation, maintenance of mulberry plantations, harvesting of mulberry leafs, silkworm rearing, cocoon production, cocoon reeling, yarn making, weaving and fabric processing and construction of rearing houses and all these activities were carried out by respondents who were mainly gaining livelihood in form of employment and being paid a monthly salaries in the sericulture sector casual workers and constructors. These results suggested that the casual workers and builders had a very positive attitude towards sericulture development in Uganda as a major source of employment and income. Narsimha (2003), in their study reported that Sericulture enterprise generated a remunerative and meaningful employment to the farming communities. Malik et al (2008), in their study reported that sericulture played very important role in natural resource utilization for socio-economic upliftment of livelihoods, employment and income generation. A majority 55.4% of respondents were earning between 50,000/= to 100,000/= per month, implicating that these respondents worked on only one acre of mulberry or worked on few days in construction department and these who earned between 100,000/= and above, this implied that they worked on more than one acre of land or for more days in constructions, 9.2% of the respondents were working as mansons and 13.8% earning between 600,000-800,000/= were working as foreman/supervisor and engineer in the construction department. The results from study showed that Commercialization of Sericulture Technologies and Innovations was the main source of their daily income to support family's needs. Thangavelu (2002), Mahapatra (2009) in their study reported that silk industry had tremendous socio-cultural and traditional contributions and played a big role on developing rural economies. About 53.8% of the respondents were saving part of their monthly income and 46.2% were not saving any money. This means that respondents who were savings will help them have a reserve saved fund to cater for their needs in case of shortage of funds. And the respondents noted that the wages/salaries they earned at the end of month mainly helped them to meet all the family needs and requirements such as family feeding, educating their child's, buying clothing for themselves and for their child's, health, investments, pay utilities bills and others mainly it to drinking alcohol. This means that their monthly earns mainly helped them to meet family needs and requirements by buying different types of food to improve on their healthier diets and educationing their children are giving them a chance to acquire knowledge on various fields of education and by obtaining knowledge.

Table2. Nature employment under sericulture, salary, savings and borrowing money

Characteristics	**Classification**	**Frequency**	**Percent (%)**
Nature of Employment	Casual worker	33	50.8%
	Constructors/Builders	32	49.2%
Status of the respondents employment	Permanent	54	83.1%
	Temporary	11	16.9%
Most important source of livelihood	Income from Sericulture	58	89.2%
	Income from agriculture	5	7.7%
	Income from livestock	2	3.1%
Monthly	50,000-100,000	36	55.4%
	200,000-400,000	14	21.4%

Salary and wages	400,000-600,000	6	9.2%
	600,000-800,000	9	13.8%
Saving	Saving money	35	53.8%
	Not saving money	30	46.2%
Household expenditure	Family feeding	64	98.5%
	Education	50	76.9%
	Buying Clothing	62	95.4%
	Health and treatment	55	84.6%
	Investments	20	30.8%
	Pay utilities bills	15	23.1%

Respondents have managed to acquired different family assets such as land; some have managed to build houses. This means that respondents who have acquired land and build houses, shows that their economic status majority of the respondents reported that the salaries earned at the end of month has impacted positively on their lives as they has changed. Acquiring assets such as mobile phones, radios and televisions by respondents could easily receive timely information regarding sericulture project, other government policies and communication was also easily among workers. Respondents who have acquired solar panels, bicycles and motorcycles, this means that respondents having acquired solar panel and installed it could help them to use at home and even their children's can extend their reading hours and also eases their transport means to go for work at different sericulture stations. Trivedi and Sarkar, (2015) in their study reported that sericulture was an important labour intensive; agro based industry providing gainful employment to unemployed/underemployed population in the rural and semi-urban areas and facilitates economic development and improvement in the standard of life of the casual workers. The respondents who have acquired different livestock such as cows, goats, sheep, birds, pigs, turkey and ducks. This showed that respondents who have engaged themselves in rearing of different livestock's have direct impact on the respondent's status because this fetches them little economic support for their families and can serve as addition income.

Table 3. Household assets and livestock's acquired

Characteristics	Classification	Frequency	Percent (%)
	Land	8	12.3%
	Television	3	4.6%
	Build a house	6	9.2%
Household assets acquired	Motorcycle	1	1.5%
	Bicycle	5	7.7%
	Solar panel	5	7.7%
	Radio	17	26.2%
	Cell phone	18	27.7%
	Sofa sets	2	3.1%
Household livestock's acquired	Cows	15	23.1%
	Goats	32	49.2%
	Sheep	4	6.2%
	Birds	40	61.5%
	Pigs	10	15.4%
	Turkey	2	3.1%
	Ducks	1	1.5%

According to the results obtained from Table 4, revealed that 100% of the respondents reported lack of garden tools such as hoes, pangas, gumboots and overalls. This means that they were not providing such tools because most them could easily take them way and claim that were lost from the garden. A majority 76.9% of the respondents reported the challenge of delayed salary payment after work done. The organization (TRIDI) get funds from government of Uganda through Ministry of science and technology were they have control over releasing funds therefore it delays their monthly salaries. About 35.4% of the respondents claimed that they were low/under payment for work done and this was due to respondents who work on only 1 acre or less than an acre and others who work for few days in constructing of the rearing houses at different sericulture research stations could get low/under payment at the end of month. Respondents of Kween sericulture research station reported the challenge of scarcity of water and housing problem and could be the delay of funds to solve such problems. Few respondents reported the challenge of discrimination and abusive treatment by their field supervisors but this could be solved by top management through addressing these issues with field supervisors and their workers at different sericulture stations.

Table 4. Challenges faced by casual workers and constructors/ builders

Description	Frequency	Percent (%)
Delayed Salary/wage payment	50	76.9%
Low/under payment	23	35.4%
Discrimination	3	4.6%

Abusive treatment	4	6.1%
Lack of equipment's to use at the station	65	100%
Scarcity of water	10	15.4%
Housing problem	15	23.1%

V. CONCLUSION

Commercialization of sericulture technologies has emerged in Uganda as the most important cash crop for providing employment opportunities for rural and urban communities. This study focused on how sericulture has uplifting socio-economic status of casual workers and constructors. The results obtained revealed that a biggest number of respondents 83.1% were employed on permanent basis and only 16.9% were working as temporary workers, a majority of respondents reported that the salaries earned at the end of month has impacted positively on their lives through acquiring different assets as such land, some have managed to building houses, mobile phones, radios and televisions etc., and also helped them to meet all their family needs and requirements such as family feeding, educating their child's, buying clothing for themselves and for their child's, health, investments, pay utilities bills and others mainly it to drinking alcohol. However 100% of the respondents reported lack of garden tools such as hoes, pangas, gumboots and overalls, a majority 76.9% of the respondents reported the challenge of delayed salary payment after work done. There was need to document the impact of sericulture project on the livelihoods of respondents involved after a period of time.

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