



Level of Awareness of Silkworm Rearing among Farmers in Ido Local Government Area, Ibadan, Oyo State, Nigeria

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Abstract

Silkworm is a profitable agro-based practice which many developed Countries have used to improve the livelihood of their people and increase their foreign exchange earnings. This study aimed at ascertaining the level of awareness of silkworm rearing among the farmers in Ido Local Government of Oyo State Nigeria, with the view to improve the livelihood of the farmers and inhabitants of Ido nation building. The study investigated the level of awareness of silkworm rearing by Ido farmers, assessed the level of interest in silkworm rearing by the farmers, and assessed the sources of information on silkworm rearing by the Farmers. Two-stage sampling technique was used to select 88 farmers from five farmers' associations that existed in the local government. Structured questionnaires were administered to acquire demographic information as well as information relating to their level of awareness of the practice. The data collected were subjected to descriptive analysis. The result of the study showed that 70.1% and 29.9% of the respondents are male and female respectively, with 89.7% of them married while 2.3% are single. About 17.2% have tertiary education, 44.8% have secondary education and 18.4% have only primary education. Only 1.1% are aware of exotic silkworm rearing through friends and relatives, 12.6% are aware of indigenous silkworm rearing, the information of which was passed down from old generation to new ones. The study also revealed that there is no silkworm rearing activity in the LGA as the farmers do not have silkworm farm, no factory for post-harvest processing/no market for silkworm cocoon, and because there was no knowledge of silkworm rearing, the farmers showed no interest in Silkworm rearing. The study concluded that despite the acceptability and profitability of silkworm rearing, it has not been accepted nor practiced by the people of Ido LGA. It therefore becomes imperative for government, non-governmental organization and other stakeholders to put up an awareness programme to sensitize farmers in the area of this practice as well as provide funds and enabling environment for the establishment and strive of this profitable venture.

Keywords: *Silkworm; Ido Local Government; Awareness; Indigenous; Exotic and Profitable*

Introduction

Sericulture is an agro-based industry which involves the rearing of silkworm in order to obtain natural silk fiber. Silkworm rearing was introduced from India to Nigeria through Forestry Research Institute of Nigeria, Ibadan in 1988 (Ashiru, 2002). It can be practiced in varying agro climatic condition and suited to the different production system (Singh *et al.*, 2002) silkworm is the common name for the silk-producing larva of any of several species of moths which is used by the cottage and small scale industry as well as big silk industry. Silk is commonly referred to as "the queen of fibers" because it is a smooth, shining very soft, lustrous, fabulous,

strong durable and unique natural protein fiber produced by silkworm (Chowdnury, 2006.) The insect belongs to phylum: Arthropoda, order Lepidoptera and family. Bombycidae, Satumidae, Lasiocampidae, Thaumetopoidae (Peigler, 1993). Silkworms (*Bombyx mori*) are monophagus insect and feed primarily on the leaves of mulberry plants. However, recent findings revealed they can as well feed on the leaves of osage orange (Patil *et al.*, 2017). Commercially, the silks are produced from two families of silkworms industry Bombycidae (mulberry) and Satumidae (non-mulberry) (Datta *et al.*, 2001). The silk produced by silkworm has various uses which include production of Fabrics, tyre,

Parachute, bullet-proof materials, stitching materials, gunpowder bags, lawyer's wig etc.

Sericulture processes have various activities which include soil ploughing and maintenance, silkworm rear, mulberry breeding and cultivation, silkworm rearing and mounting, harvesting, reaching the cocoons, Cocoon drying, silk reeling, reeling, raw silk testing to the production of silk products by manufacturing and weaving as well as the silk thread and silk industry. The industrial and commercial user of silk contributed to silkworm production all over the world, especially in the income of small or medium scale farmers and farmers in the Southern area (JAICAF, 2007) and the plantations used as feed for the silkworms user in natural resources conservation (Gamble, 2011) and tool for poverty reduction (JAICAF, 2007). Herald (2005) adoption of technology create employment opportunity for social and religious benefit. Silk worm rearing can be practiced on small to medium-sized land holdings in rural areas, either as a subsidiary or main occupation by all categories of people especially in rural and semi-urban areas. To this end, sericulture can be a viable job opportunity and income-generating activity for rural women, jobless youth and university graduates of our Country.

Awareness is the state or level of consciousness where sense data can be confirmed by an observer. It is the knowledge or perception of a situation or fact. Awareness depicts the show of concern and/or how well-informed interest is in a particular situation or development. Awareness is the first among the five steps towards the adoption of new technology among farmers. This shows a knowledge that something (silkworm rearing) exist or an understanding of a situation or subject (silkworm rearing) at the present time. It is an essential factor for dissemination of environmental knowledge and communication of its fundamental elements (Ghulam *et al.*, 2018). Awareness on the subject matter; Silkworm rearing in the study area is important in order to give the farmers knowledge and if they already have the knowledge, then they would know the direction they need to make changes to improve and be successful. A better understanding of the features of farmers' awareness and influencing the awareness of farmers is needed to formulate appropriate policies and programmes to cope with the acceptance of technology or innovation among the farmers. However, there is need to assess the level of information that farmers in the study area have about this agro-based venture with the view of intensifying awareness efforts of the profitable venture and opportunities of which will help in nation-building.

Materials and Methods

Study Area

Ido is a local government area (LGA) in Oyo State, Nigeria. Its headquarters is in the town of Ido. It has a land area of 986 km². It covers the area spanning Apata, Ijokodo, Omi-Adio, Akufo and Apete. This LGA shares boundaries with Oluyole, Ibarapa East, Akinyele,

Ibadan South-West and Ibadan North-West LGAs in Oyo State and also with Odeda LGA in Ogun State (Azeez *et al.*, 2021). The council formerly had six wards, which had been increased to ten for easy exercise of franchise. Among the major towns within the LGA are Ijokodo, Ido, Omi-Adio, Apata, Apete, Akufo and Bakatari as well as about 612 villages which include Ogunweide, Dada, Olowofela, Apooyin, Oderemi, Odetola, Erinwusi, Tade, Alagbaa, Iku-senla among others. On the account of extensive fertile soil, which is suitable for agriculture, the basic occupation of the people is farming. There are large hectares of grassland which are suitable for land and aquatic animal domestication, vast forest reserves and rivers. People in the area grow varieties of cash crops such as cocoa, kola nut, palm oil, timber and food crops such as maize and rice. The area is also suitable for a wide range of edible fruits (Kareem and Olayemi, 2019).

Sampling Technique, Data Collection and Data Analysis

Two Stage Sampling was adopted for the study. Identification of Ido farmers' associations was done which are five in numbers; Agbelere Multipurpose Farmers Association Ido, Agbesunbare Agbofiseti, Omi-Adio Agbelere, Agbeloba Aba-Aremu Elere Adeogun Apapa consisting of numbers 30, 32, 35, 40 and 38 respectively. 50% sampling intensity (i.e 50% of the total population of respondents from each farmers association in the study area) was used to choose the respondents 15 from Agbelere, 16 from Omi-Adio Agbelere, 18 from Agbeloba Aba-Aremu, 20 from Agbesunbare and 19 from Elere Adeogun to make a total of 88 in numbers. Data was collected using a well-structured questionnaire among 88 farmers in the study area. The data collected were subjected to descriptive statistical analysis using a statistical package for the social science (SPSS) software package. Descriptive statistical tools used included frequency counts and percentages.

Results and Discussion

Demographic Characteristics of Farmers in the Study Area

Table 1 showed the demographic information of the respondents. The results showed that 69.32% of respondents were males while 30.68% were females. This indicates that few females are involved in farming in the study area. This agrees with the assertion that women constitute about 30-80% of the rural agrarian labour force (Aguilar *et al.*, 2015; FAO, 2011; Kilic *et al.*, 2015; Namara *et al.*, 2010). Another reason for this low involvement of women can be as a result of their role not being widely acknowledged. They are mostly at home which eventually made their engagement to be viewed as an extension of domestic activities and as such are not recognized and rewarded as opined by Ndanga *et al.*, (2013). The high involvement of men in agriculture is in agreement with the conclusion of Bello and Ogundeji (2021) that in Nigeria, conventionally men have dominated the agricultural sector. The majority (88.64%) of the respondents were married,

2.3% were single, 2.27% were divorced and 2.27% did not disclose their status for reasons best known to them. Most of the farmers (69.32%) in the study area have a household of between 1-5, and this could be attributed to some level of education that most of them possess. This is making them shift from the old notion that spouses and children should form a vital source of unpaid labour which can contribute in improving and boosting agricultural production. This goes in line with the statement of Swanson (2008) that education enables farmers to make informal decisions regarding production and marketing and also manage their lives successfully to cope with everyday problems and to realize their opportunities. Most (88.64%) of the respondents are married. Married people are more than the singles in the study area, and this might be connected to the fact that married people have more advantages of family labour than singles. This is further supported by the findings of Jibowo (2000) that high percentages of the rural population are married. Ekong (2003) and Olawumi *et al.*, (2010) also stated that being married is a highly cherished value among farming households in Nigeria. In terms of education qualification, 17.05% of the respondents had tertiary education, 44.32 % had secondary education while 18.18 % had primary education and no formal education and 20.45% didn't disclose their academic qualification. The implication of this finding is that most of the farmers are not too educated but averagely educated. The level of education of farmers could influence their decision making in agriculture. The respondents in the study area belong to all three main religions in Nigeria; 32.95% are Christians, 57.95% are Muslims and 4.55% are traditional worshippers. The result of the study also shows that 92.05% of the respondents are Yoruba, 2.27% are Hausa and 1.14% are Igbo.

Level of Awareness of Silkworm Rearing by Ido Farmers

The level of awareness of silkworm rearing in the study area was very low (13.64%) (Table 2). This section recorded the results of investigation on whether the farmers in the study area were aware of silkworm rearing, investigated the communicative process (through which medium) of their awareness, the types of silkworm and their uses. Table 2 revealed the level of awareness of silkworm rearing in the study area, 13.64% of the respondents are aware of silkworm rearing, majorly indigeneous types and the name identified with it by them is *Anaphe venata* known to feed on Obeche leaves (*Triplochiton schleroxylon*) and mulberry leaves. Few respondents (13.64%) got to know silkworm rearing through their friends. The respondents identified silkworms as best used for cloth making (13.64%) although other uses are for lawyers' wig production, bulletproof and air craft tire likewise edible. The reason for this low level of awareness could be because the innovation is exotic and has not really gained much acceptance among the farmers. Those that are aware of silkworm rearing only got to know through their friends, but not practicing. This research finding shows that Silkworm rearing has not spread to the farmers.

Level of Interest in Silkworm Rearing by Ido Farmers

All the 88 respondents sampled (100%) are not interested in silkworm rearing in the Ido Local Government. The study also revealed that there is no silkworm rearing activity in the local government as 86.36% of the respondents do not have silkworm farms. Almost all the respondents (90.91%) gave reasons why they cannot leave their job for silkworm rearing. Among the reasons are no capital (7.95 %), no factory/market for silkworm after harvesting (11.36 %), no knowledge of rearing (2.27%). Others are difficulty in rearing, low gain in turn, and satisfied with the current and no support from government having 3.4, 7.95, 2.27, and 4.55 % respectively. There are two common types of silkworm vis-à-vis indigenous silkworm (*Anaphe venata*) locally known as "ekuku" whose silk had been sought after and harvested from the *Obeche* trees found in the wild by our fore-fathers. The second one is the exotic silkworm (*Bombyx mori*) known in local name as mulberry silkworm. Only very few percentage of respondents (1.14%) are aware of exotic silkworm rearing while 12.50% are aware of indigenous silkworm. Reason for few people being aware of indigenous silkworm rearing could be due to the fact that the old generation in the area that have used the silk from the insect to produce a particular fabric known as "sanyan" have passed the technology or the information down to the new generation. This factor is also responsible for about 13.64% of them being aware of the usefulness of the insect.

Sources of Information of Silkworm Rearing by Ido Farmers

Figure 1: Sources of information

Most of the respondents (85.23%) in the study area failed to respond to their source of information on silkworm rearing although 14.77 % of respondents sourced their information from relatives that could be friends, neighbour, family among others.

Conclusion

The study revealed that most of the sampled farmers are male, married and averagely educated. Despite the acceptability and profitability of this venture especially in countries like China, India and Japan, it has not been accepted nor practiced by farmers in Ido Local Government, Oyo State Nigeria. The edibility and profitability among other benefits can be harnessed and explored to solve problems of hunger, poverty and create job opportunities for the dwellers of the local government thereby boosting the economy on the long run. Therefore, Government, NGOs, Research institutes and other developmental stakeholders are pivotal in achieving these goals. These can be achieved through organization of sensitization programme, trainings, more research, provisions of grant and funds to support and encourage the farmers and provision of marketing avenues for the product of the venture. Farmers should be supplied with technical-know-how, and adequate equipment for the processing of end product (cocoon) and provide market for the product from the venture. There should be education/ orientation for the farmers

which could afford them opportunities to be exposed and trained on these profitable ventures. This kind of programme could be organized by Forestry Research Institute of Nigeria. Also, more awareness should be given to the farmers about indigenous silkworm in the study area.

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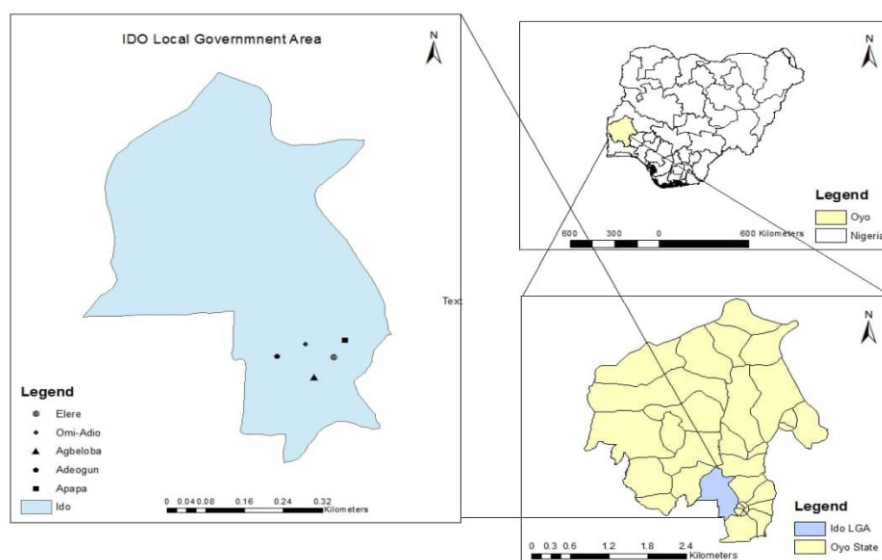


Figure 1: Map of the study area

Table 1: Demographic information of respondents

Demographic Information	Frequency N =88	Percentage
Sex		
Male	61	69.32
Female	27	30.68
Age		
21-30	5	5.7
31-40	21	24.1
41-50	38	43.7
51 and Above	23	26.4
No Response	1	1.14
Marital Status		
Single	2	2.27
Married	78	88.64
Widowed	3	3.41
Divorced	2	2.27
No Response	3	3.41
Educational Qualification		
Primary Education	16	18.18
Secondary Education	39	44.32
Tertiary Education	15	17.05
No Response	18	20.45
Occupation		
Farming	65	73.86
Trading	13	14.77
Civil Servant	4	4.55
Artisans	5	5.68
No Response	1	1.14
Major Occupation		
Artisan	6	6.82
Civil Servant	3	3.41
Farming	66	75.00
Trading	12	13.64
No Response	1	1.14
Minor Occupation		
Artisan	13	14.77
Farming	18	20.45
Trading	36	40.91
No Response	21	23.86
Household Size		
5-Jan	61	69.32
10-Jun	16	18.18
15-Nov	3	3.41
No Response	8	9.09
Religion		
Christianity	29	32.95
Islamic	51	57.95
Traditional Worshippers	4	4.55
No Response	4	4.55
Tribe		
Yourba	81	92.05
Hausa	2	2.27
Igbo	1	1.14
No Response	4	4.55

Source: Field Survey, 2022

Table 2: Level of awareness of silkworm rearing in the study area (N = 88)

Level of awareness	Frequency	Percentage
Are you aware of silkworm rearing?		
Yes	12	13.64
No	50	56.82
No response	26	29.55
If yes, how did you get to know about silkworm rearing?		
Television	0	0
Radio	0	0
Newspapers	0	0
Friends	12	13.64
No response	76	86.36
What are the types of silkworm you know?		
Exotic	1	1.14
Indigenous	11	12.50
Both exotic and indigenous	0	0
No response	76	86.36
What are the uses of silkworm?		
Cloth making	12	13.64
Lawyers' wig production	0	0
Air craft tire	0	0
Bullet proof	0	0
No response	76	86.36
Is silkworm edible		
Yes	12	13.64
No response	76	86.36

Source: Field Survey, 2022

Table 3: Level of respondent's interest in silkworm rearing (N = 88)

Level of interest in silkworm rearing	Frequency	Percentage
Are you interested in silkworm rearing?		
Yes	0	0
No	88	100
Do you have any silkworm farm in Ido Local Government		
Yes	0	0
No	76	86.36
No response	12	13.64
Can you leave other job opportunities for silkworm rearing		
Yes	0	0
No	8	9.09
No response	80	90.91
If no, why?		
Not interested	53	60.23
No capital	7	7.95
No factory/Market	10	11.36
No knowledge of rearing	2	2.27
Difficult to rearing	3	3.41
Satisfy with job	7	7.95
Low gain in return	2	2.27
No help from government	4	4.55

Source: Field Survey, 2022

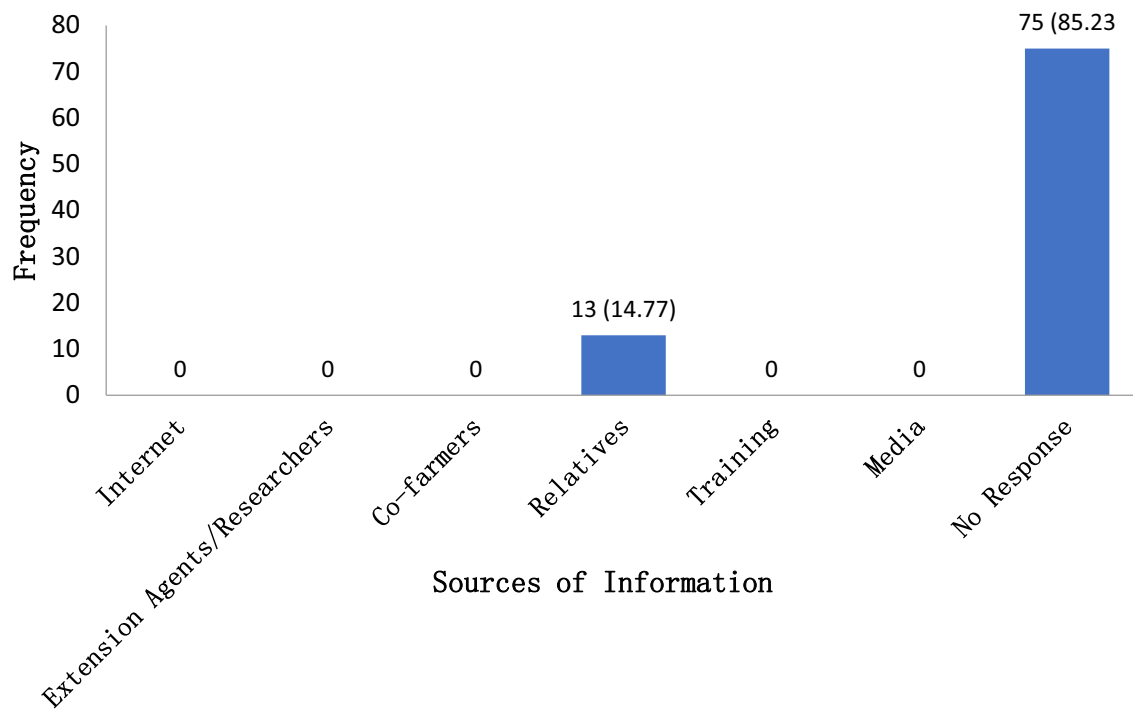


Figure 1: Source of information of silkworm rearing