

Effect of “Preservation and development of indigenous chicken breeds and poverty alleviation through rearing in family level” project in Coastal belt area in Bangladesh

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Abstract—Poultry sector in Bangladesh has been playing a vital role to increase its gross domestic product. Indigenous chickens known as Deshi (native) chickens has huge market demand and are the choicest product towards all the consumers. Very few observed the chickens were produced commercially rather than it is widely reared throughout the country by the rural women. Grameen Jano Unnayan Sangstha(GJUS), a local NGO of Bhola district in south-west part of Bangladesh has promoted native chicken production (NCP) commercially to establish as a regular income option of indigenous people, who are marginalized, wage labour and fishermen mostly. The field findings have revealed its significant scopes according to the results of NCP and inclusive market system development by 3 year. It has increased regular income of 25% households, where the women play a significant role in production and input services. Over the periods, the annual production and profits of a producer have been increased to 15-18 hens from 6-7 hens and BDT.4701 from BDT.1144 on average respectively. The producers' incomes and business volume are increased more than previous. A number of factors have contributed to increase the profits. Especially, the chick mortality rate decreased from 15-18 to 2-4. The study is such an attempt to explore the findings and learning of potentialities of NCP. The paper is prepared using the secondary data, unpublished documents, production cycle analysis (Management data include- Housing practice, feeding practice, Vaccination, Medication and Production data include- Age at first egg laying, body weight at first egg, total egg production, weight of the egg and primary data based on consultation with the relevant stakeholders, practical working experience and field findings.

Index term: *breed preservation, Coastal belt Production, Indigenous chicken, market demand, poverty alleviation, rural women,*

INTRODUCTION:

Bhola is only the district of island in Bangladesh located in the lower reaches of the Ganges basin. This island district is formed by the sediments of the main three rivers; Padma, Meghna and the Brahmaputra which flows down from the Himalayas. This district is located in the southern part of the country, on the east of Meghna and on the west by the Tetulia river bed. The river is the only means of communication with this district, separated from the whole country. There are about two lakh people lives in this island. The earning sources of most of the people in this district is farming land, catching fish and rearing domesticated animals. Socio-economically, this district is far behind compared to other districts. Despite various adversities it is very famous for the catching fish and domestic animal rearing because of this district is surrounded by water. Here, The most of the family rear native chicken due to, the disease frequency is comparatively low. Indigenous chicken is widely reared throughout the country by rural people since time

2009) and play a vital role to poor rural households. Due to different predator and following traditional methods, the native chicken farmers did not get benefited. “Preservation and development of indigenous chicken breeds and poverty alleviation through rearing in family level” related ventures is acting on technical support besides with the preservation of breeds.

In addition to holding these points in the present publication some successful story of farmer level have been published in this attachment. It is hoped that this publication will make it easy to extend this technology and uses in farmers level. Different types of problems exist in this district such as; illiteracy, over population, lacking of consciousness, higher mortality rate of children, higher maternal mortality rates during pregnancy, malnutrition, lacking of health consciousness, river corrosion etc. Due to these reasons it is not possible to improve the socio-economic condition of the people of this district. Being a revering community, men of them choose fishing as their main profession. Besides this, the women has been contributing to the family for a longtime by rearing chicken. As the epitome of meghna in the bhola district is identified as a part of Hilsha reproduction, the fishing is prohibited two times in a year here. During the jatka season, all types of fishing are stopped in the river. Even when fishing is stopped, they lead their live by rearing native chicken.

Background:

“Grameen jana unnayan sangstha (GJUS)” operated by PKSF’s agricultural unit, fisheries and livestock units and KGF program which extends different agricultural related technologies in sadar upazila of Bhola district. Native

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immemorial. Village poultry is still popular to millions, eight thousand years after domestication(Alders and Pym,

chicken is reared in almost every area of Bhola district. Smallholder family poultry is an integral component of the livelihoods of poor rural households, and is likely to play this role for the foreseeable future (FAO,2008a). It makes a substantial contribution to food security and poverty alleviation in many countries around the world (Dolberg,2008) . However, by analyzing the biostatistics of native chicken rearing in the defined areas we found that, before 4-5 years that means in 2012, there are about 25-30 numbers indigenous cock and 4-5 numbers indigenous hen were reared in every house. The pullets produced from the local chicken were reared and provided in various places, including Dhaka and the people earned about 13000-16000 taka per month. At present the number of chickens per house has dropped to an average 13 (Among them the number of adult cock is 5-6 and adult hen is 1-2 respectively)

Table-01: Status Of Native Chicken in Previous Years

Serial No.	Year	Number of total chicken per house	Number of total adult chicken per house
01	2012	40-45	25-30
02	2013	35-40	20-25
03	2014	30-35	15-20
04	2015	25-30	10-15
05	2016	15-25	6-10
06	2017	10-15	4-5

(Source: District Livestock Department and collecting information locally)

Due to which reasons the number of chickens per house is decreasing, among them; attacked by the remarkable predators (e.g. Crow, cat, dog etc) to the one day old chick and growing chicken, not administration of basic vaccines for disease prevention , no proper brooding management, not ensure proper food management, etc. Considering the above mentioned issues, PKSF started implementation the project called "Preservation and development of indigenous chicken breeds and poverty alleviation through rearing in family level" under KGF program through a subsidiary by GJUS.

Goal of the activities:

To ensure the socio-economic development of the poor people and ensure food security of the poor by keeping the domestic poultry breeding conservation and increasing it at the family level.

Objectives of the activities:

Reduce the mortality rate of baby chick and growing aged chicken. Establishment of local domesticated baby chick rearing system by ensuring special housing and management during hatching and brooding of chickens. Establishment of indigenous poultry rearing as a sustainable income generating activity through integrated management at member level. Extension of indigenous poultry farming through clustered way.

Area covered by the activities:

The organization has implemented the project activities of veduria union of sadar upazila of Bhola district.

Household coverage under the activities :

A total of 500 members were included in the three year program. Of these, a total of 500 members have been registered in the first year that means in 2017-18 fiscal year and 200 numbers household have been registered in the 2018-19 fiscal year and this is being increased in phase order. The program is being implemented in a bunch of ways.

Program implementation model:

All technology related financial support and technical support is being provided through member activities. In this case, special housing system for domestic poultry, egg-nesting, antiseptics, vaccination are provided at the member level. Each member is provided training, management and counseling through improved chicken breeding and technical support. A domestic chicken hatchery and parent stock farm is being set up at the agency level to accelerate the project's member-level activities. Native chicken grower and broiler groups are being created from the baby chicks produced by that hatchery supplied through members level. Besides this, necessary workshops and training are organized in effective connection with the various actors (Government hospitals, shopkeepers, stockiest, chicken businessman, different companies, etc) of the value chain to reach the consumers stage of domestic chicken produced by the farmer level.

Special types of housing:

The growing chickens spend more time in this habitat, as a result ,they get protection from the attack of the outside's predators. This house is designed in such a way that baby chick cannot get out of the house but hen can come out and eat food. As a result, there is no need of extra feed cost. Creep feed is provided to the chick as well. This cause the chick to grow faster and reduce their mortality rates. However, the hen starts laying eggs within short times, as the chick remains inside the house.



Fig.: Structural model of special types of housing for growing chickens

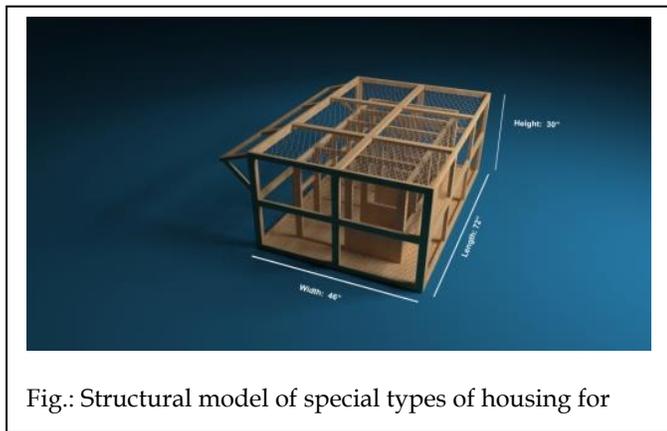
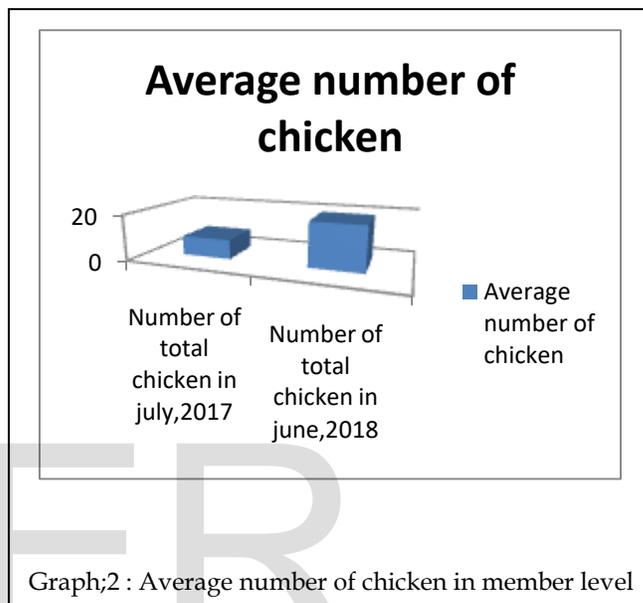
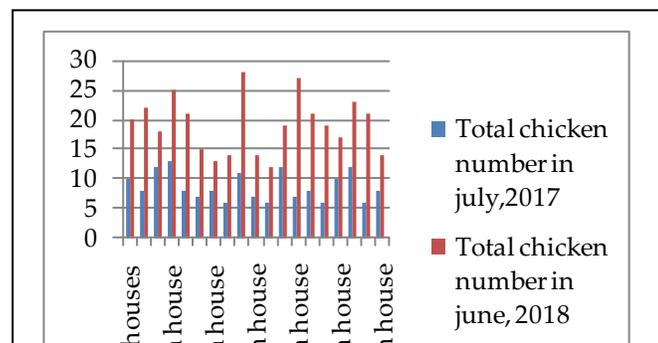


Fig.: Structural model of special types of housing for

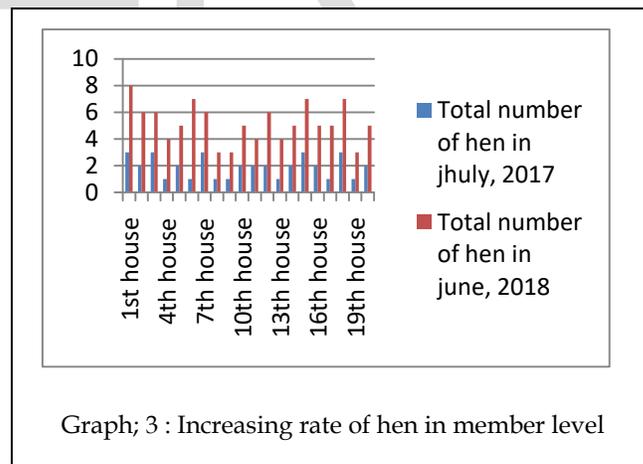
Results and Discussions:

Productivity of indigenous chicken breeds may be doubled with improved diets and management conditions (Chowdhury et al. 2006). The indigenous chickens have not attained their full production potential due to exposure to risks that influence against their survival and productivity under extensive management conditions. In our study, at the beginning of the project, the number of domestic chickens per household was 5-7. But due to technical and financial support of the project, the number of chickens has increased from 14 to 18 per household. In addition, the number of hen has increased from 4-5 to 8-10 on average, In the work area, the death rate of chickens has dropped from 50% on average 5-6%.

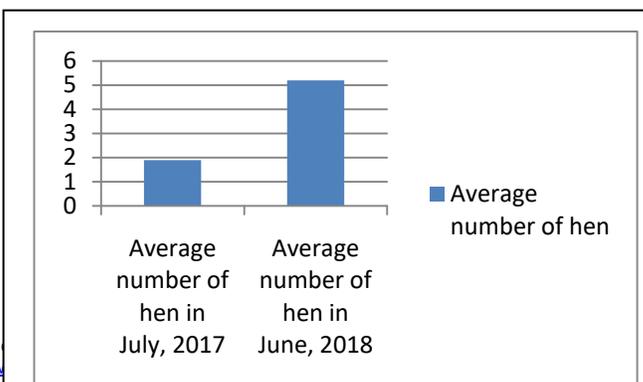
The following figure illustrate the present situation of chicken rearing :



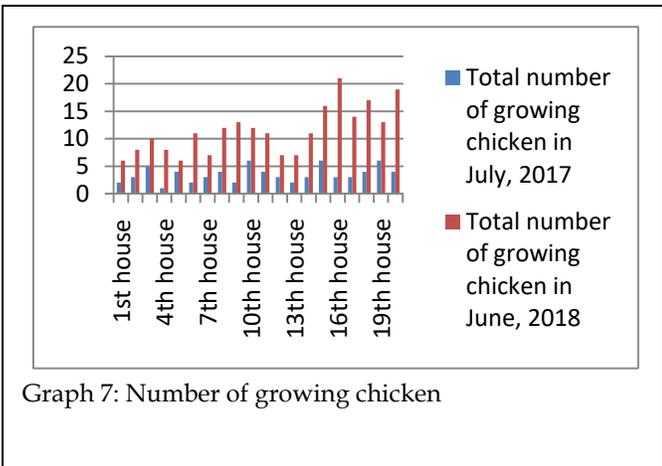
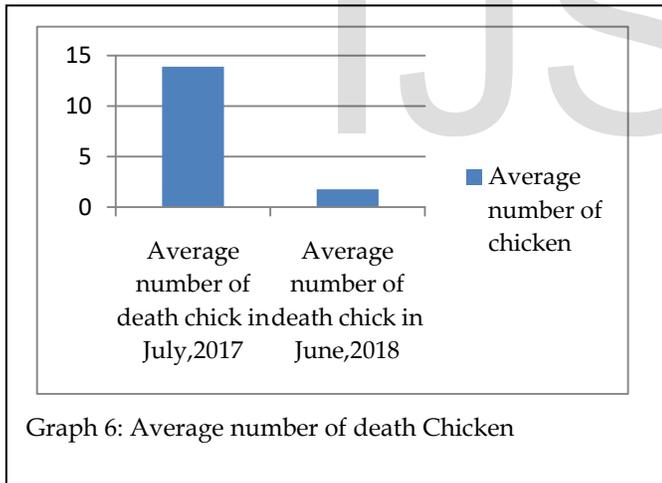
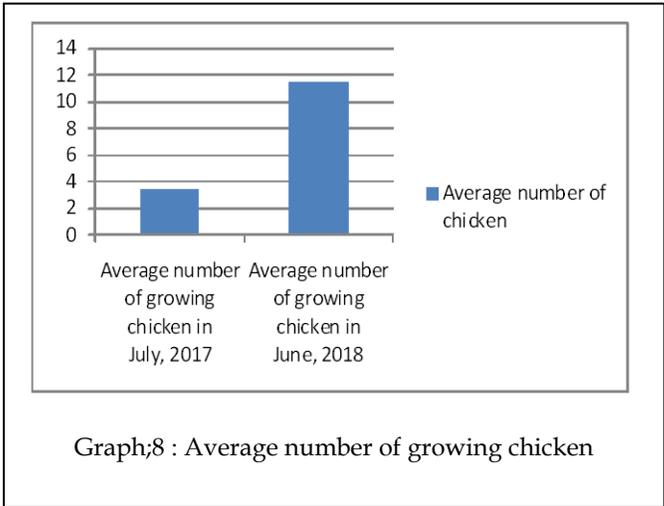
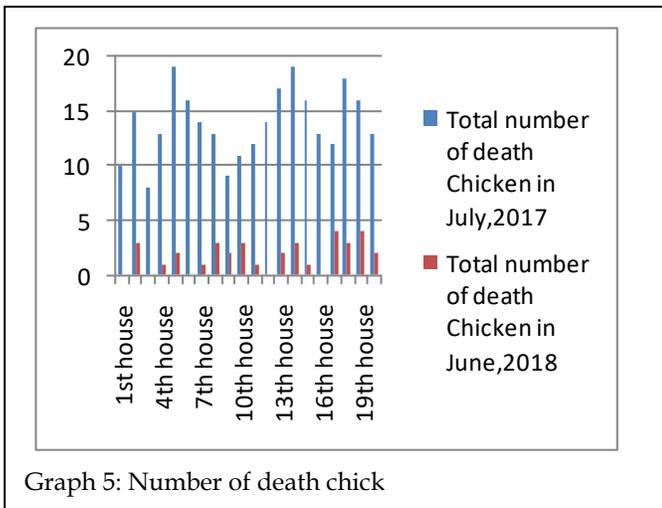
Graph;2 : Average number of chicken in member level



Graph; 3 : Increasing rate of hen in member level



Graph 4: Average increasing rate of hen in member level



Hen are coming in production very faster and laying more eggs. Apart from this, the chick does not die in the attack of the predator and the physical growth rate (The average weight of a growing chicken at the age of two months is about 250 grams, which was about 100-150 grams before) of the chick is quite good. Empirical and circumstantial evidence from many developing countries shows that poultry development interventions can bring significant benefits to households, in terms of contributions to food security, women's empowerment and poverty reduction (Dolberg, 2008; Pica-Ciamarra & Dhawan, 2010). The marked increase in demand in recent decades for poultry products and livestock products, in general, has led most poultry-related development interventions to attempt to intensify traditional poultry systems (FAO, 2009). The members sold three month old indigenous chickens produced in this process for 200-250 taka. Due to the success of the implementation activities under the project, there was a lot of enthusiasm among the people of the area, they purchase special housing for Indigenous chickens designed under the project and rear chickens in their initiative. As a result, the local residents are able to earn more income from native chickens, among their other activities.. The indigenous chickens have not attained their full production potential due to exposure to risks that influence against their survival and productivity under extensive management conditions. Everyone's demand of protein is fulfilled. Village chickens make substantial contributions to household food security throughout the developing world. Indigenous chicken serve as an investment and source of security for households in addition to their use as sources of meat and eggs for consumption and of income (Muchadeyi et al., 2007)

Conclusion:

The village production system comprises more than 80% of world poultry population, and is allocated to 90% of poultry products in some unindustrialized countries (Niknafs et al.2013). Indigenous chickens, despite their low growth rate and egg production, are generally better in disease resistance and could maintain higher level of performance under poor nutrition and high environmental temperatures compared to commercial strains under village systems (Yousefi Zonuzi et al. 2013). Over the last 50 years, genetic selection poultry has proven to be extremely successful (Wolc,2015). Efforts have been made to develop vaccine for the prevention of diseases in chickens in different parts of the world. Moreover this new technology for save the native chicken is really very effective for the rural people. By this technology they can earn money easily and lead their happy life.

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Conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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