



Creating Job Opportunity by Providing Day Old Chicken and Vertical Vegetable for Disabled Family as a Model for Community in Bacho Bore Kebele, Jimma Town, Ethiopia

Gamachu Wakgari^{1,*}, Dagafu Jabessa², Zalalem Tesso², Sisay Yohannes Gagabo³

¹College of Agriculture and Natural Resource Management, Bonga University, Bonga, Ethiopia

²College of Agriculture Natural Resource Management, Dembidolo University, Dembidolo, Ethiopia

³College of Natural and Computational Science, Bonga University, Bonga, Ethiopia

Email address:

gammewak2018@gmail.com (Gamachu Wakgari)

*Corresponding author

To cite this article:

Gamachu Wakgari, Dagafu Jabessa, Zalalem Tesso, Sisay Yohannes Gagabo. (2024). Creating Job Opportunity by Providing Day Old Chicken and Vertical Vegetable for Disabled Family as a Model for Community in Bacho Bore Kebele, Jimma Town, Ethiopia.

International Journal of Sustainability Management and Information Technologie, 10(1), 1-11. <https://doi.org/10.11648/ijjsmit.20241001.11>

Received: December 22, 2023; **Accepted:** January 16, 2024; **Published:** February 1, 2024

Abstract: Developmental Team Training Program (DTTP) is a component of Community Based Education (CBE) which is educational philosophy of Jimma University implemented by post graduate programs (PG) by creating a team having different disciplines, and then the team exposed for two months in a community. In accordance we have done DTTP project in Bacho Bore kebele of Jimma town on prioritized problem which was accessibility creating job opportunity for disable youth; with the general objective to create job opportunity for Disabled group in the Community by providing a day old Chicken and vertical vegetation in Bacho bore Kebele, Jimma Town. Information was been collected on constraints in poultry production in the study area revealed that lack of their own job opportunity because this family is disabled and lack of knowledge on modern day old chicken rearing on small land. Therefore, building the capacity of youth, disabled group and communities through training and structuring scientific base was the main goal of this project. Two hundred (200) day old Chickens and vertical vegetable were provided to the disabled family as his own job opportunity and for the sources of livelihood. Therefore, we suggested that Jimma University should go and intervene in the communities who are disabled and poor persons around this to improve their livelihood through DTTP of post- graduate as well as Community Based Training Program (CBTP) of under graduate.

Keywords: Chicken, Disabled Family, DTTP, Intervention

1. Introduction

1.1. Background

Community -based Education (CBE) is the philosophy of Jimma University which provide as a core of academic excellence by combining training, service and research. It produces competent, receptive, and goal-oriented professionals with the necessary attitude, knowledge, and abilities. It is predicated on the idea that student actions correlate with predetermined learning goals and objectives. Student Research Programs (SRP), Development Team Training Program (DTTP), and Community Based Training Program (CBTP) are the three components [9].

Graduate students run the Developmental Team Training Program (DTTP), which assigns students to local communities and involves them in various agricultural projects to help them identify local problems and improve their problem-solving abilities.

The program's goals are to identify the political, social, economic, and environmental aspects of a particular community; to diagnose the community and create an action plan that will allow us to recommend appropriate intervention measures; and to organize interventions using the concepts and tactics of multi-sectorial approach, community participation, and Arrange and carry out problem-focused study [9].

Thus, the primary tenet of Jimma University is that all of

its staff members and students interact directly with the community in order to gain a real-world understanding of social issues that arise outside of the classroom. The steps involved in solving problems that CBE uses to solve them include choosing a location, creating tools for inquiry, collecting data, processing and analyzing information, listing and ranking issues, creating an action plan, implementing the intervention, and evaluating the program. In an effort to provide community-based training, Jimma University College of Agriculture and Veterinary Medicine has been conducting various research projects at farmers' fields.

Through the growth of associated micro-enterprises that are entirely or partially in charge of the provision of inputs and the processing, packing, and marketing of outputs as well as the provision of services to the sector, poultry production promotes the local economic development of urban areas [14].

Additionally, by giving vulnerable populations like the urban poor, women, the crippled, orphans, and the unemployed a respectable living, it might aid in the reduction of poverty and the socioeconomic inclusion of these groups [6].

There are an estimated 60.04 million chickens in Ethiopia, of which 88.5% are native, 6.25% are hybrids, and 5.25% are exotic varieties raised in backyard, small-scale, and large-scale commercial production systems [2].

The production of eggs for hatching, sale, and domestic consumption, as well as the production of birds for sale, processing, replacement, and domestic consumption, are the advantages that poultry in Ethiopia offers [22].

In addition to being the most flavorful and easily digestible animal meat and containing all of the essential amino acids needed by humans, chickens have a short generation interval and a higher feed conversion efficiency, making them an inexpensive source of animal protein. Eggs are also a rich source of nutrients. Additionally, chickens play a sociocultural and religious function in Ethiopia, particularly in rural communities [31].

An average individual should consume 65g of protein minimum daily, of which 36g (or 55.4%) should come from animal sources. Poultry production needs to get adequate attention if food self-sufficiency and the fight against malnutrition are to be accomplished in emerging nations, especially Ethiopia [28].

With regard to reducing protein deficiencies, poultry plays a crucial role because it provides meat and eggs, two major sources of eatable animal protein. Through the creation of revenue and improved household food security, poultry production has the ability to reduce poverty [10].

Additionally, it has a great deal of potential to accelerate economic growth, which will be especially advantageous to the poorer segments of society. Moreover, it guarantees speedy returns with little financial commitment [19].

The term "chick brooding" describes the first eight weeks of a chick's life, during which it is incapable of maintaining its body temperature on its own without external heat. In Ethiopia's rural areas, day-old chicks are nurtured by natural

brooding. Throughout the whole 81-day incubation and brooding period, the broody hen that is raising and tending to a small number of chicks stops laying eggs [5].

It has been demonstrated that day-old chicks in Ethiopia are the preferred brooders for promoting the day-old chick poultry extension package under Ethiopian family farming settings [5]. As a result, the growth performance of broiler chicken is increased. Groups of layer type day-old chicks placed to the electric and hay-box brooders, respectively, showed mean mortality rates of 18.7 and 19.6% [16].

In Ethiopia, growing vegetables is a significant economic activity. The production system includes commercial farms controlled by both public and private companies, as well as smallholder and home gardening [9].

For the purposes of this project, "proper" vegetables are those that have fruit and leafy herbaceous parts that can be eaten raw or cooked, such as lettuce, head cabbage, Ethiopian cabbage/kale, tomatoes, green and red peppers, Swiss chard, celery, green beans, etc. Furthermore, "proper" vegetables include root and tubers like beetroot, carrot, potatoes, sweet potatoes, taro/godere, and bulb crops like onion, garlic, and shallot [33].

1.2. Problem Statement

There might be a lot of stalled issues in the neighborhood with development interventions. To assist the community in identifying solutions for the bottlenecks, other development initiatives may also be carried out. Nonetheless, there have been instances where people with disabilities have not received as much consideration. Even if they might have offered assistance, it was only to help them slightly with their daily necessities. A greater proportion of disabled people are beggars than dependents. However, if they find a straightforward and worthwhile business opportunity, there are those who are willing to work and transform.

With this backdrop in mind, we developed the day-old chicken and vertical vegetable farming project in consultation with the disabled people in Bacho and Kebele as an urgent source of income. In addition, this project aims to give disabled people a sustainable method of generating revenue while also enhancing their morale, developing their talents, and providing them with an alternative means of supporting their dependents and themselves.

1.3. Objectives

1.3.1. General Objective

To create job opportunity by providing a day old Chicken and vertical vegetable for Disabled family as a model in the Community, Bacho bore Kebele, Jimma Town.

1.3.2. Specific Objectives

1. To create job opportunity for disabled family by providing day old chicken,
2. To create job opportunity for disabled family by providing vertical vegetation,
3. To construct house for the day old chicken and vertical vegetation infrastructure for vegetable farming,

4. To train the community from this a model.

2. Literature Review

2.1. Chicken Production Systems in Ethiopia

Based on factors including breed, flock size, housing, food, health, technology, and biosecurity, the Ethiopian poultry industry can be divided into three main production systems: large-scale commercial, small-scale commercial, and scavenging [23].

Ethiopia's most common poultry production system is the scavenging system, which is by its own nature lowly productive [29].

2.1.1. Village Indigenous Production System

Indigenous village production system with low to no inputs for housing, food (scavenging is the only source of nutrition), and healthcare; low biosecurity; high off-take rates; and high mortality. As a result, the only financial outlay is for the foundation stock, a few handfuls of local grains, and maybe some basic night shades, which are only used at night in the family homes. Although some hybrids and exotic breeds may be kept under this method, native chickens are kept the majority of the time [3].

2.1.2. Small-Scale Intensive Production System

Large-scale commercial farms provide the foundation stock and feed for the majority of small-scale chicken operations [11]. The medium amount of feed, water, and veterinary service inputs, along with the low to minimal biosecurity, define this production method. A few diseases that cause death, lower weight gain, decreased egg output, and decreased market value of infected birds affect small-scale production systems [17].

2.1.3. Large-Scale Commercial Production System

The large-scale commercial production system is a very intensive system that involves, on average, more than 10,000 birds housed in indoor environments with a medium to high degree of biosecurity. This system is mostly dependent on imported exotic breeds, which have high input needs for things like nutrition, housing, medical care, and cutting-edge management techniques. About 2% of all chickens in the country are thought to be employed in this industry. Higher levels of productivity under this system, where chicken production is fully focused on the market to satisfy the enormous demand for chicken in large cities, are its defining characteristics. Chick mortality rates have dropped to just 5% thanks to the implementation of some sort of improved biosecurity measures [32].

2.2. Importance of the Chicken Production Systems

Almost all African rural communities depend on chicken production as a major agricultural activity that maximizes the use of locally available resources. Even though smallholder chicken farming has long been overlooked in development themes, a growing number of experts and development

agents now agree that smallholder chicken production is crucial to reducing poverty and ensuring food security for households. It offers opportunities for off-farm employment and revenue generation, as well as a means of giving gifts and making religious sacrifices [7]. By turning leftover grains, human food, and insect matter into useful protein sources like meat and eggs, scavenging chicken also contributes to the waste disposal system [4]. Poultry farming by smallholders is regarded as a revenue-generating activity that aligns well with the idea of small-scale agricultural development.

2.3. Introduction of Exotic Breed

The introduction of enhanced (exotic) breeds has been the most significant impact [24]. Although the precise date and location of the first batch of exotic chicken breeds introduced into Ethiopia for genetic improvement are unknown, it is generally accepted that the importation of exotic chicken breeds dates back to the early 1950s [30]. The absence of a complete poultry technology package extension to end users hindered previous attempts to improve the genetics of Ethiopian village chickens through exotic chicken extension [26].

In order to increase stock productivity, adopting improved poultry production techniques may need the transfer of relevant new technologies and local expertise [26]. The usage of complete packages in conjunction with enhanced exotic breeds that are more productive is now one expansion option to try. The Rhode Island Red (RIR) breed, which can be used for both egg and meat production, has garnered increased interest and preference from Ethiopia's Ministry of Agriculture's (MoA) Extension Department. Furthermore, the Fayoumi breed was brought into Ethiopia's rural areas with the assumption that it would perform better, adapt more readily, and be more resistant to disease than other exotic breeds [27].

Day-old chicks (DOC), which were either imported from Egypt, Germany, Holland, and other countries, pure exotic pullets, cockles, and fertile eggs to farmers overseas as well as to poultry breeding and multiplication facilities, are some of the ways that exotic breeds can be introduced. The popular exotic breed can be used as a crossbreed or as pure [8].

2.4. Improving Indigenous Breeds

In Ethiopia, native chicken (97%) are raised via a customary family-based scavenging management system and are widely dispersed throughout various agro-ecological zones. Unlike foreign varieties, native chickens are better at scavenging and foraging, have great disease tolerance, make excellent mothers, and are acclimated to hard environments and subpar nutrition. Furthermore, indigenous hens provide smallholders significant potential for enhanced revenue and protein output. In order to improve the nutritional status of rural households, it is imperative that the growth of local chicken in these areas get the required support [18].

2.5. Poultry Breed Improving and Distributing Centers (PBIDC)

A center for the breeding and multiplication of poultry is one that chooses novel and enhanced varieties of chicken and carries out artificial or natural insemination. The center can provide farmers in various locations as well as chicken farms in the city with better-breed layers and broilers. Some PBIDCs propagate and offer improved chicken breeds to both urban and rural areas using their own parent stock and hatchery facilities.

Initially, the PBIDCs were primarily tasked with providing farmers in rural areas with improved poultry breeds; however, as they developed stronger ties with urban agricultural departments, they were also able to distribute to urban and per-urban areas. Poultry multiplication and distribution facilities are run by the government and the commercial sector around the nation [20].

2.5.1. Governmental Centers

The goal of government-owned poultry breeding and raising facilities is to produce superior exotic breed layer, broiler, and dual-purpose chickens. Several contemporary chicken farms are operated by Ethiopia's higher education and research institutes for training and research purposes. For the benefit of the Ministry of Livestock, Feed and Drugs (MoLFD), NGOs, and private citizens, the institutes provide viable eggs, day-old chicks, pullets, and cockerels. There are fourteen contemporary breeding and/or rearing centers run by the MoLFD [4].

2.5.2. Private Centers

The majority of private poultry businesses in Ethiopia are found in the Busheftu region and the environs of Addis Ababa. The main large-scale poultry businesses are ELFORA, Alema, and Genesis farms, which are situated in Busheftu. The main private PMDC centers include Ethio-chicken PMDC in Mekelle, which has branches all across the nation [32].

2.6. System of Distribution of Improved Poultry Breeds to Farmers and Other Bodies

The PMDC employs straightforward, standardized working procedures. Parent stock, which is imported as viable eggs and/or DOCs, is raised and multiplied by them. The F1 stock is then offered for sale as three-month-old growers/pullets, DOC, or fertilized eggs. In the latter scenario, birds receive vaccinations against Marek's Disease, Gumboro, and NCD. There are no planned vaccinations or therapies for the ensuing production cycle. When issues occur, only vitamins and antibiotics may be administered. Farmers and small-scale farmers purchase all of PMDCs' products at subsidized prices, which are typically 50% less than the actual market value [1].

2.7. Challenges in Improved Poultry Breeds Supply

Even though Ethiopia is making progress in producing and supplying chicken breeds, farmers and poultry farms still

face numerous obstacles. The main concerns facing the poultry industry today are genetic dilution of indigenous breeds, disease and predators, feed quality and availability, extension issues, and veterinary service shortages [21].

2.7.1. Feed Availability and Utilization

One of the most important obstacles to poultry production in Ethiopia, both in large-scale and rural small-holder systems, is poultry feed and nutrition. The primary causes of the issue are the dearth of processing facilities, the erratic distribution and availability, and, when accessible, the inferior quality of processed feeds [25]. In Ethiopian villages, intentional chicken feeding is nonexistent, and scavenging is almost the only way to eat. The basis of scavenging feed resources for local birds varies with the season and is insufficient.

It is still not well measured how much feed is available for scavenging in proportion to the carrying capacity of the land areas and flock dynamics during the various seasons and agro ecologies. Nonetheless, research carried out in three communities situated at varying elevations and during three distinct seasons in the central highlands has demonstrated that the items found in the crop, as discerned by visual inspection, comprise seeds, plant components, worms, insects, and unknown materials. Efficient production of poultry requires a complete diet that is well-balanced and consistently available, together with high-quality components. The absence of appropriate sources of micronutrients, vitamins, and minerals is the root cause of the most serious issues [23].

2.7.2. Disease and Predation

In general, diseases were one of the biggest obstacles to the production of village chickens, and Newcastle disease (NCD) was the most common disease among Ethiopian village chickens in regions like Oromia, Amhara, Southern Nations, Nationalities and People (SNNP). Poor management techniques, low feed quality and quantity, illnesses, and predators are some of the causes of mortality [15]. In the Lemo district of the Hadiya zone in southern Ethiopia, disease and predators were the primary obstacles to indigenous chicken production under farmer management conditions [20].

The following factors, in order of significance, are the main obstacles affecting the current farmer-managed chicken production system: illness, a dearth of veterinary health services, a traditional management system with inadequate feed supplementation, subpar housing, and restricted access to improved breeds with limited extension services [13].

Predators in Oromia, Ethiopia's Rift Valley include cats, dogs, and birds, including bird prey (referred to as "cululle" locally).

2.8. Vertical Gardens Vegetation

Large-scale green roof plant species must withstand severe wind, drought, sun radiation, low nutrient availability, high temperatures, and restricted root systems. Plant kinds that flourish in hard environments, such as arid mountainous regions, semi-desert meadows, and coastal regions, with

limited nutrient supply and inadequate precipitation, are considered qualified. The succulent plants comprise the majority of the variations. These plants can store large amounts of water in their leaves, can withstand stress, and can even withstand dry spells. To increase biodiversity, it is imperative to take local plant species into account [12].

2.9. Vertical Garden Orientation

For optimal growth, most veggies require full sun or at least five to six hours of bright light. They are unable to produce food for us or for themselves if they do not receive enough light for photosynthesis. The quantity of light that each plant receives depends on how your vertical garden is oriented (<http://www.naturallivingideas.com/46-best-veggies-herbs-and-microgreens-for-vertical-lanting/>).

2.10. Ornamental Plants for Vertical Garden

We can cultivate a broad variety of plants in a vertical garden; some are only for aesthetics, some are edible, and some are for both. When it comes to urban gardening issues with limited area, vertical gardens offer a sustainable answer. In addition to enhancing the area's aesthetic appeal, decorative plants also contribute to the area's eco-friendliness. We will talk about a variety of attractive plants in this article, covering both foliage and blooming plants [4].

3. Material and Methods

3.1. Description of Study Area

The fieldwork was done in Jimma Town, Bacho Bore Kebele, which is situated in the mid-altitude subhumid zone in the southwest of Ethiopia in the Oromia Regional State. It is 356 kilometers southwest of Addis Ababa, at 7°42' N latitude and 36°50' E longitude, with an elevation of 1710 meters above sea level. According to BPEDORS (2000), the region experiences 1250 mm of rainfall on average, with average maximum and minimum temperatures of 26.2 and 11.3°C, respectively, and average maximum and minimum relative humidity of 91.40 and 37.92%. The kebele had a total population of 75000, of which 47776 male households and 27224 female households were recorded (X, 2019, personal communication). According to x's 2019 personal correspondence, the Bacho Bore kebele's physical

characteristics were 55% hilly and 45% plane, with 0.36% swampy and 8.23% sparse woodland land.

3.2. Data Sources, Types and Methods

During the program's problem identification phase and data collection, both primary and secondary data were employed. The respondents in the area provided the primary data, while reports at the office, published and unpublished journals, and the Bacho Bore Administrative Kebele office of Jimma town provided the secondary data.

3.3. Project Area Selection Methods and Problem Identification Procedures

Bach-Bore kebele was selected randomly by DTTP group 11 members and then discussed with the kebele leader who directed the DTTP group 11 to know which village contain community with has high problem in his livelihood. After the identification of the village (goxe), we contacted and discussed with the village (goxe), administrative members. Then, we were conducted with the gox-leader to identify youth, and disabled group of these one disabled householder with his seven families were purposively selected and interviewed. Before select this disabled families we were agreed with kebele and gox leader to take as a model of this kebele. Then we were identified and prioritized his problems which were analyzed by SPSS version 20 statistical software. Accordingly, we could identify 4 major problems and ranked them as follows depending on the results from our statistical analysis.

- 1) Lack of source of livelihood
- 2) Lack of appropriate house for a day old chicken rearing
- 3) Lack of any land to do farm on.
- 4) Lack of nursery site

Therefore, based on the above information we were thought to solve these problem through easy way: when we have seen this family problem it was very boring because this disabled person didn't do any more to accelerate his livelihood. So job which he can do with his capacity and can improve his life was rearing of a day old chicken. Through creating this job opportunity the rest problem would be solved by this disabled family. Then of these above problem the 1st and 2nd were been solved and the others may be solved through vertical vegetable planting we were showed also.



Figure 1. Disabled family and their house before.

3.4. Materials Required for the Project Implementation

In general, to support the disable family in the community by creating job opportunity through providing a day old chicken, different materials such as house preparation (straw of Teff, soil, nail), Tin (for Fence), Mesh Wire, another equipment such as chicken safeguard, litter material (sagatura), feed & water trough (waterier), feed trough, vita chicks, homo as disinfectant, Heater (kasal mandaja), Charcoal, Lump and for vertical vegetation the important materials lettuce, carrot and Suisse chard and natural fertilizer (compos), wood to make bed for this plant, watering equipments, Try plastic jugs, Vegetable Cages, Trellis, Stacked pots.

3.5. Source of the Budget

Sources of the budget for this project was been the following participants

- 1) Jimma University College of Agriculture and Veterinary Medicine
- 2) Community
- 3) Jimma town private/traders
- 4) Students in the DTTP group

4. To These Project Group Members Divided in to 3 (Three)

In conducting any projects developing and using different implementation strategy is mandatory.

The 1st group was fund raising group: the main purpose of this group was to collect money from participant group like group members also, Bocho Bore town traders (private institute), community and government office like technical school and also obtained supportive letters from JUCAVM.

2nd group project accelerators: the main purpose of this group was planning what ought to be done during this project intervention and how we were pass-through without any problem and by challenging the challenge also.

3rd evaluators and reporter group: The key work of this group was been to monitor and evaluate the project and write report. Based on these approaches /systems, the program was been implemented by community mobilization, group discussion for establishments of day old chicken project for disabled family in the community as a model for future success. In every contact with the residents of the area, the different awareness creation was held to instigate them to do more in the project.

The different stake holders including small holder farmers, selected kebele administrator, town livestock and fisheries office, university instructors and DTTP supervisors were invited to actively participate during the implementation of the project. The Project was implemented through participation of the concerned stake holders like Jimma Town Agricultural Development Office, Kebele Leaders, Extension workers, Jimma University, another private sectors and

Community leaders including target Beneficiaries. The photos were captured in every time of participation.

5. Intervention Activities

5.1. House Preparation for a Day Old Chicken

5.1.1. House Repairing

In addition to lowering chick mortality, setting up a separate area for the chicks with readily accessible brooding supplies can boost output by cutting down on the amount of time the hen spends brooding. A decent spot for a day old in the project area was sought after. This house does not require any open area for the sun's light to enter because it is designed to fend off predators such as ants, rats, and cats. Important materials are included in these residences on their own such as a safety precaution, a 60–100 watt light bulb, sagatura (litter materials), and a charcoal heater till their body temperature is regulated.

In places without access to electricity, Figure 2 depicts substitute brooding spaces made from locally obtainable materials, which are utilized to take the role of the natural brooding hen. When using locally manufactured brooders, it's important to make sure the chicks can travel toward or away from a heat source and are at the proper temperature. An area that is comfy is crucial for a day-old chicken.



Figure 2. Safeguard.





Figure 3. Light.



Figure 4. Feed trough.

5.1.2. Fence Construction

For the successive of this project or control mechanism of predators; the chicken house need fence. Based on this we were did fence around day old chicken of selected area. The predators which exist here were dog and another's may exist.



Figure 5. Constructed fence.

5.2. Introducing a Day Old Chickens and Feed

As we have planned to introduce day old chicken for

disabled the chicken were introduced on 1/11/2019 by the help of JUCAVM creating job opportunity for disabled family through providing day old chicken which may help and often initiate for further activities have been done. It was the plan of the project to use this disabled family to create them to have their own job by providing a day old chicken as a model, for another disabled group and members of the community who want to create his own job based on this project.

Two hundred (200) a day old chickens were brought from Bonga research center by the support of JUCAVM through transportation facility. Immediately, after provision, the chickens were secured in already safeguarded in constructed house. Soon they safeguarded the vita chicken with pure water was been provided to reduce stress. Feeding, health care, and other relevant managements were being provided for the chicken by the disabled family. Vaccination was given three times per two weeks by the members of group eleven.



Figure 6. Introduced chicken.

5.3. Vertical Vegetable and Sack as a Model

During this intervention training was been given to this group and community how they can use the vegetation without nursery or enough land. So based on this the disabled family was taken as a model was planted lettuce, carrot and Suisse chard. From this simple project community, youth and another disabled group were taken training for the acceleration of their livelihood. See photos below.



Figure 7. Vertical and sack vegetable.

5.4. Duration of Chicken

Chicken diets are classified as starter/chick, growth, and layer diets, with progressively lower protein content in each. Up until the age of eight weeks, the chicks' food should include more protein-rich nutrients (0-8 weeks). Chicks

under 8 weeks old, growers between 9 and 20 weeks old and adult birds over 20 weeks old make up around 42%, 18%, and 40% of the country's chicken population, respectively. During 200-day-old chicken, 8.75–10 m² of room was needed until 56 days or until the chickens reached the market. Feed was provided during the first four weeks of the chicken's life, weighing 25–32 g per day, 33–39 g per day, 40–44 g per day, and 45 g per day [33].



Figure 8. Current status of chicken.

6. Input and Out Put

6.1. Input Used During Intervention

Day-old chickens, various supplies (soil, nails, Teff straw), tin (for fencing), mesh wire, protection for the chickens, litter (sagatura), feed & water trough (waterier), vita chicks, homo as disinfectant, heater (kasal mandaja), charcoal, lump lettuce, carrot, and Suisse chard as well as organic fertilizer (compos), wood to create a bed for this plant, and watering tools Consider using plastic jugs. Trellis, stacked pots, vegetable cages, etc.

6.2. Output from Intervention

- 1) Alleviating the capacity or knowledge gap of disabled group and building capacity of youth around there.
- 2) Everybody around there got awareness and highly encouraged to a day old chicken rearing.
- 3) Enhancement of community resource identification and mobilization.

7. Monitoring, Evaluation and Reporting

7.1. Monitoring

The team was discussed with small holder producer, and extension workers, take Feed-back daily and has taken correction measure accordingly.

Monitoring was an ongoing activity like chicken management, how the activity of chicken whether healthy and sick and how this owner accept these technology throughout the project life.

7.2. Evaluation

- 1) Participatory evaluation was held daily by group members. During this evaluation how to manage, statuses of chicken and additional training how to keep his house cleaning were done.
- 2) The evaluation's advancement assisted the project team in determining how well implementation was accomplishing the predetermined goals.

8. Project Sustainability

The project was initially managed and maintained by DTTP coordination, JUCAVM postgraduate students, and other partners. Following the project owner's agreement, the JUCAVM department of animal science and the Bacho Bore kebele of the Jimma town agricultural extension office proceeded.

9. Challenges and Beneficiaries of the Project

These challenges were solved by continuous monitoring and gave training for this owner of this project also. As known this project need a great effort to implement because to rear a day old chicken need very difficult especial during the 1st and 2nd week. Before we were became to implement this disabled person did not have any information so to train also expend more time.

9.1. Lack of Enough Feed

During day old chicken rearing the main problem was the feed came with chicken was not enough until the chicken reach for market. So the additional budget for this was been one of the challenges. The measure were taken was giving of another protein content feed and saving was another measure.

9.2. Chicken Mortality

Mortality of the chicken was very high in the 1st week because it may be environmental factors. So as we observed from this project the mortality rate was been only 5% of 200 day old chicken. For this challenges the solution sanitation, by gave vaccination and isolation of the affected one from the healthy one.

9.3. Beneficiaries of the Project

The main beneficiaries of this project are the disabled family, communities of the kebele, the university and the students.

Disabled family: Based on this project this family was gone own job to accelerate their livelihood and also have sources of income.

Community: the community of the Bach Bore Kebele has got a benefit from this project in the form of extension from the students about how the day old chicken improves the livelihood by taking this as a model for every landless, women, disabled youth in the community.

Jimma University: the university might be benefited from this project because it has been recognized and made good relationship with the community, especial youth and disabled group so that it is promoted. One of the main objectives of the university is to develop creative or innovative students through research and this team training program. Thus, it is achieved through providing and serving the community so that this project achieved one of its objectives.

Students: the project was benefited the students because they developed their skill of serving the community through the practice on this project. The students were improved their knowledge regarding to the problems and opportunities of the community so that they can be a good participant in solving the problems by using the opportunities for the future services.

9.4. Total Cost of the Project

- 1) Provision of chickens 200 day old chicken x actual cost of $200 \times 51 = 10200:00$ birr
- 2) For house preparation and fence construction and another materials Estimated cost 13,500:00birr
- 3) Estimated human power cost 4500:00 birr
- 4) The total cost incurred by the project was 28,200:00 Birr



Figure 9. Training another disabled group and community based on this model project.

9.5. Hand-over Program

After all the activities carried out by the DTTP group eleven students with the help of residents of the area, the handover was celebrated. In the handover ceremony the Jimma university college of agriculture and veterinary medicine community based education coordinator, the DTTP group eleven students, the respected personnel from Bacho Bore kebele and Jimma town livestock and fishery resource development office and as well as the residents of Jimma town or Bacho Bore Kebele were participated. The ceremony in the form of pictures looked like the following.



Figure 10. During hand over time.

10. Conclusion and Recommendations

Jimma University has a mission statement that reflects its dedication to a community-oriented educational philosophy aimed to address societal expectations and brings about holistic development. The Development Team Training Program (DTTP) and the Community Based Training Program (CBTP) are two programs that involve a group of students from different departments conducting practical field work in a community to identify issues specific to the area, improve problem-solving abilities, and cultivate a positive attitude toward any obstacles or challenges that may arise.

In order to identify and prioritize the most important and solvable problem, the questionnaire was prepared and the community in the project area interviewed. Then the responses gathered have been analyzed using a statistical software SPSS version 20 and the priority was given to the problems which need to be solved by the DTTP program and achievable ones.

Information was been collected on constraints in poultry production in the study area revealed that lack of their own job opportunity because this family is disabled and lack of knowledge on modern day old chicken rearing on small land. Therefore, building the capacity of youth, disabled group and communities through training and structuring scientific base was the main objective of this project. However, forwarding the theoretical lessons merely may not bring a significant change expected to come.

For this reason, we have selected disabled family for demonstration by providing a day old chicken and vertical vegetable as a model for the community and another disabled group. Sample of a day old chicken house and vertical vegetable were done for later use and different materials such as house preparation (straw of Teff, soil, nail), Tin (for Fence), Mesh Wire, another equipment such as chicken safeguard, litter material (sagatura), feed & water trough (waterier), feed trough, vita chicks, homo as disinfectant, Heater (kasal mandaja), Charcoal, Lump lettuce, carrot and Suisse chard and natural fertilizer (compos), wood to make bed for this plant, watering equipments, Try plastic jugs Vegetable Cages Trellis Stacked pots etc. Two hundred (200) day old Chickens and vertical vegetable were provided to the disabled family as his own job opportunity and for the sources of livelihood.

We could suggested that Jimma University should go and intervene in the communities who are disabled and poor persons around this to improve their livelihood through DTTP of post- graduate as well as CBTP of under graduate.

Poultry production especial day old chicken rearing is no need land or landless technology focuses on this for future DTTP of postgraduate as well as CBTP of under graduate. If vertical vegetations and sack vegetation which need small land should have to focused to do with during DTTP of postgraduate as well as CBTP of under graduate. During this project we were identified another disabled group so if DTTP project will be implement on it.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Abebe W (2008) Review of the new features of the Ethiopian poultry sector Biosecurity implications, Addis Ababa, Ethiopia.
- [2] CSA (Central Statistical Agency), 2018. Agricultural Sample Survey. Report on livestock and livestock characteristics (Private peasant holdings). Volume II. Statistical Bulletin, 587. Addis Ababa, Ethiopia. 100p.
- [3] Dawit; Liang, B., Lehmann, J., Solomon, Sohi, S., Thies, J. E., Skjemstad, J. O., Luizao, F. J., Engelhard, M. H., Neves, E. G. and Wirick, S., 2008. Stability of biomass-derived black carbon in soils. *Geochimica et Cosmochimica Acta*, 72(24), pp. 6069-6078.
- [4] Dr. A. N. Sarkar. 2018: Selection of plants for vertical gardening and green roof farming.
- [5] Getinet, M, Admassu, H., Thomas, T. S., Waithaka, M. and Kyotalimye, M., 2013. Ethiopia. Chapter, 6, pp. 149-182.
- [6] Gororo, E., and T. K. Mabel. 2016. Broiler production in an urban and peri-urban area of Zimbabwe. *Dev. South. Afr.* 33: 99–112.

- [7] Guèye, E. F., 2003. Gender issues in family poultry production systems in low-income food-deficit countries. *American Journal of Alternative Agriculture*, 18(4), pp. 185-195.
- [8] Haftu K (2016) A Review Exotic Chicken Status, Production Performance and Constraints in Ethiopia. *Asian Journal of Poultry Science*, 10: 30-39.
- [9] Jimma University/JU (2013). Guide line and procedures for CBE. Office of senior Director for research, CBE & PGP. Jimma University. www.ju.edu.et
- [10] Abubakar, I., Myhill, D., Aliyu, S. H. and Hunter, P. R., 2007. Detection of *Mycobacterium avium* subspecies paratuberculosis from patients with Crohn's disease using nucleic acid-based techniques: a systematic review and meta-analysis. *Inflammatory bowel diseases*, 14(3), pp. 401-410.
- [11] Kinung'hi, S. M., Tilahun, G., Hafez, H. M., Woldemeskel, M., Kyule, M., Grainer, M. and Baumann, M. P., 2004. Assessment of economic impact caused by poultry coccidiosis in small and large scale poultry farms in Debre Zeit, Ethiopia. *International Journal of Poultry Science*, 3(11), pp. 715-718.
- [12] MacIvor JS, Lundholm J (2011). Performance evaluation of native plants suited to extensive green roof conditions in a maritime climate. *Ecological Engineering*, 37(3), 407-417.
- [13] Melese G. and Melkamu B., Assessment of chicken production under farmers' management condition in East Gojam Zone, Amhara Regional State, Ethiopia. *Greener J. Animal Breeding and Genetics* 1(1), 1-10 (2014).
- [14] Mutami, C., 2015. Smallholder agriculture production in Zimbabwe: A survey. *Consilience*, (14), pp. 140-157.
- [15] Negewo Fida, Birru Abebe and Dinka Haile An assessment of socio-economic features of village chicken farmers in Ethiopia *African Journal of Poultry Farming* ISSN 2375-0863 Vol. 6(1), pp. 225-236, January, 2018. Available online www.internationalscholarsjournals.org © International Scholars Journals.
- [16] Nigussie, H. and Fekadu, Y., 2003. Testing and evaluation of the agricultural non-point source pollution model (AGNPS) on Augucho catchment, western Hararghe, Ethiopia. *Agriculture, Ecosystems and Environment*, 99(1), pp. 201-212.
- [17] Nzietchueng R, Cattan, V., Mercier, N., Gardner, J. P., Regnault, V., Labat, C., Mäki-Jouppila, J., Benetos, A., Kimura, M., Aviv, A. and Lacolley, P., 2008. Chronic oxidative stress induces a tissue-specific reduction in telomere length in CAST/Ei mice. *Free Radical Biology and Medicine*, 44(8), pp. 1592-1598.
- [18] Addisu H, Hailu M, Zewdu W (2013) Indigenous Chicken Production System and Breeding Practice in North Wollo, Amhara Region, Ethiopia. *Cholarly Journal of Agricultural Science* 3(10): 433-444.
- [19] Rajendran, K. and Mohanty, S., 2003. Comparative economic analysis and constraints in egg production under cage vs. deep litter systems of rearing in India. *International Journal of Poultry Science*, 2(2), pp. 153-158.
- [20] Solomon D (2007) Suitability of hay-box brooding technology to rural household poultry Production system. Jimma University College of Agriculture and Veterinary Medicine, Jimma, Ethiopia p. 41.
- [21] Tadelle D, Negussie D, Alemu, Peters K (2002) The feed resource base and its potentials for increased poultry production in Ethiopia. *World's Pout Sci J* 58: 77-87.
- [22] Taddelle, D. and Workneh, T., 2007. Ethiopia goat production: A case study of CD-ROM encyclopedia use.
- [23] Taddelle, D., Kijora, C. and Peters, K. J., 2003. Indigenous chicken ecotypes in Ethiopia: growth and feed utilization potentials. *International Journal of Poultry Science*, 2(2), pp. 144-152.
- [24] Tamirat D (2015) Overview and background paper on Ethiopia's poultry sector Relevance for HPAI research in Ethiopia. ILRI report p. 17.
- [25] Alem T (2014) Production and reproduction performance of rural poultry in lowland and midland agro-ecological zones of central Tigray, Northern Ethiopia. *African Journal of Agriculture* 9(49): 3531-3539.
- [26] Teklewold H (2006) Determinants of adoption of poultry technology: a double-hurdle approach. *Livestock Research for Rural Development* 18(3): 115-127.
- [27] Wilson R (2010) Poultry production and performance in the Federal Democratic Republic of Ethiopia. *World's Poult Sci J* 66: 132-149.
- [28] Yusuf, M. A., Zafar, W., Hafeez, H., Jamshed, A., Shah, M. A. and Quader, A., 2016. Preferences regarding disclosure of prognosis and end-of-life care: A survey of cancer patients with advanced disease in a lower-middle-income country. *Palliative medicine*, 30(7), pp. 661-673.
- [29] ALEMAYHU, M., SHIFERAW, Y., SMITH, D. and PEARSON, R., 2003. Improving the survival of donkey foals through improved nutrition and anthelmintic treatment of their dams.
- [30] Avery A (2004) Red Meat and Poultry Production and Consumption in Ethiopia and Distribution in Addis Ababa. ILRI.
- [31] Battles, H. B., Rowe, K. A., Ortega-Peluso, C., Klein, S. J. and Tesoriero, J. M., 2009. Who purchases nonprescription syringes? Characterizing customers of the Expanded Syringe Access Program (ESAP). *Journal of Urban Health*, 86(6), p. 946.
- [32] Bush J (2006). "The threat of Avian Flu": predicted impacts on rural livelihoods in SNNPR in Addis Abeba, Ethiopia.
- [33] C. S. A, Chong, Gan, G., Verhoef, A., Garcia, R. G. and Vidale, P. L., 2013. Simulation of thermal performance of horizontal slinky-loop heat exchangers for ground source heat pumps. *Applied Energy*, 104, pp. 603-610.