



THE REALITY OF THE EXTENSION SERVICE PROVIDED IN THE FIELD OF LIVESTOCK IN IRAQ : A REVIEW

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Abstract

Animal wealth in Iraq is considered one of the sources of the country's economic wealth. It is one of the pillars that provides the country with a source of food and other items. It aims to meet the human needs in terms of meat, milk, dairy production in particular, wool, corn, feathers, and leather. There are several reasons that led to the decrease in the number of animal wealth since 2003, including drought, lack of water, and the lack of transfer of modern technologies, because of the lack of government support, the decline of pastures as a result of drought, and the sale of animals at a cheap price, which led to a loss of animal wealth by 30% of sheep, 60% of goats, and 50% of cows. In addition, low productivity is caused by factors such as poor guidance service provided to livestock breeders through the delivery of knowledge, directions, skills and the implementation of activities and methods that meet the needs of breeders and are based on scientific principles. These aim to communicate scientific recommendations, modern techniques, and ways to control epidemic diseases affecting animals. Livestock has faced challenges including deteriorating infrastructure and the decline of major cows' stations. There are measures that must be adhered to by the Ministry of Agriculture, including providing fodder, improving the increase in green areas, disseminating artificial breeding technologies for carp and brown fish, conducting epidemiological and creating general directorates for slaughterhouses and solutions to develop livestock. These measures include the use of modern techniques in the field of animal production, stopping smuggling of animals, and protecting local products.

Keywords : Extension needs, breed, animal.

Introduction

Livestock in Iraq is one of the most distinguished features of the animal sector in terms of number and diversity and is an significant source of food in the country (livestock, introduction, 2018). The Food and Agriculture Organization estimated that around 10-15 of the world's population suffer from malnutrition (Tunis, 2012; www.fao.2018). Livestock is one of the oldest domesticated animals that were raised for the purpose of securing the human needs of meat, dairy, wool, leather, etc. (Khaled, 2018), and animal remains were found from livestock 7000 years before Christmas in northern Iraq (Doaa, 2018). The inhabitants of Mesopotamia are among the first to take care of and exploit sheep for the purpose of production. The antiquities discovered in Iraq show that Assyrian seals demonstrated how to shepherd sheep and how to benefit from their products (Sarah, 2018). The economic importance of livestock in Iraq is the main objective of animal husbandry, which is the provision of food items primarily, such as meat and milk (Dhuat, 2018), other products, such as wool, pine, feathers, and inedible leather, come in second class (Hussein Abd Al-Hai, 2007). Iraq possesses many types of animals such as sheep, goats, cows and buffalo, which thrive in areas rich with fertile pastures because Iraq is an agricultural country and still depends mainly on agricultural production to provide its food needs (Ahmed, 2015). Moreover, the nutritional importance of livestock as it supplies people with protein, which comes from its products such as red meat and dairy, as well as providing it with various types of vitamins, minerals and other nutrients (Livestock, 2018).

The food dilemma is one of the most important issues facing developing countries, including Iraq, despite the natural and human potential of Iraq (the Ministry of Environment, 2015). However, Iraq is unable to achieve its food security due to natural factors such as drought, water insufficiency, and the low use of advanced technology,

especially in the field of animal production (Safwa, 2016). All of these factors led to the decline of livestock, its deterioration, and the decline in its numbers since 2003, due to the lack of government support, the decline of grazing land, and the fact that livestock owners slaughter and sold it quickly out of fear of ongoing wars, in addition to the death of large numbers of animals (Majid, 2019). In 2010, the number of cows reached 2.5 million head and the sheep numbered to 7.7 million head and goats numbered to 1.47 million head (Sana, 2012). In other words, it decreased by 65% from what it was in 2010 due to the cutting of roads, the leveling of orchards, the lack of health care, random slaughter, internal migration, lack of pastures, water and fodder scarcity and disease outbreaks (Ministry of Agriculture, 2012, Livestock, 2011). In addition, several studies have confirmed that wealth in Iraq suffers from lack of regular farms, mismanagement, poor health services, disease spread and lack of vaccines (Yaqin Agency, 2018). All previously mentioned factors led to the collapse of the reality of livestock in Iraq due to the loss of a third of their numbers in 2017 because of the security situation (Muhammad, 2017). For example, numbers of sheep declined to 30%, goats to 60%, and cows to 50%, as well as the decrease in production rates of sheep and cows accompanied by prices rising (monitors, 2018). The types of livestock are:-

Sheep

Iraqi sheep have the advantage that they can be raised in desert areas. They can withstand the difficult environmental and climatic conditions and have the ability to graze for long distances. Consumers can also benefit from meat and wool (Ministry of Agriculture and Agricultural Reform, 2012).

Types of sheep

- **Awassi sheep :** It is characterized by its large size and length of legs and its ability to withstand inappropriate

conditions such as high temperature and lack of water resources and long-distance walking with high quality meat and its production of milk is about 106-121 kg / season (Kamal, 2015).

- **Kurdish Sheep** : They are the largest Iraqi sheep and depend on natural pastures for their food. They amount to 20% of the total Iraqi sheep. Their production of milk ranges from 59 to 91 kg/season.
- **Arabi sheep** : They are found in southern regions, especially the governorate of Maysan, Dhi Qar and Basra, which are the smallest types of Iraqi sheep and have the ability to live in poor areas and arid deserts. The predominant color is white and have spiral horns (Ali Muhammad, 2016).

Goats:

They are the kinds of loins, and they are the strong animals that can survive in different environments. They live on high mountains, plains, oases and deserts, and the goats' body is thin, and they find their food easily, and they have the ability to climb bushes to graze on leaves and buds.

- Sarin's goat is better than domestic goats and produces milk 2.5 kg/day.
- Malaqi goat: They adapt to living in the hot climate, making them suitable for breeding, and they can produce milk larger than 500 liters a year and they are suitable for making cheese (www.com.2019).

Cows

Cows are spread from the southern region and extend to the central region to the northern region and of its types:

- **Risataki cows**: They are among the lowest in number, and they are located in the central region and part of the southern region. They are brown in dark red. They are considered one of the largest Iraqi cows in size and height, they weigh between 450 and 500 kilograms, and they can produce 6-7 kg milk per day.
- **Al-Sharabi cows**: They are abundant in the northern areas around the Tigris River and the governorate of Ninewa, extending to Dohuk and the neighboring villages. They have a drinking color and are colored black on both sides, with a white line along the back. The animal weighs about 420-450 kilograms. Its milk production is 6-7 kg/day.
- **Cows of the Kurds**: They are spread in northern Iraq, including Sulaymaniyah, Erbil, and Dohuk, and they are the smallest and least productive Iraqi cows, and have a blackish-brown color, with a weight of about 208 kg, and milk production 2 kg / day and need small amounts of feed (Natiq, 2010).
- **AL-Janobi cows**: It is spread throughout the southern region and is believed to be home to Basra. Animals have a dark red color that tends to be brown in males and yellow in females. Animals are known for their soft, smooth skin, and these cows have a clear tooth and pulp, especially for males and a little less for females. Their milk production is low and the cow weighs 310-360 kg. It can produce about 1,350 kilograms of milk for a 200-day period.

Buffalos

The original Iraqi buffalo is believed to be from India, and has entered Iraq for a long time. It is raised in all Iraqi

provinces, and more than 50% of it is located in the marshes of Dhi Qar, Maysan, and Basra. It is abundant in the districts of Al-Qurnah, Al-Musayyib, Al-Fadhliyah, and the Dhahab Village in Baghdad province. The buffalo is raised to produce meat and milk, and considered the largest type of buffalo in the world. Its color is black and contributes to its production of 8% of milk production in Iraq. The supply of the buffalo is based on green fodder located near rivers and marshes (Thaer, 2015).

Sheep Farm field operations

First: Daily field operations

- 1- Cleaning the barn of dirt (animal waste) and fodder residue (in a daily bases).
- 2- Holding and handling animals, ensuring its safety and quarantining sick animals.
- 3- Feed and water supply according to feeding schedule.
- 4- Keeping records of the herd with maintaining.
- 5- Taking animals out for grazing.
- 6- Milking.
- 7- Taking care of sick animals.

Second: seasonal field operations:-

- 1- Pruning nails and cutting the horns (whenever it is needed).
- 2- Wool clipping.
- 3- Dosing against internal parasites.
- 4- Dowsing against external parasites.
- 5- Vaccinations against protective diseases.
- 6- Daily cleaning of barns or breeding field.

Third: Field operations that are conducted for onetime: -

- 1- Numbering and renumbering when the number falls or is replaced by a new number.
- 2- Horns removal.
- 3- Castration using rubber rings or the surgical method, using a castration tool (Burdizzo).
- 4- Cutting the sheep alyah (fatty tail).

The most important sheep field operations for the following:

1. Animal Keeping and Handling:

This is a multi-purpose operation in the field (treatment, weighting, numbering) where the breeder stands quietly and traps the animal in one corner of the barn and holds it from the back legs in an area above the knee joint so that the animal does not harm or develop bruises, wounds, and contusions. The animal cannot be held or carried from wool because it causes skin bruises and infections that affect animal productivity.

2. Numbering

This operation is a necessary process for herds because it is considered as an animal identity that differentiates them from each other and track their growth through records and numbers on several types (plastic, metal). Tattoos can be used as well for the above purpose. Other methods of numbering are available such as, ear tattoos, neck chain or collar, and earmuffs.

3. Castration

Castration is implemented to completely remove the testicles, and then stopping their role, which leads to infertility, prevents sexual desire, or reduces the

concentration of sexual hormones in the animal. Castration take place when the animal is at the age of 2-3 weeks. The benefit of the process is obtaining quiet, low-moving males, and eventually, animals will consume large amounts of fodder, which improves the characteristics of the animals intended for slaughter. Methods used for castration are (Burdizzo tool, surgeries, female hormones, and rubber rings).

4. Horns cutting and removing

This process is implemented to reduce the incidence of wounds occurring in animals during crowding and fighting or feeding or when abnormal horns growth. This process is carried out by cutting the last third of the outer horn to prevent bleeding by using special tools such as hand saw, cutting wire (wiresore), cauterization at the age of 2-3 weeks, (the use of caustic soya that prevents the growth of horns).

5. Hoof trimming

Occurs continuously when excess growth occurs in the hoof (often for animals subjected to fattening that go out for grazing) and excess growth causes inflammation and swelling due to the accumulation of dirt. The excess edges are removed using trimming scissors.

6. Wool clipping

The wool clipping process is done seasonally (once a year) and it take place during (April, May) for Iraqi sheep at moderate temperatures. In this season, the sebaceous glands under the skin are activated that facilitate the clipping process.

7. Dowsing

This process takes place in the high temperature seasons before and after the wool clipping, to eliminate external parasites, treat scabies, and get a clean wool before marketing. The immersion is done in concrete, or metal moving basins.

8. Animal dosing

It is the process of giving doses of internal parasites pesticides (lungworms, intestinal worms, fourth stomach and liver worms) to control these parasites and improve the health status of sheep and the success of the fattening process.

Immunization

They are necessary preventive measures to protect animals against epidemic diseases such as (foot and mouth disease, anthrax, communicable abortion, sheep pox, intestinal poisoning (introtaxemia) where the veterinarian is being appointed to determine the dates and dose of the vaccine needed for the animal.

Animal age estimating

Animal teeth are observed, and the sheep tooth growth and the swapping date in the front part of the lower jaw is important in assessing the animal's age to balance the herd and determining its age grade. This is an easy and quick way to check and estimate the age in the field or at sale and purchase, especially when the records are not available.

Field operations in cows' farms

Good operations are necessary for good management of milk cows because of their importance in breeding and to

obtain a high production herd as well animals' good health. Examples of these operations are: -

1. Numbering

Easy-to-read plastic and metal numbers are used for animals numbering. Females numbering differ from males in terms of color and number. The advantage of this process is to provide an identity to each animal by opening a special record.

2. Hoof trimming

This process is one of the important operations of cows' herd, especially before the winter season, to prevent cases of hoof inflammation, which leads to lameness. This process is executed twice a year by a veterinarian or by a trained agronomist.

3. Cutting horns

This process is implemented to prevent damage to the cows because of fierceness, which leads to wounds or pregnant failures of cows and is carried out using the manual wire cutter (wiresore) or the use of an electrical cutting machine for this purpose.

4. Spraying

It is one of the important field operations. This process takes place in the summer and at a rate of twice a month for eliminating external parasites, especially ticks. Holder or fixed sprays are used in this process and with adequate pesticides.

5. Milking

Milk is one of the important nutrients in human nutrition, and therefore it is necessary that it be produced as cleanly as possible. It is not enough for the cow to have the genetic ability for high production and to be given all what it needs from food so that the farmer can obtain abundant milk production, milking process has to be done properly and completely, according to scientific methods. The organization in times of milking and the speed with which it is carried out is an important factor in obtaining large quantities of milk. Milking is done in two major ways :-

- 1) Manual milking.
- 2) Mechanical milking.

6. Artificial insemination:

It is the method where male sperm can be obtained, diluted and preserved (cooled or frozen) and then inserted in appropriate quantities and in a specific way in female uterus during the estrus cycle to induce fertilization. Advantages of this process are:-

- Benefiting from males with excellent genetic characteristics.
- Overcoming the natural body differences between males and females.
- The possibility of vaccinating several females at the same time from the same male.
- Protecting females and males from genital diseases.
- Overcoming some infertility cases caused by physiological defects in the female reproductive system.
- Saving efforts and money.
- No need for male acquisition on small farms.
- High fertility rate.

Reasons of the gap between production rate and consumption rate:-

- Increasing population in the regions as a result of migration from the countryside to the city.
- Lack of adequate pasture due to water scarcity and drought.
- Lack of experience and reliance on conventional breeding methods.
- 4- No using of recent animal husbandry (cattle breeding, 2016).
- 5- Lack of labor in the field of animal production.
- Reduced animal productivity as a result of endemic communicable diseases such as foot and mouth disease and blood poisoning.
- Changing consumer lifestyles in communities (Amin, 2009).

Scientific recommendations followed in the field of livestock development:-

- Adherence to the vaccination instructions and vaccines that protect it from infectious diseases at appropriate times and thus preserve them from decease.
- The genetic enhancement of animal characteristics by the use of hybridization and the disposal of the things that create undesirable bad qualities.
- Fighting desertification, refraining from logging and reducing urban sprawl (organizational aspects, 2016).
- Providing food requirements for livestock (Kefaya, 2015).
- exploit diversity to acquire a breeding family (Faisal, 2016; Breed, 2015).

The concept of extension service provided to livestock

According to what was mentioned, the importance of the extension service provided in the field of livestock is through improving the productivity of animals through the effectiveness of the organization in achieving its goals, by relying mainly on specialization in performing the tasks (Hassan Abd Al-Rahman, 2006). According to Al-Taie, the need for specialized extension work as a strategic means to improve the performance of extension work in the field of livestock (Hussein, 2006). Several studies confirmed that there is a weakness in the extension service provided to livestock breeders because of specialization and performance of veterinary extension tasks in eliminating common diseases between humans and animals (Hassan Ali, 2004).

There are many factors that affect livestock, including the extension services provided to livestock breeders, which play an important role in achieving the well-being of the rural population and its contribution to raising productivity through the transfer of modern technologies, including the standardizing of animals period and the technology of artificial insemination of cows (Ali Abdul Hussein, 2008). This can be executed through veterinary extension in communicating knowledge, directions, and skills. These changes shall be accomplished through the implementation of activities, projects, and extension programs that were allocated according to the needs of breeders on scientific basis (2009). In addition, the use of extension methods is important in implementing and communicating the extension message to breeders in order to achieve the desired goals that meet the needs of breeders (Bassem, 2002; Ahmed Fouad,

2003). This is in addition to what extension methods and activities achieve in communicating scientific recommendations, modern techniques, and methods of controlling epidemic diseases that afflict animals in order to raise the level of knowledge, skills and behaviors among breeders (Zahid, 2003 Sakina, 2003).

Livestock extension needs:

- **Processing needs:** For agricultural products, including pastures, feed, and crops needed by livestock, and the provision of synthetic materials that can be used as supplements for cows.
- **Environmental needs:** preserving animal health must be, including the possibility of farm animals grazing outside, obtaining shelter, and exposure to sunlight.
- **Veterinary needs:** Providing preventive care to animals by creating an enabling environment that reduces disease and parasites and provides vaccines and antibiotics (SAMER, 2005, sent).

The problems and obstacles facing livestock

- **Environmental factors :** Low and erratic rainfall, frequent droughts, which limits agricultural development and the production of natural pastures. Water scarcity, extreme temperatures and humidity, which causes a negative impact on animals (General Authority for Scientific Research, 2019).
- **Feed resources :** Consider natural pastures as a basic natural source for feeding sheep, goats and cows, and they are arranged according to the degree of their dependence on pastures. Pastures are characterized by its low production capacity from fodder materials for poor management, early irrigation, unjust cutting and uprooting of trees.
- The absence of a comprehensive policy to improve pastures, which leads to soil erosion and the spread of desertification in large areas, as well as the lack of plant production projects, the adoption of traditional systems, and the reduction of unit area yields (reproductive performance, 2016).
- Dependence on imported feed.
- The lack of a comprehensive strategy plan for livestock development.
- Lack of coordination between the livestock departments, ministries and related institutions.
- Lack of long-term animal wealth programs and limited financial allocations (Livestock development constraints, 2015).

Challenges facing the livestock sector in Iraq

- The deterioration of the infrastructure:- the lack of the financial base for the growth of animal wealth, including fodder and veterinary supplies. Therefore, investment should be directed as a means of attracting capital, in addition to providing modern animal wealth technologies in Iraq.
- The decline of major plants for cows: The presence of the requirements for producing meat and classifying it as primitive, including the rush of salt water from the Gulf to the Shatt Al-Arab, which led to the loss of fish due to

the salty water flow into the lands of Basra as a result of the natural tide phenomenon (Nadia, 2018).

The measures to be taken by the Ministry of Agriculture

- Providing fodder at subsidized prices for livestock breeders, which included bran, barley and yellow corn.
- Genetic development of cows, sheep, goats and buffaloes through the use of a technique for standardizing estrus cycle and artificial insemination.
- Developing the fodder industry through the project of using of Modern Irrigation Techniques.
- Expanding green areas to improve the environment in order to provide grazing resources in the desert areas.
- Spreading techniques of artificial propagation of carp and brown fish and freeing of fingerlings in water bodies, especially marshes.
- Spreading of fish farming in cages and closed system.
- Increasing the distribution of hatching in most water areas in Iraq.
- Carry out the epidemiological vaccination for some diseases, the most important of which is Malta fever or Brucella, with support for other vaccines by 50%, and provide drugs and diagnostic kits for the detection of epidemic diseases, especially trans-border diseases (bird flu).
- Creating a General Directorate for slaughterhouses (Nadia, 2018).

Suggested solutions for livestock developing in Iraq

- Ongoing use the technology of unifying the estrus cycle and artificial insemination and working on introducing a technique for transferring the embryos to improve the productive efficiency of animals.
- Stopping the smuggling of animals by conducting a price balance with meat in neighboring countries by supporting animal breeders in a way that encourages them to market inside Iraq.
- Protect local products against dumping the market with poultry products by providing fuel and electricity at subsidized prices for poultry farms, supporting veterinary vaccines, and encouraging investment in integrated projects.
- Emphasize the prevention of overfishing and the enforcement of laws against those who violate overseas fishing restrictions (Nadia, 2018).

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