

# Local Wisdom of Buffalo Farming in the Gayo Community in Gayo Lues Regency, Aceh Province

**Abdullah Akhyar Nasution<sup>1\*</sup>, Sirojuzilam<sup>2</sup>, R. Hamdani Harahap<sup>3\*</sup>, Ma'ruf Tafsir<sup>2</sup>**

<sup>1</sup> Student of Doctoral Program on Regional Planning, Postgraduate School of Sumatera Utara University, Medan 20155 Sumatera Utara Province- Indonesia; [abdullah.akhyarnasution@student.usu.ac.id](mailto:abdullah.akhyarnasution@student.usu.ac.id)

<sup>2</sup> Postgraduate Lecturer on Regional Planning Program, Postgraduate School of Sumatera Utara University, Medan 20155 Sumatera Utara Province- Indonesia; [sirojuzilam@usu.ac.id](mailto:sirojuzilam@usu.ac.id)

<sup>3</sup> Postgraduate Lecturer on Development Study Program, Faculty of Social and Political Science of Sumatera Utara University, Medan 20155 Sumatera Utara Province- Indonesia; [r.hamdani@usu.ac.id](mailto:r.hamdani@usu.ac.id)

<sup>4</sup> Postgraduate Lecturer on Department Of Husbandry, Faculty of Agriculture of Sumatera Utara University, Medan 20155 Sumatera Utara Province- Indonesia; [maruf\\_tafsir@usu.ac.id](mailto:maruf_tafsir@usu.ac.id)

---

## Abstract

The raising tradition of buffalo which has become the part of identity of many tribes now marginalized by development. In fact, there are various best practices of traditional buffalo husbandry that can identified as local wisdom. This is also found in the practice of buffalo farming by the people of Gayo Lues, Aceh Indonesia. In order to increasing buffalo population as a guarantee of local and national food security, it is necessary to study that local wisdom at that community. This is intended to provide consideration for local livestock regulations. This study uses a qualitative approach with ethnographic methods. Data were collected through observation participant and in-depth interviews techniques. The data were analyzed using domain and taxonomic analysis. The results of the study show that the local wisdom of animal husbandry is divided into livestock systems and management patterns domains. Emically, there are 6 patterns of livestock that are practiced. The pattern of buffalo raise is also related to the social network as management principles. There are several things from local wisdom that can be absorbed in local livestock policies, especially those concerned with the work patterns and livestock business plan by local government.

**Keywords:** Ethnoscience, Local Genius, Traditional Livestock System

## 1. Introduction

Historically, many civilizations were recorded to be successful when their people succeeded in managing food. On the other hand, there are many civilizations that collapse when their people fail to manage food. The same symptoms are still happening today. The breakup of the Soviet Union in the 1990s is a relevant example. (read Siregar, 2013) Therefore, it is not wrong if food management has an impact on many aspects of human life. Barrington (2010) revealed that currently, there are at least ten general issues related to the global food system, namely: (1) food safety, (2) decreasing fish stocks in nature, (3) poor fish farming practices, (4) engineering plant genetics, (5) labor exploitation, (6) unequal access to food, (7) lack of labor in the agricultural sector, (8) a tendency to depend on a single/staple crop, (9) limited natural resources, and (10) production of bio fuels/ bio fuels.

If you refer to the global food problem above, there is a growing awareness that it is difficult to ignore the food aspect of our lives. With the urgency of the food problem, especially the food availability, then this problem becomes a discourse of the continuum times. In the 18th century, Robert Malthus who was a theologian and demographer through his work entitled "*An Essay on the Principle of Population*" (1798) predicted the extinction of humans due to limited food. Malthus's review became known as the theory of geometric series and arithmetical series. Malthus said that given the growth of the human population, which grew like a geometric progression, while the

availability of food only grew like an arithmetic progression, humans would eventually become extinct by themselves. Malthus's idea implicitly contains concerns over the availability of food which is not a new problem. Until now, Malthus' concerns seem to be believed by many people. Even some scientists are still convinced that the factor causing human extinction is due to limited food resources (see Mudrieq, 2014; Purnomo, 2007).

In addition to the big issue of food, derivative issues in the form of food availability are also a problem. FAO in 2019 shows that until 2018, the number of people experiencing food shortages has increased even though in the period of 2009-2014 it showed a downward *trend*. In the period of 2015-2018, the symptoms of an increase returned. Currently, many people think that food problems related to the availability of food are only focused on the problem of guaranteeing carbohydrate sources. This assumption is not wrong because in many cultures, the main food ingredients are always synonymous with carbohydrates. (See Hanafie, 2012) This is also what causes attention to food sources of carbohydrates to be prioritized. Plants that are a source of carbohydrates are also central to the cultivation system in many cultures around the world. Basically, in addition to foods that contain carbohydrates, some foods that contain protein elements also have an important role in human life. (Handayani, 2018) One of the important meanings of protein is to increase achievement (Rismayanthi, 2006) and support growth and overcome stunting. (Asharini, 2019).

In many classical ethnographic studies it is explained that traditionally almost all cultures have their own system in ensuring the availability of food sources of carbohydrates and protein for their people. Regarding the availability of animal protein sources, Indonesia has experienced problems in the last few years. Reily (2018) in an article revealed that during 2018, Indonesia could only meet 60.9% of its meat needs. This means that imports will be required to meet 39.1% of the needs that cannot be met by domestic production. The increasing demand for protein sources, which are mostly sourced from animal meat, occurs every year, which could be due to the effect of increasing welfare or increasing population. This contradicts the fact that empirically there are many production and distribution systems of animal protein sources that have become part of the cultural system of the local community. The existence of local Livestock Genetic Resources (AnGR) has also been the concern of many world agencies including the Food Agriculture Organization (FAO). FAO released that although the diversity of domesticated livestock is constantly changing, the diversity of livestock in the world is currently shrinking fast. Humans have lost control of their unique and often uncharacterized AnGR (FAO, 2009).

Even though it has not been integrated into the national animal protein supply system, the government has also appreciated the existence of a variety of local livestock genetic resources. It's just that the recognition of the diversity of local genetic resources does not automatically make the country involved in the development or efforts to increase the population of this genetic diversity. Considering that livestock products are needed to support the life of the human body, (Suryana, 2007), the state must pay attention to the existence of livestock genetic resources and local livestock systems by making them part of the national livestock system.

One of the ethnic groups in the archipelago that has traditionally had a local livestock system and can still be found is the Gayo community with their wild buffalo farming system. Especially on the island of Sumatra, historically the system of wild free husbandry was previously practiced by almost all ethnic groups, but currently this system can only be found in two communities. Apart from Gayo

Lues, this model of wild-free farming practices can only be found in Kuro Hamlet, Pampangan District, Ogan Komering Ilir (OKI) Regency, South Sumatra Province (read more on Ismi, 2019).

In the Gayo community, culturally this system of raising wild buffalo is known as *uwer*, the whole system is called *Pureweren*. *Uwer* himself in that Gayo means cage. In the past, this system of wild buffalo cattle was practiced by all Gayo people without exception. Buffaloes are bred not only for meat, but as culturally, the tradition of buffalo farming is also related to the paddy field farming system and the social system as a whole.

Along with population development, social changes and community needs, the *uwer* system or the *Pureweren* system in general is starting to be abandoned. The main indicator that illustrates the lack of interest in *uwer* is a decrease in the quantity and quality of wild buffalo groups that exist in the wild. On the other hand, the decline in public interest in maintaining buffalo cattle with a free-wild system is also in line with the "decreased" government attention to buffalo itself. In recent years, the local government, including the District Government of Gayo Lues, has massively "participated" in campaigning for cattle as idol livestock through the cow aid program. The presence of Bali Cattle – acknowledged or not, has directly contributed to pushing the *uwer* or *pureweren* system in a direction that is no longer considered economically valuable. However, the presence of Bali Cattle is clearly not the only reason why *uwer* and/or *pureweren* are being abandoned.

Referring to this description, the effort to develop *uwer* and *pureweren* system becomes a relevant matter in supporting the issuance of regulations on the provision of protein ingredients for public consumption at the local level. If that happens, it will gradually be able to contribute nationally in overcoming the shortage of protein food stocks. For this reason, a research is needed in the form of revealing a variety of local wisdom that can be adopted as material for making local livestock development policies.

## 2. Materials and Methods

This research uses the ethnographic method because it is oriented to reveal the way of life of a society from the perspective of the community itself, (see Spradley, 1980). Broadly speaking, the data requirements in this study were obtained by using two data collection techniques, namely participation observation and in-depth interviews. Through observation, various actions and treatments will be obtained in the community related to the pattern of buffalo farming. Meanwhile, through in-depth interviews, cognitive arguments will be obtained for the variety of treatments and/or experiences possessed by information related to animal husbandry practices that are practiced.

This participatory observation technique helps obtain data on how the Gayo community reflects their values related to buffalo farming expressed through a series of actions and material systems that are presented using their point of view (*emic view*). Moreover, as stated by Schensul, Schensul and LeCompte (1999) that the most logical reason for the use of this participatory observation technique is in addition to being in line with the output of the research objectives to be achieved, also because participatory observation is used, among others, to (1) Identify and guide/direct relationships. with informants and (2) Assisting researchers in understanding how things are organized and prioritized, how people relate to each other, and what cultural parameters apply.

The in-depth interview technique in this study is used to reveal what is in the head of the Gayo community regarding the virtues of buffalo and the variety of experiences why buffalo farming is carried out. Data and information related to the knowledge of the Gayo community about the various forms and values contained in various local wisdoms were also obtained using in-depth interviews.

All data obtained were analyzed according to the stages of ethnographic data analysis according to Spradley (1979). Although modifications have been made at several stages, the data analysis carried out by the anthropologist has become a reference in this study. At this stage, the data analysis process also uses the "*on going analysis*" model.

### **3. Results**

#### **3.1. Local Wisdom in Sustainable Development**

Reviewing the concept of sustainable development and how the position of local wisdom in this development is crucial. As mentioned, the basic philosophy of development is to make changes to improve living conditions. If in the early stages of the development idea rolling, welfare is an absolute thing to be achieved, then often other aspects have to be "sacrificed". Economic growth as a way of measuring the increase in welfare has become a deified thing.

When ecology is given space to maintain its carrying capacity, at the same time there is attention to the social and cultural aspects of the role of local wisdom. Antariksa (2009) says that local wisdom is a positive behavior that connects humans with the surrounding environment. Local wisdom can also be understood as a local idea that requires virtue, is full of wisdom, has good values that have become flesh and blood and is a concern for the community.

With that understanding, it can be understood that local wisdom is the process of how humans relate to nature in a balanced way. This balance is closely related to efforts to maintain the ability of nature to support human life. Meanwhile, sustainable development is the goal to be achieved. If you look at the two concepts, then one of the human actions in achieving sustainable development is to use local wisdom.

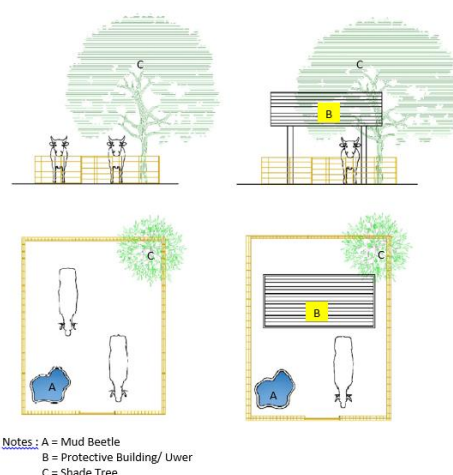
Studies on the importance of local wisdom in development have been revealed by many scientists. For the case in Indonesia, Adli's (2012) study on fisheries development based on local wisdom in Aceh is one of them. Dahliani et al (2015) research on local wisdom in environmental development in the modern era also shows the same concern. Dahliani stated that mmamu's local wisdom creates a better living environment if it is adopted in the development of a residential environment. This happens because local wisdom is the result of community extraction of experience through knowledge which is then used as a choice of action.

In its development, local wisdom can also stimulate humans to produce appropriate and environmentally friendly technologies. This is in line with the notion of local wisdom conveyed by Berkes (1993). Berkes explicitly states that local wisdom is used by humans to manage the environment because local wisdom is their traditional knowledge about the environment. For this reason, realizing, understanding and adopting local wisdom in carrying out development will be very useful in maximizing the achievement of goals. This is at least revealed by Chambers (1985) who emphasizes the need to place the community and all that it has as the main part that must be given space in development.

## 2. Buffalo Farming Practices: Pureweren and its varieties

So far, the definition of *uwer* and/or *peruweren* is only obtained from the writings of Hurgronje (1996) which states that "Peruweren is a place for herding livestock, usually far away, which is sometimes a day or two's journey from the village, in a large meadow. Small uwers are located on the edge of the village". The factual conditions today in some places are still the same as the depiction of Hurgronje about 100 years ago. Uwer itself means cage. The cage in question is a special cage for large ruminant animals, especially buffalo. The buffalo itself in local terminology is referred to as Koro. Broadly speaking, there are two major groups of cages, namely cages with buildings for sheltering livestock and cages without buildings as shelters for livestock.

Although there are two major types of cages that are practiced by farmers in Gayo, their function is the same as a place to tether or collect livestock at a certain time. A cage with a shelter building for livestock is used to collect livestock for a relatively long time. Meanwhile, cages without shelter buildings are only used to collect livestock, mainly buffaloes for a certain period of time each year.



Source : Field Observation, 2020

**Figure 12. Sketch of the Cattle Cage (Uwer) in Gayo Lues**

Based on the information obtained, there is a slight difference in the current concept of uwer with the understanding of uwer at first. In livestock systems that practice illegal release systems, uwer was formerly understood as a roofed building without walls. The building was built with improvised materials and used as a kind of "monument" for the release of cattle, in this case the buffalo for the first time. The building also serves as a meeting point for buffalo breeders/keepers (emically called handlers) when giving minerals in the form of table salt (NaCl). Meanwhile, currently, fenced land with or without shelter buildings is also referred to as uwer in general.

Another thing that needs to be understood is that for Gayo people anyone can own buffalo. However, not just anyone can raise livestock. On the basis of these conditions, buffalo owners in Gayo often hand over their livestock to be cared for and/or be held accountable by other people who are considered to have "luck". From the beginning the party who was trusted to care for and be responsible for the herd of livestock belonging to the investor was known as the *Koro* Handler. It should be noted that the position of the handler in the wild loose peruweren system was once very important. The handler of this *Koro*, besides being responsible for the process of releasing livestock, is also a person who has the ability to build an inner bond with the herd of cattle. The bond was built

intensely, one of which was through the provision of salt to livestock on a regular basis. Not only that, in the local knowledge systems, the handler is also considered a person who has magical abilities in controlling the existence of a herd of buffalo which is his responsibility.

In the past, herds of wild buffalo bred using the services of a "handler" were also used to help cultivate the fields. Tens or hundreds of buffalo in a herd will be directed by the handler to the rice fields when the planting season will begin. In the rice field area, the buffalo will be guided to trample the rice fields that were previously flooded. As a result of the footing of tens or hundreds of buffaloes, the paddy fields will become soft like plowed land. If it is deemed suitable for planting, then the wild buffalo herd will be guided back to the forest. Currently, the practice of loosening the soil with the help of buffalo is very rare except in a few villages in Terangun and Tripe Jaya sub-districts. Currently, the use of motorized plow or *hand tractors* has taken over the roles previously carried out by the buffalo herd.

This research shows that there are at least 6 *peruweren* classifications. Efforts to explore information about the various forms of *peruweren* show different characteristics for each model of *peruweren* that is practiced.

#### A. Wild Loose Peruweren

Wild loose *peruweren*, is a model of *peruweren* which in fact used to be widely practiced by the Gayo community. There are several opinions from the community regarding the existence of herds of wild buffalo that used to be often found in the forests of the Gayo Highlands, including in forest areas within the Gayo Lues Regency area. The first opinion, there are those who say that the group or herd of wild buffalo is a buffalo that was deliberately released by the owner with the help of a "buffalo handler". This first opinion is still believed by some people and breeders in Gayo Lues. Although the quantity and quality of wild buffalo herds are rare, some of the informants and respondents in this study believe that in Gayo Lues there are still several herds of wild buffalo owned by several people, the result of accidental owner and or buffalo keeper. It is said that according to them, the herd of buffalo that were previously kept became wild due to not being cared for properly by the owner and or the caretaker. This second group doubts – or even negates – the importance of the buffalo handler in the wild-release model of *peruweren*. They believe that buffalo will become wild if they are not cared for and cared for with love.

Those who believe in the first view, then in the practice of loose wild *pureweren*, buffaloes are deliberately released into a forest area with a certain ritual with the point of release marked by the presence of a hut/cage (*uwer*). From several informants, it was found that the release process is fully the responsibility of the handler. The buffalo owner completely surrenders control of his buffalo to the handler accompanied by the principle of mutual trust. The huts/cages that are built usually also function as locations for giving minerals in the form of table salt (NaCl) on a regular basis.

In contrast to the second view, the existence of the handler is believed to not exist. For them, the role of livestock keepers is very important. The construction of the *uwer*, which is usually carried out in a location far from the house and included in the Blang Koro area, requires guards to intensively monitor the development of their buffalo. If the buffalo keeper performs the monitoring role well, then the buffalo herd will behave tamely only to the guard. But if the guard neglects to pay attention, then the herd of buffalo that are kept will turn wild. In other words, the cause of the buffalo going wild is not a deliberate act made with the help of a magical ritual by the handler.

However, it was the caretaker's negligence in caring for the buffalo that made the previously tame buffalo herds turn wild.

Groups who believe in this second view use religious reasons as the basis for eliminating the role of the handler. For them, if it is true that the release of buffalo is carried out intentionally with the help of the handler through a ritual with a magical nuance, then it is included in the category of shirk in accordance with Islamic religious beliefs. At least that's the reason why they don't believe there is a deliberate practice of wild *peruweren* with the help of a handler. Even though the second group denies the role of the handler in making the buffalo herd go wild, the second group still believes in the role of the buffalo handler in catching or harvesting loose wild buffalo. This is at least evidenced by how often the buffalo handlers are asked for their help in detecting wild buffalo in the forest.

#### B. Semi Wild Loose Peruweren

Based on information and field data, this semi loose wild *peruweren* pattern is only found in a few villages in Terangun and Tripe Jaya. The characteristic of this pattern *peruweren* is the existence of two *uwer* locations owned by the breeder. One *uwer* location can be called near *uwer* and the other can be called far *uwer*. Near *uwer* tend to be fenced land and are located around rice fields or settlements either with or without protective buildings. While far *uwer* is *uwer* which is located far away in the forest area or *Blang* which can be traveled all day on foot.

The existence of *uwer* near rice fields or settlements is intended to keep herds of livestock owned for a certain period of time. The time of holding a herd of buffalo in the near *uwer* usually takes place when the preparation for planting rice in the fields will be carried out in each planting season. Herds of buffalo are needed to trample the rice fields so that they are loose and ready to be planted. Considering the process of loosening rice fields which takes time, as long as needed, the herd of buffalo will be kept in cages in the near *uwer*. According to the results of interviews, the length of time a herd of buffaloes are kept in the near *uwer* depends on the area of the rice fields to be processed. However, at least the majority of informants said that to keep a herd of buffalo in a nearby *uwer* it could take 1-2 months a year.

If the task of fertilization the rice fields has been completed with the help of the buffalo herd, the buffalo herd will be herded back to the far *uwer*. In the process of delivering the herd of buffalo to the far *uwer*, the role of the buffalo handler is needed. This is because the process of delivering and placing buffalo at the far *uwer* will use a wild release pattern by relying on the *uwer* building as a release point. The process of delivering and releasing herds of cattle will always be accompanied by the ritual of burning incense and chanting prayers and mantras by the handler. The practice of this delivery and release ritual by some informants is believed to be a form of prayer request to the creator to always protect and guard the herd of buffalo while in *uwer* far away.

While in far *uwer*, buffalo feed needs are completely dependent on nature. This is because the pattern of husbandry while in far *uwer* uses the principle of wild loose *uwer*. In other words, herds of buffalo are naturally left free to forage in nature.

In relation to the function of the *uwer* building, apart from being a release point, it also serves as a location for buffalo to gather. As long as the herd of buffalo is placed at a far *uwer*, the livestock keepers will take turns in a certain period of time making visits. Besides aiming to monitor the

development of buffaloes, periodic visits are also carried out with the aim of providing minerals in the form of table salt (NaCl) as additional food.

If the planting season is resumed, then the herd of buffalo will be brought back to the nearby *uwer*. The process of harvesting livestock also usually occurs during the period of herds of buffaloes being penned in the near *uwer*. And so on, the pattern of confinement of the herd of buffalo will be repeated in every calendar season.

#### C. Morning Out and Evening Caged Peruweren

Looking at the pattern and principles of breeding, *peruweren* with morning out and evening caged pattern are relatively same as *peruweren* free in the wild. Only the location of the *uwer* is relatively the same as the close *uwer* in the semi-wild pattern. This pattern is marked by the practice of releasing herds of buffalo in the morning, usually before 08.00 WIB. The herd of buffalo in the afternoon will return automatically to the cage that has been prepared. Even so, sometimes the cattle keeper is also active in directing his herd of buffalo back to the *uwer*.

This type of *pureweren* pattern is very prone to conflict. This is because when buffaloes are released in a certain area during the day, it is not uncommon for herds of buffalo to enter people's fields or gardens. When a herd of buffalo with this pattern enters other people's fields or gardens, the herd of buffalo will freely eat the leaves of plants or step on plants that are deliberately planted by the owner.

One of the characteristics of this type of *peruweren* is that the *uwer* which is the location of its enclosure is in the form of a piece of land surrounded by a fence. In the *uwer*, there is a hut without walls that serves as a place for buffalo to shelter and gather buffalo. Meanwhile in one corner of the *uwer* there is a muddy puddle. This *Peruweren* version still gives the buffalo room to explore a wider area. Therefore, there are times when a herd of buffalo will not return for several nights due to foraging in a relatively remote area but will return to the cage after being directed by the guards.

#### D. Large Cage Peruweren

This type of *peruweren* is characterized by the release of livestock in a relatively large area. In order not to potentially damage other people's fields or gardens, the land where the buffalo is raised is built a fence around it with various materials. There are fences made of wood, wire and sometimes only made of bamboo. Considering the area of land where the cattle are released reaches tens or even hundreds of hectares, usually not all sides of the land will be fenced off. For this reason, usually in a large cage area, there is still a narrow fenced land that is neater as a cage for herds of buffalo.

The *peruweren* of this pattern are basically relatively the same as the *peruweren* out in the morning and enter the cage in the evening. It's just that the roaming area for releasing buffalo is more limited to land which is usually also owned by livestock owners. As far as monitoring is concerned, this type of *peruweren* practice was not found in the four sub-districts that were the research location but was found in other sub-districts in Gayo Lues, namely in Blang Nangka and Dabu Gelang sub-districts. Another characteristic of this type of *peruweren* is that there are times when the guards also have to provide feed for the herd of buffalo. This is because the roaming area of the buffalo herd is limited to only fenced land. Thus, the availability of feed is sometimes limited.

#### E. Semi-Intensive Peruweren.



Semi-intensive *peruweren* is a farming pattern that uses a uwer that is not too broad with a colony maintenance pattern. Considering that this semi-intensive breeder utilizes a relatively small area of *uwer* land, the number of livestock kept is also relatively limited. In the semi-intensive *peruweren* pattern, feeding is fully carried out by the guards. The care and attention of the livestock keepers must be carried out every day. The advantage of this type of *peruweren* is that the keeper or livestock owner will be able to know the progress of his livestock day by day.

#### F. Intensive Pureweren

Intensive *peruweren* is a farming pattern that uses batray cages. This means that there is a bulkhead that separates one cage from another. This type of *peruweren* usually consists of a roofed building without walls with the presence of a feeder for each animal separately. By the community, the type of cage used in intensive breeding is better known as *uwer kucak*. The purpose of these livestock is usually only fattening for meat to be harvested or sold within a certain time. The owner or keeper is responsible for finding and feeding the cattle in the pen. Another characteristic of the animals kept by this model is that the nose of the buffalo has been perforated to make it easier to control it.

### 3.2. Local Wisdom in the Traditional Buffalo Farming System in Gayo Lues

#### 3.2.1. Successful Buffalo Breeders: *Tuah* Body

Previously, it was explained that anyone in the Gayo community could and could own a buffalo. This indicates that as an egalitarian identity, buffalo/koro can be owned by anyone. It's just that those who can care for or look after buffalo are talented people or in the local language people who have "tuah". certain. As something that is "Gifted" in nature, the "tuah" is always attached to birth. Even if the "tuah" as a breeder will give birth to get a luck, the existence of the "tuah" will appear by itself along with one's involvement in the buffalo/koro farming business.

Sometimes the "tuah" as a breeder is obtained by someone who was born and raised by parents who also have the "tuah" of the body in raising livestock. However, sometimes the "tuah" of the body can also be owned by people who are not born from a family of farmers who also have the "tuah" of the body. However, the results of in-depth interviews with several key informants revealed that the majority of those who raise or raise buffalo today also come from families who keep livestock.

Emically, the Gayo community stated that the indicators of the existence of "tuah" related to luck in the buffalo/koro livestock business are characterized as follows:

1. This person has had an interest and seriousness in being involved in buffalo/koro farming since childhood.
2. Tend to be more familiar with buffalo/koro animals wherever he is. If the person concerned is close to the buffalo/koro herd, the buffalo/koro herd will not feel disturbed even though the person concerned is not someone who is used to interacting with the existing buffalo/koro herd.
3. Tend to have no fear of interacting with all types of buffalo under any conditions.
4. Usually have a deeper "sensitivity" to the condition of the herd of buffalo/koro either individually or in groups

#### 3.2.2. Buffalo Farming: Collective and Social Security

As mentioned, buffalo/koro farming in the Gayo community is basically done communally. Even though in its operations it seems individual. However, in many cases, buffalo/koro farming activities, starting from the procurement of seeds and determining the location of the uwer – if you want to start – to harvesting/ selling livestock always involve many people. This indicates that the *peruweren* tradition always involves social groups in society.

Noting that there are several parties involved in every buffalo/koro husbandry business, then directly and indirectly in the relationship system it is also accompanied by the distribution of resources and welfare. If you pay attention to the pattern of relationships that exist in the livestock business at the research location, then at least there are forms of relationships as follows:

a. Loose Wild *Peruweren*

- Owner ---- Handler ---- Store/ Agent ---- Meat Seller

b. Semi Loose Wild *Peruweren*

- Owner ---- Breeder/ Keeper ---- Handler ---- Store/ Agent ---- Meat Seller
- Owner/ Breeder/ Keeper ---- Handler ---- Store/ Agent ---- Meat Seller

c. *Pureweren* Morning Out and Evening Caged/ Large Cage/ Semi Intensive/ Intensive

- Owner ---- Breeder/ Keeper ---- Store/ Agent ---- Meat Seller
- Owner/ Breeder/ Keeper ---- Store/ Agent ---- Meat Seller
- Owner/ Breeder/ Keeper/ Store (Agent) – Meat Sales

As an economic business, the buffalo/koro husbandry business produces meat as the goal of its business. Broadly speaking, there are two types of meat production, namely meat in the form of live animals and fresh meat. In an effort to produce live animals and or meat, there is a production and distribution chain of products from livestock businesses that is formed naturally by market mechanisms.

The production process that involves several parties is of course also accompanied by the distribution of resources in the form of capital and costs, especially in production systems where the owner is not a breeder/keeper. The system of entrusting a herd of livestock owned to be cared for by other people – who usually still have kinship relationships – in Gayo culture is called *redla*. If in the past, in the wild loose *peruweren* pattern, the owner gave full responsibility for maintaining buffalo/koro to the handler, then compensation what the handler receives is the fulfillment of basic needs by the buffalo/koro owner. In such conditions, all the basic needs of the handler and his family are the responsibility of the buffalo owner.

The *Merahla* system, which uses semi-wild and early-morning *peruweren* to enter the cage in the afternoon, usually uses a profit-sharing pattern. The most common profit sharing pattern is or 1/3 for each birth and/or for each sale. With a pattern of or 1/3 for each birth, the breeder/keeper will get one buffalo/koro in two or three births of female brooders. This is because it is very rare for a buffalo to give birth to two chicks at once. Armed with the ownership of livestock from the profit sharing, the breeder/keeper will fulfill his needs after going through the sale. In this pattern, the owner of the buffalo/koro usually also often acts as a patron – the party who provides life support –

to the breeder/keeper. This life support is sometimes not routine but only in certain conditions and situations. In the past, life support was usually given in the form of assistance for the family needs of breeders/keepers during the new school year season and during Eid.

The development of the times inevitably also affects the pattern of relationships between buffalo/koro owners with breeders/keepers and handlers. Currently, there is a redla pattern in the form of being a caretaker for maintenance services only. The owner will pay a sum of money to the breeder/keeper as a service for his efforts to maintain the owner's herd of buffalo. So far, it is known that the amount paid by the owner of the buffalo/koro to the breeder/keeper as wages for his maintenance services is around Rp. 300,000 to Rp. 500,000/head/year. Sometimes the profit sharing pattern for each birth and sale is also applied simultaneously and sometimes it is not. All distribution of resources in the Merahla system is highly dependent on the agreement between the buffalo/koro owner and the breeder/keeper and/or the handler.

Referring to the pattern of implementing a buffalo farming business that involves many people, automatically the social networks that are built in it also become a means of distributing resources. The establishment of a resource distribution network will automatically affect the distribution of welfare among livestock business actors. With the various patterns of distribution of welfare that are bound, the traditional farming pattern practiced by the Gayo community has long been a means of social safety nets. Especially for the actors who act as handlers, custodians and or breeders. These social groups whose lives are guaranteed by the buffalo/koro owners can be called clients on the one hand and capital owners (buffalo/koro) on the other hand are called patrons. As a social security mechanism for the social welfare of the actors involved in it, the continuity of this livestock business is something that is continuously maintained, even though the owners of capital (owners of buffalo/koro) are not necessarily profitable. However, in the operation of the livestock business, the owners of the buffalo/koro at least participate in providing social security for the breeders/keepers of their livestock.

### **3.2.3 Wisdom Regarding Selection of Location and Building of Buffalo/Koro Cage**

The location of the cage is an important thing in the practice of buffalo farming. Discussing about the location of the cage, the farmer community has their own way of choosing a good cage location for their farm. The selection of the location of the cage carried out by the farming community also saw various points of view including, the location of the cage was chosen according to the livestock system being carried out, adjusting to environmental conditions and the distribution of available feed and also taking into account the conditions of conflict that would occur.

In the livestock practice run by the Gayo community, there are two locations that will be used as cages, namely the main cage for maintenance and the grazing cage in the forest. This cage is actively used in every farming pattern practiced by the Gayo community. In general, the breeding pattern that runs with two cage locations is the wild and semi-wild release pattern, while the pattern that only requires cages in the form of the main cage is the early-afternoon release pattern, large cage, and uwer kucak (semi-intensive/intensive puree) only.

The location of the grazing pens in the forest, some of the selection criteria for their location are:

- Close to water and feed sources
- Selected a flat location both in hilly areas and on the banks of watersheds

- Selected a location that is not too difficult to access
- Selected in a location that is not part of the range of tigers/other predators

Meanwhile, the main breeding cage is usually chosen based on the following considerations:

- The location is on the private property of the owner/keeper/breeder
- The location is easy to access

Given that the cage acts as a gathering point for the buffalo, it is important to build it by considering the durability of the building materials. These materials, such as wood, wire, bamboo and zinc as the roof. *Tusam* wood is wood from pine trees and is the main choice for building cages because of its hard texture. Many of the breeders use this type of wood as cage building poles and cage fence posts. In the past, breeders also used *Nengkring*, *Pungkei*, and other wood species, but now these woods are very difficult to obtain. Only *tusam*/pine wood is easy to find.

#### 4. Discussion

In this study found at least 6 patterns of traditional buffalo farming (*peruweren*), namely: (1) loose wild, (2) semi-loose wild, (3) morning out and evening caged, (4) large cage, (5) semi-intensive cage and last (6) intensive/small cage (*uwer kucak*). The results of data mining show that there are several local wisdoms that are practiced by breeders/keepers/buffalo handlers/*koro* in Gayo Lues.

Some of this wisdom can be seen from the existence of local knowledge related to (a) appreciation of the agency's '*tuah*', (b) collectivity and as social security, (c) selection of the location of the cage (*uwer*) which always considers the position of water sources and the distribution of animal feed, (d) selection of cage building materials (*uwer*). This means that even if the livestock business seems very individual, in the business and practice of taking care of buffalo/*koro* it is accompanied by communal/collective behavior. Indirectly, the business and practice of taking care of buffalo/*koro* is related to efforts to spread resources, especially the economy, among several parties. Another local wisdom is that there is a general belief in the community that everyone can own buffalo, but not everyone can raise/keep buffalo/*koro*. Only people with a certain '*tuah*' will be more successful in raising/raising buffalo/*koro* cattle. Related to efforts to develop buffalo farming business in Gayo Lues, it is necessary to understand that the core of livestock business is to increase livestock productivity by utilizing technical capabilities and based on the potential of existing resources. Regarding livestock conditions in Gayo Lues, so far the cultivation pattern is still dominated by extensive models. With an extensive model, herds of buffalo/*koro* are kept by releasing them in the pasture or in the wild. Even though there are some extensive modifications to the pattern, considering that the feeding of buffaloes is fully based on the availability in nature, this condition is an indication of the dominant pattern of extensive husbandry. Taking into account the vast area that is already used as land for grazing/buffalo/*koro* roaming in Gayo Lues, then developing a livestock business with an extensive model is still considered relevant with some improvements.

The basic principle of the existing model is the need for adequate land availability. So far, the extensive pattern has faced challenges in the form of reducing the area of maintenance land. Basically, this can be overcome by maximizing areas with status as scrub areas, primary dry land forests, secondary dry land forests, plantation forests, open land and grasslands with strict supervision and zoning. This means that the designation of a special area for *ekrbau* husbandry is an

alternative policy choice. Regarding the pattern of area management, it can be offered to Regional-Owned Enterprises (BUMD) and Village/Joint-Owned Enterprises (BUMDes/BUMDesMa). Based on the results of the interview, it is known that there are big challenges if the extensive model is managed in the form of a Regional Owned Enterprise (BUMD), which is related to the organizational structure and work structure in the field. If an extensive livestock business is carried out by a Regional Owned Enterprise, then the recruitment of employees based on the need for technical competence will be difficult. The reason is that it will be very difficult for employees to monitor the area in a centralized manner, even with adequate technical capabilities. In addition, extensive business management by Regional-Owned Enterprises (BUMD) will raise a new problem, namely that the BUMD will emerge as a competitor for breeders/keepers who have previously practiced similar farming patterns. This means that if the livestock intensive business pattern is handed over to Regional Owned Enterprises (BUMD), it will have the potential to create new social problems. Instead of increasing welfare, these models and patterns will have the potential to create horizontal conflicts in the community.

To deal with this potential, the most suitable extensive model is the Village-Owned/Joint-Owned Enterprises (BUMDes/ BUMDesMa) business pattern. The choice of the BUMDes and/or BUMDesMa pattern is the most feasible and logical considering that the BUMDes business base is always based on village conditions. Considering that livestock business practices with extensive models have been carried out by many communities in many villages within the scope of the four sub-districts studied, the only challenge to make it happen is only to formalize the livestock business into a joint business forum in the form of Village-Owned Enterprises and or State-Owned Enterprises. Joint Village.

With the establishment of BUMDe/BUMDesMa, the success of acquiring a livestock business that was previously personal to become a collective will greatly determine the next step. Through this pattern of establishing a livestock business, the operationalization of the BUMDes/BUMDesMa business area will be more secure because the required capital is not as large as the intensive livestock business model. Sources of capital for livestock businesses managed by BUMDes/BUMDesMa also do not require a bureaucracy as complex as that of BUMD. Sources of capital in the form of broodstock and seeds no longer need to be provided because the owner of the buffalo/koro will automatically become an investor or capital participant. Meanwhile, financing capital for the development of livestock supporting infrastructure can come from village funds and/or individual investors and sometimes also from buffalo/koro owners.

With regard to business operations, the need for labor also does not have to be recruited using government and business bureaucratic mechanisms. Breeders, handlers, keepers and owners of buffalo/koro can be automatically recruited as administrators and operational personnel. Recruitment of workers from breeders, handlers and buffalo keepers will certainly have the potential to improve welfare because the land for release has a legal basis. Thus, potential conflicts with agricultural land owners will not arise. On the other hand, the determination of special areas for livestock by adopting an extensive model in turn will be able to control the occupation of land outside its designation. This can be illustrated, if in a special area there is clearing of land intended as agricultural land, then it will be at risk because herds of buffalo/koro have the potential to damage the land. In this way, people who are trying to clear land for cultivation outside of special agricultural areas will think again.

Another advantage gained by recruiting workers from the breeders, handlers and keepers is that in addition to their experience, attention to the concept of "lucky" the agency will also be accommodated. If so far the extensive livestock business model seems to be carried out individually, even though in reality it is communal, then through BUMDes/BUMDesMA the formalization of collective working relationships with profit agreements and guarantees for livestock land will be realized. Thus, livestock business as a social safety net will be institutionalized. The administrators and the village will benefit from every buffalo that is harvested/consumed. Through such husbandry models and patterns, it will be possible to gradually increase the technical capacity of breeders/handlers/keepers to encourage increased productivity.

This type of breeding model and pattern also provides space for the preservation of local knowledge and wisdom. The ethnotaxonomy of buffalo will be sustainable because it is maintained. With technical support from animal husbandry experts, local knowledge which in the technical world of animal husbandry is still in the form of conjectures on superior individuals will be proven. Of course with the spirit to increase the productivity of the livestock business. The use of buffalo herds as a rice field processing staff will be able to be mobilized on a large scale and there will be benefits/profits for the use of services. Thus, the products from the buffalo farming business will be diversified. If so far the only buffalo/koro farm products that have been marketed are live buffalo/koro and/or buffalo/koro meat only, then through the organization of a buffalo farming business in the form of BUMDes/BUMDesMa, other potential income will be generated.

Aspects of the availability of feed through the model and pattern of this livestock business will also ensure its availability. Through periodic data collection that is coded (inventoried), efforts to ensure the availability of feed are also the concern of BUMDes/BUMdesMa. Armed with knowledge of the traditional grass and green foliage habitats, it is possible to maintain or control these habitats. If it is necessary to introduce a new type of superior green grass as feed for herds of buffalo, then the breeders, handlers and keepers of buffalo/koro certainly have knowledge of suitable land for cultivation.

Based on the description above, the choice of a buffalo farming business with an extensive model in a short period of time will be more prospective to be chosen than the intensive pattern. Through the extensive livestock model, many benefits will be achieved including:

- No potential for conflict related to labor recruitment.
- Institutionalization of the buffalo farming business network so as to ensure the preservation of the social safety net that is culturally owned by the Gayo community.
- Will be a means of control over the occupation of protected forest land into agricultural land and other uses outside the designated land use.
- Business with this model and pattern will be more rooted because it does not introduce new values but reinforces existing social and cultural values.

## **References**

Adli, M. 2012. Pembangunan Berkelanjutan Berbasis Kearifan Lokal Sektor Perikanan. Artikel pada Kanun Jurnal Ilmu Hukum No. 57, Th. XIV (Agustus, 2012), pp. 309-321 diakses pada 6 Oktober 2019

Antariksa.2009. Kearifan Lokal dalam Arsitektur Perkotaan dan Lingkungan Binaan. Seminar Nasional “Kearifan Lokal (Local Wisdom) dalam Perencanaan dan Perancangan Lingkungan Binaan “ PPI Rektorat Universitas Merdeka Malang, 7 Agustus.

Asharini, Annisa Mutiara. 2019. Protein Hewani, Kunci Mencegah Stunting Pada Anak. Artikel pada <https://parenting.dream.co.id/ibu-dan-anak/ibu-cerdas-dan-lebih-peka-terhadap-gizi-anak-190430x.html> dipublikasi 30 April dan diakses 20 Juli 2019.

Barrington, Vanessa. 2010. The 10 Biggest Issues With the Global Food System. Artikel pada [ecosalon.com](http://ecosalon.com) dimuat pada 10 Oktober. Juga dapat diakses pada <http://ecosalon.com/the-10-biggest-issues-with-the-global-food-system/> diakses pada 22 juli 2019.

Berkes, Fikret. 1993. Traditional Ecological Knowledge in Perspektif. Dalam buku Traditional Ecological Knowledge: Concept and Cases. Edited by Julian T. Inglis. Canadian Museum of Nature. Ottawa

Chambers, R. 1985. Rural Development : Putting The Last First. London ; New York.

Dahlani., dkk. 2015. Local Wisdom In Built Environment In Globalization Era. Article on International Journal of Education and Research Vol. 3 No. 6 June 2015. published on <https://www.ijern.com/journal/2015/June-2015/13.pdf>

FAO- Komisi Sumberdaya Genetik Untuk Pangan Dan Pertanian. 2009. Status Terkini Dunia Sumberdaya Genetik Ternak Untuk Pangan Dan Pertanian (The State Of The World’s animal Genetic Resources For Food And Agriculture). Jakarta. Pusat Penelitian Dan Pengembangan Peternakan Departemen Pertanian

Hanafie, Rita, 2012. Peningkatan Kualitas Sumberdaya Manusia Guna Mewujudkan Kedaulatan pangan. Makalah disampaikan pada Seminar Nasional: Kedaulatan Pangan dan Energi, Juni. Madura; Fakultas Pertanian Universitas Trunojaya

Handayani, Indah. 2018. Alasan Pentingnya Protein Hewani untuk Tubuh. Artikel dimuat pada [www.beritasatu.com](http://www.beritasatu.com). Dipublikasi pada 27 Februari pada laman <https://www.beritasatu.com/satu/480721-alasan-pentingnya-protein-hewani-untuk-tubuh.html> diakses 18 Desember 2019

Hurgronje, C. Snouck, 1996. Gayo : masyarakat dan kebudayaannya, awal abad ke-20. Penerjemah Hatta Hasan Aman Asnah, penyunting dan kata pengantar M Junus Melalatoa. Jakarta: Balai Pustaka

Ismi, Nopri. 2019. Kerbau Pampangan, Sumber Daya Genetik Menjanjikan di Rawa Gambut. Artikel pada [mongabay.co.id](http://mongabay.co.id) dipublikasi tanggal 6 April dimuat pada <https://www.mongabay.co.id/2019/04/06/kerbau-pampangan-sumber-daya-genetik-menjanjikan-di-rawa-gambut/>

Malthus, T.R. 1798. An Essay on the Principle of Population, First Edition pertama. London: Library of Economics and Liberty.

Mudrieq, Sulfitri Hs. 2014. Problematika Krisis Pangan Dunia Dan Dampaknya Bagi Indonesia. Artikel pada JURNAL ACADEMICA Fisip Untad. VOL.06 No. 02 Oktober ISSN 1411- 3341. p 1287-1302

Purnomo, Djoko. 2007. Kebutuhan Pangan, Ketersediaan Lahan Pertanian Dan Potensi Tanaman. Pidato Pengukuhan Guru Besar Ekologi Tanaman Fakultas Pertanian Universitas Sebelas Maret yang

disampaikan dalam Sidang Senat Terbuka Universitas Sebelas Maret Pada Tanggal 24 Nopember.  
Surakarta: Universitas Sebelas Maret

Reily, Michael. 2018. Kantongi Izin, Bulog Siap Impor 100 Ribu Ton Daging Kerbau. <https://www.google.co.id/amp/s/amp.katadata.co.id/berita/2018/02/23/kantongi-izin-bulog-siap-impor-100-ribu-ton-daging-kerbau>. Diakses pada 28 Februari 2018

*Rismayanthi, Cerika.2006. Konsumsi Protein Untuk Peningkatan Prestasi . Arikel Pada MEDIKORA Vol. II, No. 2, Oktober 2006: 135 – 145. Yogyakarta; Universitas Negeri Yogyakarta-Fakultas Ilmu Keolahragaan*

Schensul, Stephen L.; Schensul, Jean J. & LeCompte, Margaret D. (1999). Essential ethnographic methods: observations, interviews, and questionnaires (Book 2 in Ethnographer's Toolkit). Walnut Creek, CA: AltaMira Press.

Siregar, Robert Parlaungan, 2013. Pangan Senjata Ampuh Bubarkan Uni Soviet.Artikel pada Kompasiana dipublikasi pada 24 November. Dapat diakses pada [https://www.kompasiana.com/robertsiregar/pangan-senjata-ampuh-bubarkan-uni-soviet\\_552e67cf17e61df198b4581](https://www.kompasiana.com/robertsiregar/pangan-senjata-ampuh-bubarkan-uni-soviet_552e67cf17e61df198b4581)

Spradley, J. P. 1979. The Etnographic Interview. New York: Holt, Rinehart and Winston, Inc

Spradley, J. P. 1980. Participant observation. New York: Holt, Rinehart and Winston

Suryana, Ahmad. 2007. Dukungan Teknologi Penyediaan Produk Pangan Peternakan Bermutu, Aman Dan Halal. Artikel Ilmiah disampaikan pada Seminar Nasional Hari Pangan Sedunia XXVII dengan tema Dukungan Teknologi untuk Meningkatkan Produk Pangan Hewani dalam Rangka Pemenuhan Gizi Masyarakat, tanggal 21 Nopember di Gedung Auditorium II, Kampus Penelitian Pertanian Cimanggu, Bogor. juga dipublikasi pada [www.litbang.pertanian.go.id/special/HPS/dukungan\\_tek\\_peternakan.pdf](http://www.litbang.pertanian.go.id/special/HPS/dukungan_tek_peternakan.pdf).