

The Future of Animal Production in Rain fed Areas of Egypt

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Although Egypt does not fall into heavy rainfall, rain-fed areas characterized by a rainfall of only 90-120 milliliters per year. However, these areas are characterized by an active presence of animal production, especially sheep and goats. It is interesting to note that sheep and goat number per flock are larger in the herds (averaging 40 heads), while the average size of herds in irrigated areas does not exceed 5 heads. They followed by camel. This presence began hundreds of years ago and will continue to what God wants, despite the obstacles and negatives facing these animal communities.

The objectives of improvement must start with a thorough identification of the components of this production system, and it is clear to all of us that achieving this is accompanied by some difficulties which can be summarized as follows:

1. The nature of the continuous transfer of the herds in pursuit of grazing.
2. The grazing areas are sometimes found in hard-to-reach locations for researchers, such as mountain valleys in the pastures of the Egyptian-Sudanese border area and South Sinai.
3. The difficulty of identifying the feeding level and its quality throughout the year due to vary the pasture throughout the year on the one hand and the animal's selection of food during grazing on the other hand.
4. The difference of rain from year to year, which affects the production conditions as inputs and outputs, and therefore the length of time the studies carried out to arrive at the correct identification of the inputs of this system.
- 5 - Badia secrets, which is known only for who live among its paths, and as a result of the expectation of the people of Badia for aid, they are always keen to hide what is enjoyed by the desert and the elements of secrecy elements of animal production. Unfortunately, most of the studies carried out in these areas have not been able to absorb these points, making them unable to fully express the animal production under the conditions of rainfed agriculture.

There are some general features that can be derived from the studies available as well as the views obtained from roaming in these areas over 16 years, by me, as a prelude to talk about the possibilities of improvement in these areas.

- 1- The economics of raising sheep and goats under the conditions of natural pasture is better for the benefit of the breeder than under the conditions of irrigated agriculture.

1-1 - God compensates the people of Badia, their living in the desert by animal food without compensation, unlike the breeders in the irrigated areas where intensive farming and the need to pay for each food, even the remnants of plantations (unlike the last rule, the peasants owners of a limited number of 2-5 heads, as they leave their animals to pick up all that is available in surrounded lands, but for the limited availability of food, the numbers

owned stays at the same small rates while the available from the natural pasture allows raising large numbers).

2 – The high risk rate of keeping animals in desert areas is not intended to expose sheep to death in droughts and lack of rainfall and then pasture, but it is intended to difficult to predict the state of rain and therefore the availability of food so that the jam to develop a scheme of numbers that can keep .

3 - Lack of rain does not constitute a disaster such as disease epidemics, but it is an economic burden on the jam contrary to his wish, where he finds himself obliged to spend money for feeding the herd to compensate for the deficit in the pasture free, and therefore only the financial ability of the jam swinging between the ordeal and misfortune.

4 - Rain is not the only factor affecting the presence of animal food in natural pasture areas.

The direct connection between rain and its fall periods and the possibility of grazing leads to an error in the accounts of available sources of nutrition. Other factors influencing:

4.1 Topography of the land where valleys form an effective element in extending the use of rain periods and the ability of the Earth to capture and store rain.

4-2 - Eyes and folds allows store of rain for agriculture next to provide a constant source of drinking outside the rainy season.

4 -3- Shrubs and their spread represents the second line of natural pasture after the end of the annuals and the cessation of rain.

4-4. Cereal cultivation on rain is the reserve stock produced by the desert to feed the animal either directly (on grain and straw) or on green barley (when rain is short and grain immature) or indirectly by selling grain.

5- Sheep and goat breeding in the desert is characterized by some differences than other regions.

5.1. The health status and situation is better and the chances of disease are lower due to the low humidity in the atmosphere and the spread of herds at large distances.

5-2 - Good experience in dealing with sheep and goats inherited across generations, unlike the areas of reclamation, for example, where young people with limited experience, which is reflected on the status of herds.

5-3-The tribal nature of the Bedouin provides a security component, on the one hand, and on the other hand, guaranteeing employment for the care of herds other than those of other regions.

5-4 - Medicinal herbs growing between grasses grant from God to the people of experience allow economic treatment.

6 - Development and improvement of animal production in natural pasture areas:

The development and improvement process is multi-faceted and each side features and requirements as well as its objectives and this is what I will address briefly. Meanwhile, optimization, as usual, involves some short- and long-term elements.

6.1. Short-term improvement elements:

6.1.1. Reduce nutrition costs:

The fastest way to achieve a better return has to consider the coming notes to achieve this goal. Suggested packages have to check the following:

- Simple implementation and no need for complex, difficult to transport or fast-fit technologies to accommodate the remote nature of grazing communities

The evaluation of the economic feasibility of the proposed packages should take into account the following:

- Give value to the human element in the implementation of the work, such as cutting and gathering shrubs and separation of leaves from the stems, ... etc.
- Do not overlook the impact of work on the preservation of the environment in terms of the impact of the consumption of some plants to protect the soil from erosion and the like.
- The presence of elements to help expand the implementation of the proposed packages. This includes the availability of the raw materials involved in the proposed feed processing and its presence with a high degree of economic feasibility, as well as the rate of renewal and replacement of these plants to ensure the continuation of the implementation of the proposed package.

Examples of packages that have proved useful and recommended to be expanded in implementation:

- Treatment of straws with urea solution.
- Feeding lambs on concentrated feeds only (Shehata, 1997). This system was able to achieve the average growth rate of 280 grams daily and the conversion of dry food to the growth of 4.3: 1.

Maintain animal health:

Despite the comparative advantage of sheep, in desert in terms of health situation, but in some cases veterinary intervention is a necessity does not considered by breeders or does not find easy to apply or easy to finance, which is reflected on the performance and productivity of the herd.

For example, the migration of herds during the dry season outside the grazing areas for feeding on the irrigated fields is accompanied by infection with some diseases that high humidity of soil help to spread in those irrigated areas, which helps spread parasitic diseases.

6.2. Elements of long-term improvement:

Under this section, activities are carried out to improve the productivity of the animal itself or on improving the pasture.

- As the ability to graze means the success of the animal to take advantage of the nature of food available, the preservation of this ability is important when trying to modify the genetic makeup towards increasing the productivity of the animal unit.

In terms of animal improvement. Improves attention to some things better to follow before thinking to improve animal unit.

- Prior to the trend towards crossbreeding with foreign breeds for improvement, the maximum production limit of local breeds available in the region should be identified by selecting individuals of them and providing the maximum nutritional requirements for them so as to produce the best possible production.
- It may be clear from this test that the available local breeds are capable of high production and that what is lacking is the provision of appropriate food. This is the shortest and best way to improve what in hand of animals because they adapted to the conditions of the region. Or at least let us know that the decline in productivity we are seeing and seek to improve is due to the lack of available food and not the animal itself (eg ... the local sheep gave growth rates of up to 320 grams per day when fed on concentrates only).
- Improve of rain-based grazing areas, could be through extending water channels to parts of them, which will turn them into other agricultural systems. This requires consideration of the existence of a variation in the specifications of the animal that will benefit the irrigated land for grazing purposes, where the animal is allowed to feed without effort which allow possibility of breeding species suitable for intensive production systems.

6.3. Some ways to improve (animals and pasture):

6.3.1. Provision of distinctive local rams

Due to the desert nature of the grazing areas and the isolation of the herds, the breeders generally prefer to choose their sires from their herds and with the progress of years this increases the proportion of inbreeding in the herds, on the one hand, and the limited improvement that can be achieved without expanding the base from which the sires are chosen.

This can be achieved by encouraging the exchange of rams and bucks among breeders because this does not add additional costs to the breeding process. It can also be implemented through the establishment of centers for the collection and sale of distinguished rams. Before selling them to breeders).

6.3.2. Crossbreeding with high-yielding species:

In order to achieve the crossing of its usefulness and to be able to spread new breeds among breeders there are some things to consider:

- Clarity of the objective of improvement and certainty of the value of production of the target before the effort in this area (for example, improvement to add fat tail to the sheep of southern Egypt targeted to offset the effort exerted in it).
- Maintain the percentage of genetic composition of crossbreeds in order to show the productive difference between them and local species needed to not lose the effort.

To achieve this, we recommend the following:

- Identification of specific and small sites for the introduction of breeds to them and not to start with the aim of expanding the distribution where these sites form the starting line for the dissemination of genotypes to neighboring sites as a second stage.

- To ensure that the breeders of these improved genotypes are able to provide their food needs to allow them to demonstrate their productive characteristics.
- The selection of breeders have appropriate numbers (not less than 25 heads) should be considered so that they produce an appropriate number of proposed crossbreeds so that they can identify the productive difference between them and the local species. For a limited number, low production is the share of few individuals - a bad impression in the early stages of the deployment of new breeds).
- The crossbreeding of the foreign breeds directly with the local animals obtained by the jam so that the breeder can see the productive difference between the animals and what crossing will give them. This helps avoid the problem of providing suitable and good numbers of crossbred animals for distribution while their production is limited by the quality of local breeds owned by these farms.
- The use of artificial insemination for crossbreeding of foreign breeds, despite the inherent difficulties and despite the high cost of implementation, is the best and fastest ways to spread imported strains under our conditions in Egypt. It is also considered to be the least expensive on the remote perspective.

6.3.3. With regard to Shami goats, it is the best breed that have proved successful in Egypt in improving the quality of milk and the meat. The Shami goats also proved that their ability to graze was not affected either. Bore goat, a promising strain but for intensive production systems.

The northern coast represents the best area where the crossbreeding of the goats and their results were performed in terms of good performance. However, the problem was at the beginning of the attempt in the difficulty of expanding the spread of the strain. The practice of spreading the Shami goats in Matrouh was to lend the breeders seventy bucks of pure goat in 1983 which owned later by one of the projects funded by America and despite the negative reaction towards some of the distributed bucks at that time, but with the passage of years achieved the spread of crosses in the northern coast.

6.3.4. For sheep, for the animals targeted for grazing, although the preference is for Barki sheep of the northern coast, but with the increase in urban expansion, the rangeland areas were reduced and the system became a mixture between grazing and feeding within the barns, crossbreeding required to improve growth rates and increase twinning. In North Sinai, restricted sheep were tested to a limited extent. Pastoral areas in southern Egypt have not yet experienced any species to recommend.

The second part is the improvement of the production of animals suitable for modern irrigated areas. The increase in the ratio of twins increases as a first target (this can be done by Finnish sheep or Romanov), followed by Awassi sheep, because of the increase in size and weight of marketing, while increasing the production of milk, which provides a good nutrition for the product until weaning, but it does not achieve a twin increase.

Sheep-producing meat (Saffolk) is an important model for improvement, especially in farms under the mixed system (grazing with feed in barns).

It is worth mentioning here that the breeding of Friesian cattle has begun to be encouraged by the northern coast and Sinai citizen, despite the talk about the poverty of pasture and its

lowness. In such cases, the animal depends entirely on the purchase of food to supply the animal, where there is no pasture suitable for the cows, which means that the costs of milk production are relatively high under these conditions.

Dealing with local goats to increase milk production can be a better solution to meet the growing demand for milk in rainfed areas in Egypt.

Sheep that are given high milk production along with the appropriate marketing weight (such as Awassi) are an appropriate solution, but preferably superior twins for sheep such as Kios and East Frisian, can be an appropriate choice for crossing.

7. - Camels and range:

Where the areas of natural pasture in Egypt, especially the poor pasture areas, the most sites that showed camel breeding relatively superior to the rest of the animals, but camels play a role to maximize the benefits of different tree varieties of pastures because of the complementary role is the ability to consume some which cannot be consumed by other animal species.

Thus, camels occupy a stable but vital place, being the source of low-priced meat to a wide range of consumers. Undoubtedly, the advantage of lower prices is due to lower production costs and is due to the feeding method.

The commendable efforts made to evaluate the productivity of camel under the farming conditions showed a decline in fertility rate, growth rates and increase in mortality rates, especially in the early stages of life. This decline is undoubtedly relative, where the comparison is made by camel with different conditions (on-farm) or other animal species. What is important is that camels with these specifications represent a source of cheap meat production.

Improvement is required and recommended but for the best, let me say that it is necessary to maintain them with their comparative advantage in grazing because each entrance raises the cost of breeding may achieve an increase in the quantity of camel meat produced but cannot make them compete other species.

In addition, the nature of camel (size and behavior) is difficult to deal with in farms such as cattle and sheep, and this is also a point that I think should be taken into account, especially with the economic assessment of any entrance to the development of camel production.

Improvement of rangeland:

There is no doubt that improving natural pasture is a difficult business (I certainly start out not being a specialist). But there are some points I would like to talk about.

The foundations for improvement are always clarity of objectives and the availability of correct information about the current situation.

For the objectives, I strive to outline them as follows:

- Increasing and maintaining the vegetation growth, in the area unit with the same available rainfall rates or using improved inputs to provide economical saving of water source (establishing barriers and dams to reduce rain water losses, supplementary irrigation, fertilization, control of grazing - complementary cultivation by multiplication of certain plants, etc.).

- Increasing the cultivated areas of pasture, especially shrubs, taking into consideration that the cultivation of the land with pastoral plants is the most economical use to ensure that the land is still used for agriculture for this purpose (pastoral shrubs) and not replaced with fruit trees.
- Increased access to available pasture, which can include grazing regulation or allow grazing for certain age of animals (grazing to feed the mothers and transferring the lambs for food in barns).
- Replace pasture with other more profitable plants, while studying the environmental side effects before expanding these inputs.

With regard to the information base to be met, summarize the following:

- It is important that the perspective of the study of pasture fit aims to modify or develop the study area without extravagance in academic studies such as classification and knowledge of the chemical composition of plant populations.
- The study should take into account the time allotted to it (the period of the project being implemented) and the extent of the coverage of the data obtained for the variables in the studied pastures that coincide with the seasons of the year on the one hand, which occur with the succession of years on the other.
- The study should identify the availability of plant residues in the area used for animal feeding, other than grazing (quantities and timing of their existence).
- The focus of the study is to know the adequacy for animals, at different times of the year, of their food needs.
- The study should identify the plant alternatives that are not exploited and can be fed to the animal directly or indirectly, with their quantities, density and role in the ecological balance, so that the fruit of the transformation and use of them will not add new problems to the environment.

In this regard, I would like to point out that simple studies, which I think can answer important questions about pasture and its adequacy for animal populations have not yet been carried out

That by follow up a number of pastoral sites representing the pastoral community of a region through regular visits to the sites for viewing and recording only for the following:

- The date of commencement of grazing sites
- The date of stopping the sheep from grazing in the sites.
- Setting grades showing the level of green growth of the pasture each visit.
- Setting grades showing the rate of consumption of pasture before leaving the animals to another site.
- Registration of rainfall rates in areas to be followed up with each follow-up.

This follow-up requires long-term sustainability and is preferred by technicians residing in the regions through their roaming in the region.

The data collected for the different regions and consecutive years answer the questions mentioned above to identify the importance of identifying them to evaluate the inputs from the pasture and the animal production system in an area. At the same time, this does not address the complexity and high costs of implementation.

Satellite imaging is a new alternative that can achieve follow-up accurately and easily.

Know edging, mind use and continuity of search are functions that does not stop.