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Goat Raising in Lebanon in Relation to Reforestation

by

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I. INTRODUCTION

Lebanon has inaugurated an extensive program of reforestation and woodland protection to augment production of wood and timber, as a soil conservation measure and to provide recreational and scenic areas for the people of the country and for foreign tourists. At almost every point where reforestation has been activated, a direct conflict with sheep and goat raisers has resulted. It is known that goats are of great importance to Lebanon and this species has been especially criticized as a destroyer of pastures and woodland. However, to take drastic steps to eliminate goats from the free ranges of Lebanon may lead to political, social and economic difficulties for the country.

In order to examine the "goat problem" in Lebanon and to ascertain what steps might be taken to make the raising of goats and the production of forests compatible, FAO engaged Mr. Benito Talegón Heras, Doctor of Veterinary Medicine and Goat Specialist of the Ministry of Agriculture of the Spanish Republic. Dr. Talegón Heras worked as a part of the Forestry Education, Training and Research Special Fund Project. He arrived in Lebanon on 7 September 1963 and remained there for one year.

The program followed by the expert was divided into four parts:-

1. Visits to the forestry and goat raising areas;

2. A study of the practices of goat raisers, including transhumance, economy of procedures, methods of selection and income possibilities from sources other than goat production;

3. A detailed survey in each of six areas designated for improvement by forestry officers of the project;

4. Investigation of the possibilities of raising dairy cattle in various areas of Lebanon hitherto devoted to sheep and goat husbandry.

The expert wishes to extend sincere thanks to the many persons who so generously extended help to him, and especially to the other officers of the Forestry Project and to the Lebanese Governmental personnel who worked tirelessly with him in his assignment providing equipment and great moral and technical support. Special thanks are expressed to the Project Manager, Mr. E. de Coulon and the co-manager, Mr. Barbous, to Dr. Hajjar, the Milk Production Expert of the Ministry, and Mr. Elias Hatoum, the expert's invaluable counterpart. For all the assistance in arranging the itineraries of work, and for technical advice, the expert wishes also to thank Dr. Sultan Haidar, Head of the Animal Production Department. Acknowledgments are also made to members of the staff of the American University and the personnel of the Animal Research Station at Terbol for their kind assistance.

II. SUMMARY OF RECOMMENDATIONS

1. The number of goats in Lebanon should be reduced by approximately 25% to 300,000.

2. All goats of low production and poor economic conformation should be eliminated.

3. A government purchase program for the marketing of excessive and unproductive goats should be started.

4. A health and diagnostic program must be placed into operation to eliminate tubercular goats and those showing positive reaction to brucellosis. An anti-parasite campaign is needed as well.

5. Goats should be prohibited on productive forest lands or reforested areas.

6. A goat improvement program must be started to improve meat and milk production in the reduced herds.

7. Wherever possible, the improved tethered goat should be introduced on good land.

8. Educational campaigns on goat raising should be started on the village level.

9. Brush lands suited for goat raising and not adapted to productive tree raising should be utilized as goat pasture under controlled conditions.

10. More forage should be produced as emergency feed for goats.

11. Alternate sources of income for displaced goat raisers should be found before their herds are dispersed.

12. Cattle and sheep should displace goats wherever it is economically and socially possible.

13. Strict control of kind and numbers of goats and sheep should be enforced under a proper system of licensing livestock raisers utilizing open range.

14. Abusive use of forest areas must be prevented by fines or other strictures.

15. An accurate census of goats and other stock in Lebanon must be provided.

16. A constant and careful study must be carried out to find means of utilising the good qualities of the goat and at the same time restricting its harmful effects.

III. THE PROBLEM

Lebanon is a mountainous country with only 500,000 hectares of free range for its livestock. It is estimated that there are 400,000 goats in Lebanon and 70,000 sheep. The cattle population is estimated to be 95,000, mostly draft cattle.

It is the opinion of forestry officials that the goat population is excessive and that the damage to forests in Lebanon is due mostly to goats. It is the contention of many that the goat is not important economically and that goat owners subsist on a very low standard of living; Further, the presence of goats conflicts with the development of tourism and wood production.

Goats and sheep move freely all over the country without pattern or organization. They enter forests inflicting severe damage (photo No. 1). Many advocate the complete elimination of the range goat, or their removal to fenced or tethering areas and their substitution by cattle, sheep or other species, or agricultural activities.

The expert, after his study and evaluations has come to the conclusion that, while the uncontrolled and heavy-grazing goat must be eliminated, the goat serves a very valuable function in Lebanon, providing as it does, about 40% of all meat and milk consumed. The goat also provides raw material for the active leather and rope industry.

It would seem that the number of goats is not so high as estimated. This was judged by the expert using the criteria of weight and condition. It appears that 400,000 goats utilizing 500,000 hectares of range (together with 70,000 sheep and 95,000 cattle) would be very poorly fed. This does not appear to be the case as the goats are vigorous and in good flesh. In spite of this, there is no doubt that the goat numbers should be reduced under a national plan.

It was noted that damage attributed to goats is really caused by cutting forests for firewood and for feed purposes, as can be seen in photo No. 2. Laxity on the part of forestry guards is responsible for much of the damage to forests.

Of the estimated 1,500,000 human population in Lebanon, 2,850 are goat owners who employ 2,430 herders. It is argued that all of these persons, or 1.4% of the Lebanese live on an extremely low level (Table I). This is not the general case, as goat owners live on a level comparable to other range livestock owners.

Contrary to common belief the goat can be a very profitable animal, yielding on the average about 45 Lebanese pounds per year for milking does. In addition to the profits, the country depends upon the goat for its protein in the form of cheese, meat, yoghurt and lebneh. The manure provided by the goat is also of extreme importance to the general agriculture of Lebanon.

The expert in his visits spent a considerable time on the six project areas designated in Map No. 5 in the Appendix.

Area I. This is the Kammuah region and is entirely forested in high mountains. It is a very degraded area (photo No. 2). Damage in Area I is mostly man-inflicted. Photo No. 3 shows a high range of Area I where many sheep, goats and cattle graze during the summer. This range could be improved by controlled reduced grazing and by drainage to avoid water-logging. The drained water could be stored in reservoirs for use during the dry season on the plains for the benefit of the dairy industry serving Tripoli, only 30 kms. distant. Cows could replace goats under such conditions. Area I has 66,000 goats or a density of 38.89 per 100 hectares in the summer, and 46.14 per 100 hectares in the winter.

Area II. This is also a high mountain region where cedar forests abound on steep slopes. In the lower altitudes (Akoura plain) of this area, terraces have been built and fruit trees have been planted successfully.

The aim of the project is to reforest the cedar regions and to carry out range improvement on the Akoura plain. Photo No. 4 illustrates the condition of forests and range of Area II.

Area III. This is the Anti-Lebanon, also on steep terrain, with several plateaux which are less stony. Mountain sides are good goat and sheep ranges. In some of the extremely degraded brush country, only goats can make use of the sparse growth (photo No. 5). On the plateaux, grain is grown and sheep and goats utilize the stubble fields. Range improvement should be started in Area III.

Area IV. This is the Awali district composed of three sub-areas (IVa, IVb and IVc) (see general map). Watershed improvement and the formation of a national park are projected for this whole area.

Sub-area IVa is the largest of the three. It has a coastal zone where cultivation and fruit raising are possible. There is also a high mountainous portion in sub-area IVa where excellent summer grazing is possible for four months of the year. It is interesting to note that many former sheep raisers in sub-area IVa have become goat raisers because the latter operation is more profitable (photo No. 6).

Sub-area IVb is reserved for a massive reforestation program. The land is rocky, rough and steep and accessible only to goats (photo No. 7).

Sub-area IVc is almost entirely cultivated and many fruit farmers live here. Many goats in this sub-area find feed only on the road sides and uncultivated land. Control of goats under such conditions is very difficult. A great reduction of goats in this area would be beneficial.

Area V. This is the Hermon (Hasbaya) region where oak trees are being encouraged and protected. It is entirely stony and grows coppice and similar flora. Goat raising in this area would not permit regrowth of the oak trees and probably the goats should be banished from Area V unless an effective system of forest guards can be made to function. At present, there is a high density of almost one goat per hectare here during the summer and about one goat per four hectares during the winter. This is a military zone, and no pictures were permitted.

Area VI. This is the Tibnine region, very stony, rough and mountainous, with some level and cultivable land. The largest goat population and the highest density of goats for Lebanon is in this area. In privately owned woodlands, farmers are cutting their trees to dedicate themselves to profitable vegetable growing. Less feed is available for goats at present than previously due to conversion of forest land to cultivation. About 202,000 goats are concentrated in Area VI, 129,000 during the summer grazing periods and an additional 73,000 from adjoining areas for winter feeding. (See Photo No. 9 and diagram II).

The goat population in the whole of Lebanon is estimated to be as follows:-

Bekaa	120,414
Mount Lebanon	88,288
North Lebanon	66,652
South Lebanon	129,863
	399,217

Although the expert believes there are fewer goats in Lebanon than the above estimates indicate, he believes the figures may be utilized until the already-begun census is published.

The principal goat breeds are the Balady, Damascus Red and the Angora. Crosses among these three types are common. The system of goat raising is primitive universally. No milk records are kept by private goat raisers, and no supplemental feed is given to goats. Goat herds have varying numbers of sheep in them, the sheep being of the Awassi breed, a carpet-wool type yielding white, black and mixed wool. Sheep are kept for milk as well as meat and wool. No large selection or improvement work has been carried out for sheep or goats in Lebanon.

Map VI indicates that there is a large transhumance of goats from east to west and north to south in the winter and its reversal in the spring. The South Lebanon during the winter is greatly encumbered with goats from all over the country during the winter months.

By personal survey and questionnaire, the expert was able to ascertain certain data on goat production as follows:-

Milk production - average per day	200 grams
Milk production - average for 150 days	30 litres
Yearly gross return from milk	10.5 Lebanese pounds
Manure production per year	1 sack
Yearly gross return from manure	5 L.P.
Hair production per year	0.5 kg.
Yearly gross return from hair	2.5 L.P.
Return from old goats and culls	17 L.P.
Gross return per kid weighing 7 kgs.	19.6 L.P.
Gross income per milking doe yearly	54.6 L.P.
Yearly expense per adult goat	10 L.P.
Net income per adult goat	44.6 L.P.

The above figures apply to a rather mediocre herd, but there are many herds that have a net income of 65 Lebanese pounds per year per adult. Exceptional herds like those of the Convent of Air-El-Jawzeh whose average milk production for 150 days is 125 litres, report a net income of 85 Lebanese pounds per adult goat.

The expert had few opportunities to conduct diagnostic tests with goats in Lebanon, but it is known that most goats are more or less parasitized and that thousands of does suffer from brucellosis. Tuberculosis and pox are known to exist. It was noted that milk is universally boiled in Lebanon before it is consumed, to make it safe.

In the face of the considerable parasite and disease conditions in Lebanon, it would seem advisable for the Government to conduct large-scale diagnostic tests on all stock condemning all animals reacting positively to brucellosis and tuberculosis. Campaigns against internal and external parasites of sheep and goats should also be instituted.

IV. RECOMMENDATIONS

The "so-called" goat problem in Lebanon and neighbouring countries cannot be solved for many years to come because the country has become dependent upon the goat and the ideal disposal of the question by total elimination would present other rather serious social problems. Since it is very likely that goat herds will continue to be of importance, certain recommendations can be made which it is hoped will take advantage of the beneficial aspects of the caprine nature while at the same time keeping to a minimum the destructive tendencies of the species. That the goat is useful and extremely important economically has been proved beyond a doubt, and therefore instead of annihilation, the goat should be reduced, controlled and subjected to the same technical criteria that other domesticated animals are accorded.

1. The number of goats appears to be excessive, and many forests and pastures are being degraded in Lebanon by them and by sheep. Since it will be impossible to reduce goat numbers drastically, and since a starting point must be found it is proposed that the population of goats be reduced to 300,000, which would be a reduction of approximately 25%. The Government's present estimate of 400,000 goats is used as the basis for this reduction.

2. Old, unproductive, under-sized goats of both sexes and younger goats of poor constitution and undesirable conformation should be the first classes to be sold to the butcher.

3. If necessary, the Government should purchase the condemned goats at current prices to encourage the program of goat reduction.

4. A program of diagnostic procedures should be undertaken throughout Lebanon by the Veterinary Services to locate and eliminate goats suffering from tuberculosis and brucellosis.

5. A law should be passed and enforced prohibiting the keeping of free range goats in productive or growing forests, and an efficient corps of forestry guards should be formed to enforce the law.

6. Since the range goat can be eliminated only after the passage of many years, in conjunction with a systematic reduction program, a serious campaign for the improvement of the remaining stock should be undertaken. Crossbreeding to the improved types of goats such as the Saanen, Toggenburg, Damascus and European Alpine should be attempted. Good results can also be achieved by selection, using the most prolific strongest and more highly productive native stock upon which to build an improved strain.

7. Wherever good productive land is available for the purpose, the range goat should be replaced by tethered goats of improved productive capacity.

8. An educational program should be started to instruct the people concerning the possible harmful effects of the range goat on forest lands and methods of raising goats which are less harmful than the present techniques.

9. To avoid the deleterious effects of overgrazing during critical periods, especially during the winter on the plains, the Government should encourage the raising of fodder for goats.

10. While the goat must be eliminated from forests, there are large areas which are brushy in nature and which cannot be used in the economical production of timber or firewood. It is proposed that these brush areas be devoted to the pasturing of goats in limited numbers and under strict control of the Lebanon forestry and animal production authorities.

11. Alternate sources of income should be sought for present goat farmers to encourage some to leave this activity, thus reducing the number of goat holdings.

12. Wherever goats are raised in areas suitable for cattle production, every governmental help should be given to goat farmers of the area to purchase cattle and improve the fodder producing capacity of the area. Many areas requiring drainage should be provided with properly installed canal systems to reduce waterlogging of soils to make them more productive for cattle.

13. In pastures suitable for sheep, the goat should be substituted by this species which is less damaging to forests.

14. A system of licensing should be instituted among range goat raisers and the number and kind of goat should be controlled by law to match the productive capacity of the range.

15. A strict set of rules must be drawn up to prevent absuive use of forest and other pastures by goat, sheep and cattle raisers, and specific fines and punishments for infringements should be published as well.

16. An accurate census of goat, sheep and cattle and other domesticated species is needed.

17. Careful study of the consequence of drastic goat reductions in Lebanon must be carried out and reductions must only be permitted to an extent which will not cause irremodial reductions in food supplies and manure.