National Sheep and Goat Breeding Program and Breeder Associations' collaboration systems of Turkey

Daskiran I., Ayhan V.

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National Sheep and Goat Breeding Program and Breeder Associations' collaboration systems of Turkey

I. Daskiran[1] and V. Ayhan[2]

[1]Ministry of Food Agriculture and Livestock, General Directorate of Agricultural Research and Policies, Livestock and Fisheries Department (TAGEM). Tarım Kampusu. Yenimahalle, Ankara (Turkey)
[2]Sheep and Goat Breeders Associations of Turkey. Cevizlidere Mah. 1249 Sok. Batuhan Apt. No: 7/20 Çankaya-Ankara (Turkey)

Abstract. Goat breeding has an important role in Anatolian cultural and social life for many years. Turkey is one of the major goat breeding countries in Europe and it has approximately 7.2 million goat population with attractive breeding systems and genetic diversity. Some major Turkish goat breeds are Angora, Kilis, Damascus, Hair goat and Honamli goat. The goat population in Turkey is mainly composed of the Hair goat (97%) (Anatolian Black), and the rest of goats belong to different local types. The Hair goat serves multiple purposes (mainly meat and milk), but it's productivity is quite low. Goat production is distributed to whole of Turkey, especially at mountainous areas of Mediterranean, South-East Anatolia and South-West Anatolia regions and production systems are basically extensive and semi-extensive. On the other hand last ten years private sector investment has been increasing especially in the west part of Turkey. Due to the decrease in the number of goats in Turkey during the last ten years, the Ministry of Food, Agriculture and Livestock (MFAL) has started National Sheep and Goat Breeding Program with breeders and their organizations (Turkish Sheep and Goat Breeders Association). Project started working with 2 breeds (Akkaraman Sheep and Angora Goat) and it has reached to 12 sheep&goat breeds, 472 breeders and 80,000 animals in the first stage. In the second stage, the project was expanded, due to its efficiency and to the requests of breeders. It is continuing with 29 national sheep and goat breeds and approximately 800,000 animals. This project has multiple partners (Breeders associations, Universities, Research Institutes of MFAL) and it aims to improve native pure-bred species together with sheep and goat yields and at the same time set up a national breeding program for goat and sheep production.

Keywords. Breeders association – Autochtonous breeds – Development – Goat population – Hair goat – MFAL – Turkey.

Le Programme National Sur L'élevage Ovin Et Caprin de la Turquie

Résumé. *L'élevage caprin joue depuis longtemps un important rôle dans la vie culturelle et sociale de l'Anatolie. La Turquie est l'un des grands pays d'élevage caprin de l'Europe avec environ 7,2 millions de têtes et d'attrayants systèmes d'élevage ainsi qu'une intéressante diversité génétique. Parmi les races majeures de la Turquie se trouvent les chèvres Angora, Kilis, Damas, Noire d'Anatolie et Honamli. La population caprine de Turquie est composée principalement de chèvres à poile de race Noire d'Anatolie (97%), tandis que le reste des caprins appartiennent à différents types locaux. La Noire d'Anatolie est polyvalente (surtout viande et lait), mais sa productivité est très faible. La production caprine est distribuée dans toute la Turquie, en particulier dans les régions méditerranéennes montagneuses et les régions du sud-est et du sud-ouest de l'Anatolie, et les systèmes de production sont surtout extensifs et semi-extensifs. D'autre part, sur les dix dernières années, le secteur privé a augmenté ses investissements en particulier dans la partie occidentale de la Turquie. En raison de la diminution du cheptel caprin en Turquie sur les dix dernières années, le Ministère de l'Alimentation, l'Agriculture et l'Élevage (MFAL) a lancé le Programme National d'Amélioration Génétique des Ovins et Caprins, avec les éleveurs et leurs organisations (Association d'éleveurs ovins et caprins de Turquie). Le projet a d'abord travaillé sur 2 races (moutons Akkaraman et chèvres Angora) pour ensuite passer à 12 races ovines et caprines, avec 472 éleveurs et 80.000 animaux pour la première étape. Pour la deuxième étape, le projet s'est élargi, dû à son efficacité et aux demandes des éleveurs. Il se poursuit et englobe maintenant 29 races nationales ovines et caprines et environ 800.000 animaux. Il s'agit d'un projet*

multi-partenaires (associations d'éleveurs, universités, instituts de recherche du MFAL) dont le but est d'améliorer les espèces autochtones de race pure parallèlement à la production ovine et caprine et en même temps de mettre en place un programme national d'amélioration génétique pour la production ovine et caprine.

Mots-clés. *Associations d'éleveurs – Développement – Races autochtones – Population de chèvres – Chèvre à poil – MFAL – Turquie.*

I – Introduction

Turkey is located in the eastern Mediterranean as a bridge between European and Asian continents. Total land area of Turkey is 785,347 km^2 and its population is a 75,627,384 in 2012 (Anonymous, 2013a.) Turkey has different animal domestic genetic resources with different as geographic distribution and importance, and is taking an important position in livestock production of Europe. Turkey is also one of the most important countries in the world in terms of animal genetic resources. Turkey has 27.4 million sheep and 8.3 million goats (Fig. 1) which represent 28% of EU sheep population and 63% of EU goat population respectively (Anonymous, 2013a, 2013b). Although sheep and goat productions have many advantages in Turkey, the levels of milk production for per head, growth and carcass yield of animals are very low and not enough for intensive production level. Main reasons for low yield in sheep and goat productions are insufficient genetic improvement programs, traditional breeding methods, inadequate organizational structure and poor technical capacity of breeders. Sheep and Goat Breeders Association (SGBAT) in Turkey is very young and has been supported to develop better organizational structure for last five years. Currently SGBAT is organized with approximately 171 thousands members and 18.7 million registered sheep and goats in 80 different provinces of Turkey. As a result of the low educational level, inconvenient socio-economic capacities and lack of organizational infrastructure of small ruminant breeders, these conditions do not allow them to be open to innovations in animal production. All of these reasons and problems are big barriers in front of the SGBAT and are waiting to be solved.

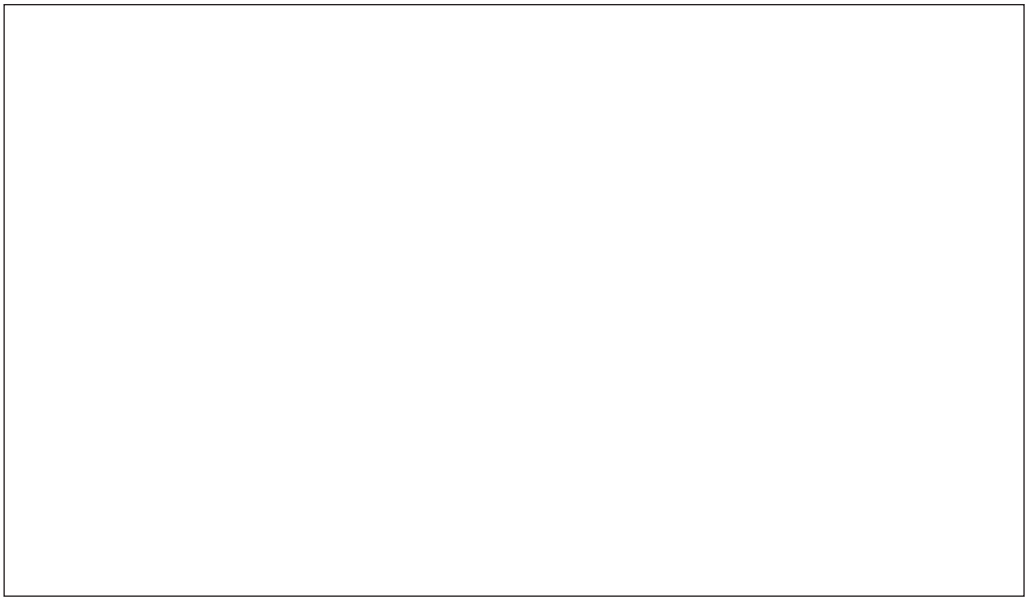


Fig. 1. Sheep and goat populations in Turkey (Anonymous, 2013a).

To improve organizational infrastructure of SGBAT, increasing technical background of breeders set up a small ruminant registration system, SGBAT needed to be supported by Ministry of Food, Agriculture and Livestock (MFAL). At this point MFAL have started to National Sheep and Goat Breeding Programme (NSGBP) in collaboration with SGBAT.

II – National Sheep and Goat Breeding Program in Breeder Conditions (NSGBP)

Turkey is divided into seven main geographical regions as seen in Fig. 2. Different animal species and breeds and livestock systems exist in the seven regions. The statistics about animal production from Turkish Statistical Institute (Anonymous, 2013a) indicates that there are 13.9 million cattle, 107 thousand water buffalo, 27.4 million sheep, 8.3 million goat (Fig. 1) and 257 million poultry in Turkey. MFAL has initiated National Sheep and Goat Breeding Programme (NSGBP) in the field conditions to solve the some of the main problems in sheep and goat production. In the beginning of this project there were only two local breeds (Akkaraman sheep and Angora goat), which were selected as base animal material, within two provinces in Turkey. After NSGBP is started, it improved by getting support from other partners and many breeders organizations. The development of Sheep and Goat Breeders Association of Turkey (SGBAT) has been stimulated since the start of this project in 2006, and the involvement of researchers at the Universities and MFAL-Research Institutes has been increasing.

Fig. 2. Geographical regions of Turkey (Anonymous, 2013c).

The project has been developing for six years and it is actually continuing with 24 sheep and 5 goat national breeds, 54 provinces, 4,000 breeders and approximately 800,000 small ruminants. The project has a selection programme, and technical staff in each sub project collects data for selection. When breeders deliver the data to project leader, breeders receive financial cash support from MFAL through SGBAT.

If sheep or goat breeders want to be partners of project, they have to register to the provincial Sheep and Goat Breeders Association. The main differences of this programme from other MFAL projects are summarized below:

– Programme covers all sheep and goat production partners.

– Breeders are important partners of the programme.

– Breeders associations are motivated with this programme.

– Scientific infrastructure of Sheep and Goat Breeding programme has started with the programme.

– The main component of the programme is to improve the awareness of breeders.

– MFAL supporting system efficiency has started to increase.

III – Project aim

The aim of the project is the improvement of different yields (milk, meat, mohair, prolificacy) of national (local) sheep and goats in breeder conditions in Turkey. While improving yield characteristics of small ruminants, the infrastructure system of breeder organizations, the setting up animal registration systems and thereby the awareness of livestock breeders will be increased and at the same time the local gene resources of Turkey will be protected at breeders level.

IV – Method

The principal part of the programme is pure breeding and basic selection methods (Fig. 3). Animal materials of the project were divided into 3 main groups such as elite, semi elite and base flocks (Fig. 3). Elite flock provides high quality rams and he-goats for the semi elite flock. Animals in the elite flock are under full control. All the activities about mating are recorded by the breeders and

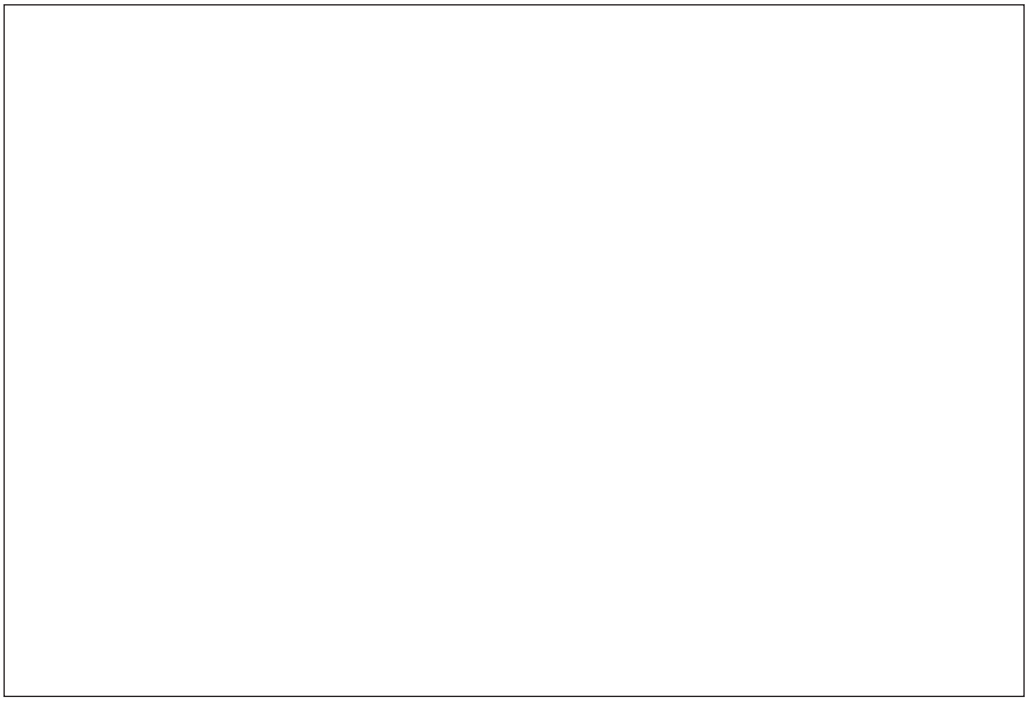


Fig. 3. Project plan (prepared by İ. Daskiran) (Anonymous, 2005).

technical staff of the project. The collected data are sent to the project leader for genetic evaluation to select the parents of next generation. Sheep and goat breeders as project partners have to allow ram and billy goats to be transferred among flocks based on the protocol with the association.

V – Project partners

For the efficiency of the project and the productivity of the project partners, networking is very important. We collaborated with the all sector partners in this project. Researchers from Universities and Institutes of MFAL, Breeders Associations and sheep and goat breeders are gathering together for the first time. All of them try to develop breeding strategies, and improve small ruminant production. Actually we collaborate with 25 universities all over Turkey and 40 project leaders working on the projects. Benefits of project leaders from the projects are to provide real situation for researches and to use the project budget for different scientific researches. The results from these researches are being used to improve animal materials. Except for using scientific material, they do not take any extra consultancy fee. Project leaders from MFAL Research Institutes are also taking active role in the project. Coordination of the project is provided by MFAL-General Directorate of Agriculture Research and Policies, Livestock and Fisheries Department (GDAR-TAGEM). The most important partners of the project are 54 breeder associations. They have been responsible for all of implementation process of the project, collection of data, works of technical staff in the project and breeder training activities for 2012.

VI – Project areas

Currently, the second period of the project is being carried out in Turkey. The first period was implemented between 2005 and 2010 and covered approximately 80,000 goat and sheep, 472 breeders by cooperation with 13 province breeders associations.

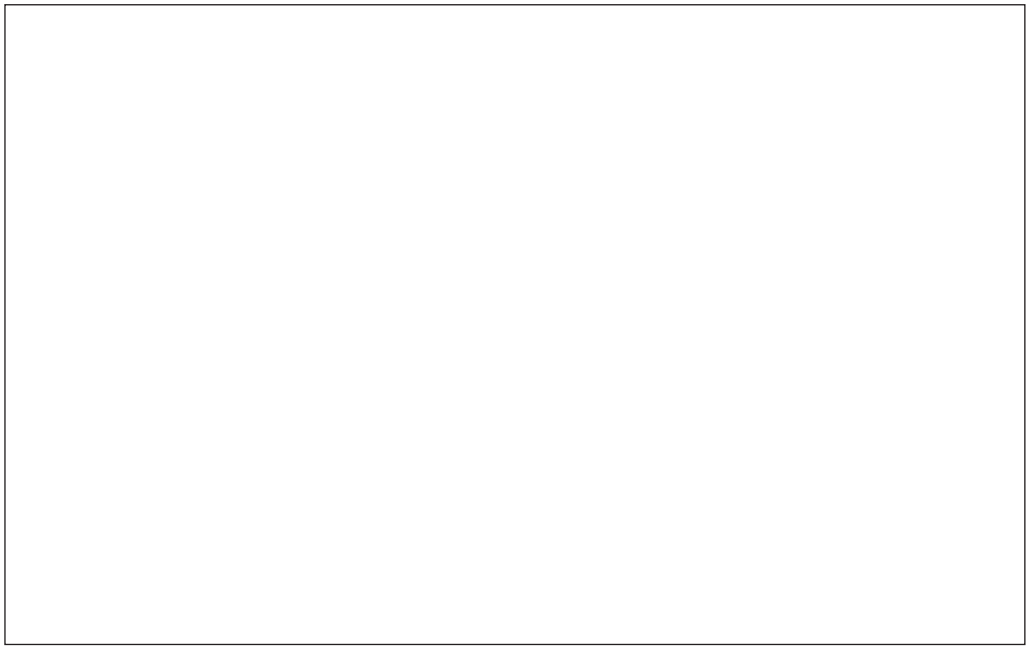
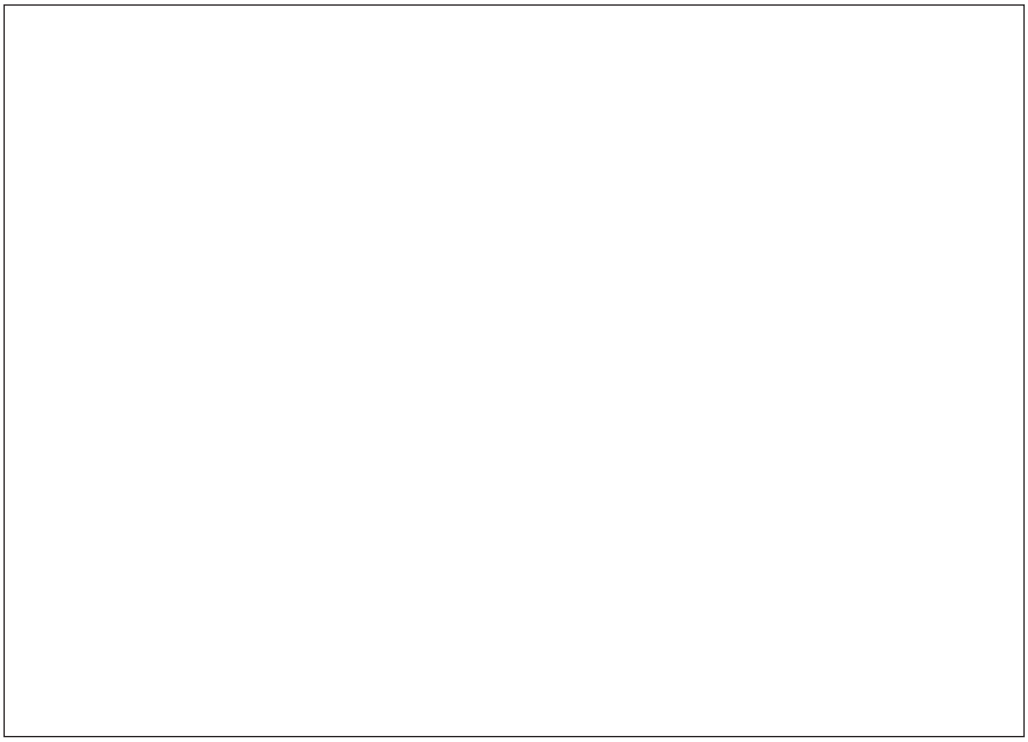


Fig. 4. Distributions of projects and sheep and goat breeds in Turkey.

The second period has started in 2011 and will finish in 2016. In 2012, sheep and goat population covered reaches to approximately 800,000 animals and the number of projects is more than 120. Fifty-four sheep and goat breeder associations have been involved in projects in 54 provinces. As seen in Fig. 4, the projects cover the big part of Turkey.

VII – Main activities and organizational structure

Main activities of the project are based on the data collection. Thus all teams in the project focus on correct and regular data collection from animals and analysis by using different computer programs. A technical staff (zootechnician, veterinary or animal or veterinary operator) is hired for each project and his salary is paid from budget of the project. MFAL provides financial support to breeders for each animal. Each project leader works with project technical staff, breeder associations and GDAR-TAGEM. Breeder associations have to provide logistic support to project leader, project technical staff and share all responsibilities. The project leader collects needed data for improving yield characteristics of animals and carries out the data analysis. GDAR-TAGEM (General Directorate of Agriculture Research and Policies, Livestock and Fisheries Department) holds on annual meeting for the programme. All project leaders attend to this meeting and they present own data, results, problems and solutions. The annual evaluation meeting provides good opportunities all researchers and project leaders for sharing their experiences. The planning of the next year is also determined in this meeting. The final report of annual meeting is prepared by GDAR-TAGEM experts and sent to all project partners. Process chart of project is given in Fig. 5.



GDAR-TAGEM: General Directorate of Agriculture Research and Policies, Livestock and Fisheries Department; **SGBAT**: Sheep and Goat Breeder Assoc.of Turkey; **PL**: Project Leader, **PTS**: Project Technical Staff.

Fig. 5. Project process (prepared by İ. Daskiran).

VIII – Faced problems

Project has been expanded day by day with the supports of MFAL, Sheep and Goat Breeder Association of Turkey (SGBAT) and all breeders concern. The Project has multi-partners and coordination problems have some effects on the project efficiency. The most important handicap is that breeders awareness level is very low, especially goat breeders do not want to leave from traditional systems that seems as a habit for them. Breeders, associations and MFAL have faced different problems. Some problems are listed below dealing with project implementation period (Daskiran *et al.*, 2009).

- Active registering system coincides with other sheep and goat registering system and MFAL technical staff capacity is not enough for ear tagging activities.
- Some breeders do not follow the rules and responsibilities of protocol of the project. Their awareness and technical background are very low.
- Project budget management problems.
- Difficulties about legal situation and active livestock legislation need to be updated each year.
- Project systems and objectives need to be demonstrated to the sectorial partners.
- Technical backgrounds of breeders and associations must be improved and modern biotechnological methods must be used in elite flocks to increase project productivity.

IX – Perspective and results

Actually the Project is in the second phase. TAGEM is going to plan one extra period to continue some projects between 2016 and 2021 and some of them will be transferred to sheep and goat associations. In this term MFAL may have developed a new project vision and supporting systems based on regional or country prioritization (Daskiran *et al.*, 2012). On the other hand within the targeted time, animal registration system must be set up and selection application has to start. The main goal of this project is to establish high quality breeding sheep and goat farms and develop high genetic capacity rams and billy goats in Turkey. As seen from this goal, the first and most important rule is to set up and sustain an animal registering system. The second important aim is to support the animal breeder organizations and set up an organizational infrastructure. Project supports breeders to take active role in breeding and improve awareness. During the implementation period of the project, the technical staff gathers data and train breeders on animal feeding, housing, health and breeding methods. In addition, sheep and goat researches are promoted and scientific activities have developed. Project leaders have produced 40 international articles and 44 national articles.

Project capacity (animal, project area, human resources capacity) is large and coordination is the most important instrument for reach the targeted aim. Cooperation is also the most effective way to improve quality of this program and animal production.

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