



Review Article

THE STATUS OF NATIVE FARM ANIMAL GENETIC DIVERSITY IN TURKIYE AND IN THE WORLD

M. İ. Soysal*, E. Özkan, E. K. Gürçan

Trakya University, Agriculture Faculty in Tekirdağ, Dept. of Animal Science, Tekirdağ, Turkey

ABSTRACT

There were argued that 50% of livestock species of European extincted with in the period of last 100 years and there are risks for 40% of prevailing present 1100 breeds of Europae (F. Wigh-Larsen, 2000). For this reason, there are rising public interests to protect the planet earth ecologically. It is reported that for the efficient animal production it is also necessary to utilize the potential of native genetic farm animal sources. According to the convention on biological diversity signed majority of world's nation in order to obtain sustainable development and also welfare of our future we must pull attract of attention of public opinion on Ecological protecting of planet earth. Animal improvement programs should include the target of demanded countries need together with efforts preserving genetic diversity of farm animal genetic sources of the country. It is also strategically necessary to keep the animals even breeds with worse productivity comparing with highy productiv exotic breeds for the futures. Material may be would need in case of necessary. Due to theese reasons FAO start a program so called Domestic Animal Diversity – Information System (DAD-İS). This program aimed to monitoring the state of World Animal genetic resources (Sow-ANGR). Besides these studies every country trying to prepare their National report on this issue. National coordinators of the countries participate to this program are gathering regularly for the intention of World watch list. There is also intention to prepare a kind of farm animal encyclopedia. There is much software as a databank of farm animal genetic sources also constructed. This study is intended to give brief explanation about the state of prerserving farm animal genetic sources of Turkiye and to show an examples as a software program of turkishdatabank of native farm animal genetic sources. Database examples in Türkiye and world were explained in this paper.

Key words: Animal genetic sources, Domestic Animal Diversity.

INTRODUCTION

The idea carried on by FAO as global strategy for the management of Farm Animal Genetic Sources was initiated in 1993. The strategy developed by FAO aimed utilization of animal genetic sources through active and sustainable manner. This concept also included sustainable, developments and conservation programmes for them.

To maintain as much as possible high level of genetic diversity among the existed farm animal breeds and also to cope with the risk of endangering breeds.

The need for keeping the existed genetic diversity of farm animals is not necessary for only the conservation point of view but also needs for increasing in production efficiency with minimal environmental impact.

Genetic diversity of Livestock has a risk of being lost. The number of farm animal breeds has drastically declined over past half century.

According to the study done by FAO up to 30% of Global mammalian and avian Livestock breeds are faced currently at risk of being lost and cannot be replaced (1-6).

The reasons of becoming breeds rare on at risk of totally extincted are even do not suit contemporarily demand of consumer breeders or their qualities not been understood by consumers. As a rule if any of breeds consist of below the number of 1000 animals in population are considered as a rare and endangered.

FAO estimates that every week one breed of farm animal genetic sources are dissappered. The most popular visible reasons of this tendency are as follows

- 1- Destruction of natural environmentals and native habitats of farm animal breed.
- 2- Development of Genetically uniform livestock breeds so called exotic breeds.
- 3- Farmers or consumer the change in preferences of farmers for certain breeds.

Farmers are focussing new farm animal breeds in order to maximize their income. FAO also claiming 16 and 15 percent of 3831

*Correspondence to: Prof. Dr. M. Soysal, Trakya University, Agricultural Faculty, Department of Animal Science, Tekirdağ, Turkey

breeds of farm animals existed in the beginning of this century are extincted and become the status of rare respectively.

In other Worlds it is believed that over 617 farm animal breeds have become extincted since 1892.

Farmers naturally are having their decision regarding preference of breeds according to the commercially point of view.

The growth performance (productivity), pest and disease resistance, else of handling adaptation, occurrence level of habitat and technology are the components of their commercial interests whose had most important pressure on Livestock diversity.

The tendency of having animal with more efficient level of economically important traits. In spite of their low level of traits related with native breed's adaptability to the existed environment naturally resulted with crossbreeding with exotic breeds.

Several reasons were the cause of genetic erosion from the beginning of civilization farm animal genetic sources of the world have lived in close association with humans being mutually influenced to their presences. The unique genetic heritage of domestic genetics sources has contributed to the human welfare by providing their economically important traits such as milk, meat, eggs, fibre in the process of civilizations and evaluations and results of close associations over thousand of years by the results of gradual adaptations of animals to the suitable environmental conditions some sub groups of populations so called breeds are distinguished with their preferred morphology and physiological traits. Cattle for example lives everywhere of the world and has been well said that cow is the rural way of life including nomadic human population the daily life more totally dependent animals than urban people. In urban area animals have a value of their value as a source of protein diets which is most beneficially and prestigious sources of food. Animal has value as providing recreation and material for agrotourism.

Consequences of domestication of animals some species such as farm animals have widely disappeared in the world. Some of the species such as Camelidae, Yaks, Mithun Elephants are more restrictedly dispersed. Very few animal species have been chosen by humans's food requirements for domestications, but there are numerous breeds within each of species selected. So various subgroups of any species of farm animals have adapted to the different, rigours of harsh climate conditions of the world: Any breeds

adapted to any area has the capability of resistance to endemic disease and are able to survive on poor quality and seasonally feed supplied area of the world.

The human being's natural attitude of looking for new type of animal with desired level of productivity has consequently resulted with interbreeding animals and germplasm around the world today has presented humans with opportunity to produce new gene combinations within animal species. This results has either positive or negative effects. Positive effect included chance of choosing the breeds or crossbreeds best adapted to produce well under desired conditions. The negative effects include growing tendency to lose native breeds as they are replaced or crossed with exotic germplasm. Besides with destruction of some breeds existed more tragically in some cases we do not even know what are the features of lost breeds. This inclination tends to the public aware to start inventory studies on the farm animal genetic sources. The process of recording the characteristics of existed farm animal breeds needs first public awareness. This kind of study also requires international level of cooperation.

First step of this inventory studies is almost decide whether they should be conserved or not. The economic standpoint of this kind of conservation studies relies on the potential need for these genetic traits in future. In other words these genetic traits as they are of great scientific interest may will be needed on and more over they are also representative of human beings history and culture.

There is controversial relations between biological diversity and civilizations. There is growing international concern about destruction of farm animal genetic diversity. There were many organizations has been established in order to keep biological diversity of farm animals.

Most well known studies in this field are software programs and web pages. Negotiations on the loss of genetic diversity are in progress for an international convention of biological diversity. FAO already outlined the strategy of conserving the genetic diversity as sustainable use of genetic resources base of agriculture. Sustainable developments implied that process of using the resources base will continue, but in such a manner the resources are not depleted.

FAO's study of preservation of farm animal genetic sources are based on the primary guidelines for development of national

farm animal genetic resources management plan (<http://www.fao.org/dad-is/index.htm>). According to the guidelines of Domestic Animal Diversity information system (DAD-IS; 2.0). The FAO global strategy for the management of farm animal genetic sources. The global strategy for the management of farm animal genetic sources provides a technical and operational framework for assisting countries. FAO has also established state of world AnGR, monitoring map. According to that map as of March 2001 a program has 180 member nation 1 organization and 10 non member organizations.

General Directorate of Agricultural Research (GDAR) of Ministry of Agriculture and Rural Affairs are responsible to represent the country in FAO's DAD-IS framework. It is supposed that National Coordination should coordinate the researches, university institutions and NGO studies related with framework in the country.

GDAR has several *insitu* and *exsitu* studies of preservation of farm animal genetic sources. One of these researches are dealing with genetic conservation of domestic poultry (<http://www.tagem.gov.tr>).

The breeds are subjected to the program of genetic preservation studies are Eastern Anatolian, Red Cattle in Erzurum, Angora Rabbit (Poultry Research Ins. in Ankara), native silk worm lines of Bursa region (Silk Worm Research Institute in Bursa), native poultry breed of Turkey, Sakız, Dağlıç, İvesi, Karacabey Merino, Kıvrıkcık, Karayaka, İmroz sheep breeds (Bandırma Research Ins.), Red Karaman sheep breeds are preserved in Eastern Anatolian Research Inst. in Erzurum. According to the World Watch List for domestic animal diversity (3rd edition Edited by Beate D. Scherf Food and Agricultural Organization of the United Nations, Rome, October, 2000). Ten cattle breeds, two horse breeds and three sheep breeds are extincted. The most important reason for extinction is cross breeding with exotic breeds (economic reasons).

According to the same source Malakan horse breed and Cinecapari sheep breeds are in endangered state (as breeds at risk). During last three years the remaining eight breeds of sheep (Kıvrıkcık, Karayaka, İmroz, Dağlıç, Akkaraman, Morkaraman, İvesi), one goat breed (Angora Goat) and four cattle breeds (Gray Cattle, Native Black Cattle, eastern Anatolian Red Cattle, Southern eastern Anatolian Cattle, Red Cattle) are subjected heavy pressure of crossbreeding from

economic point of view. To pull attention to this problem two university based databases were constructed. One is called native farm animals genetics sources (<http://genkaynaklari.sitemynet.com>)

established department of animal science of Tekirdağ Agriculture Faculty of Trakya University by Prof. Dr. M. İhsan Soysal for all farm animal species. One data based from Middle East Technical University by Prof. Dr. İnci Togan for only sheep breeds (<http://togan3.bio.metu.edu.tr/turkey.html>) as the form of database of sheep breed of Turkey.

The General Directorate of Agricultural Research has also recently constructed the national data base of farm animals (<http://www.tagem.gov.tr>)

In the analysis of global data bank for farm animal genetic resources breeds are classified into one of seven categories of extinct, critical maintained, endangered, endangered maintained not at risk, unknown.

Generally speaking terms of stands for a breed if it is no longer possible to recede the population if any breed has total number of breeding female is less than or equal to 100 and total number of breeding male is less than or equal to five is called critical breeds.

If a breed has total number of breeding females and males are greater than 1000 and 20 respectively is called not at risk. Endangered breeds has these figures as 100-1000 breeding females and 5-20 breeding males.

The summary of information recorded for mammalian species in the global databank for farm animal genetics resources are shown in below (Table.1.)

The other required information in order to identify are given in (EAAP) animal genetic data bank as prepared in the form of questionnaire of information on livestock production.

Structure of the global strategy for management of farm animal genetics resources were given as below.

It is also recommended all breeds regarding to be placed in database content should be referred as the main source of Mason's World Dictionary of Livestock Breeds (7-14).

In situ conservation of farm animal genetics diversity is the maintenance of live population of animals in their adaptive environment or as close to it as practically possible.

Table 1. Summary of Information Recorded for Mammalian Species in the Global Databank for Farm Animal Genetic Resources

General Information Species Breed name (most common name and other local names) Distribution Population Data Basic Population information: Year of data collection Total population size (range or exact figure) Reliability of population data Population trend (increasing, stable, decreasing). Population figures based on (census / survey at species / breed level or estimate) Advanced population information : Number of breeding female and males Percentage of females bred to males of the same breed and percentage of males used for breeding Number of females registered in herd book / register Artificial insemination usage and storage of semen and embryos Number of herd and average herd size Main Uses Listed in order of importance Origin and Development Current domestication status (domestic / wild / feral) Taxonomic Classification (Breed / Variety / Strain / Line) Origin (description and year) Import Year of herd book establishment Organization monitoring breed (address) Morphology Adult height and weight Number and shape / size of horns Colour Specific Visible traits Hair and / or wool type	Special Qualities Specific quality of products Specific health characteristics Adaptability to specific environment Special reproductive characteristics Other special qualities Management Conditions Management system Mobility Feeding of adults Housing period Specific management conditions In situ conservation Description of <i>in situ</i> conservation programmes Ex situ conservation Semen stored and number of sires represented Embryos stored and number of dams and sires represented in embryos Description of <i>ex situ</i> conservation programmes Performance Birth Weight Age at sexual maturity Average age of breeding males Age at first parturition and parturition interval Length of productive life Milk yield and lactation length (mammals) Milk fat Lean Meat Daily gain Carcass Weight Dressing percentage Management conditions under which performance was measured.
--	---

Resource: (1).

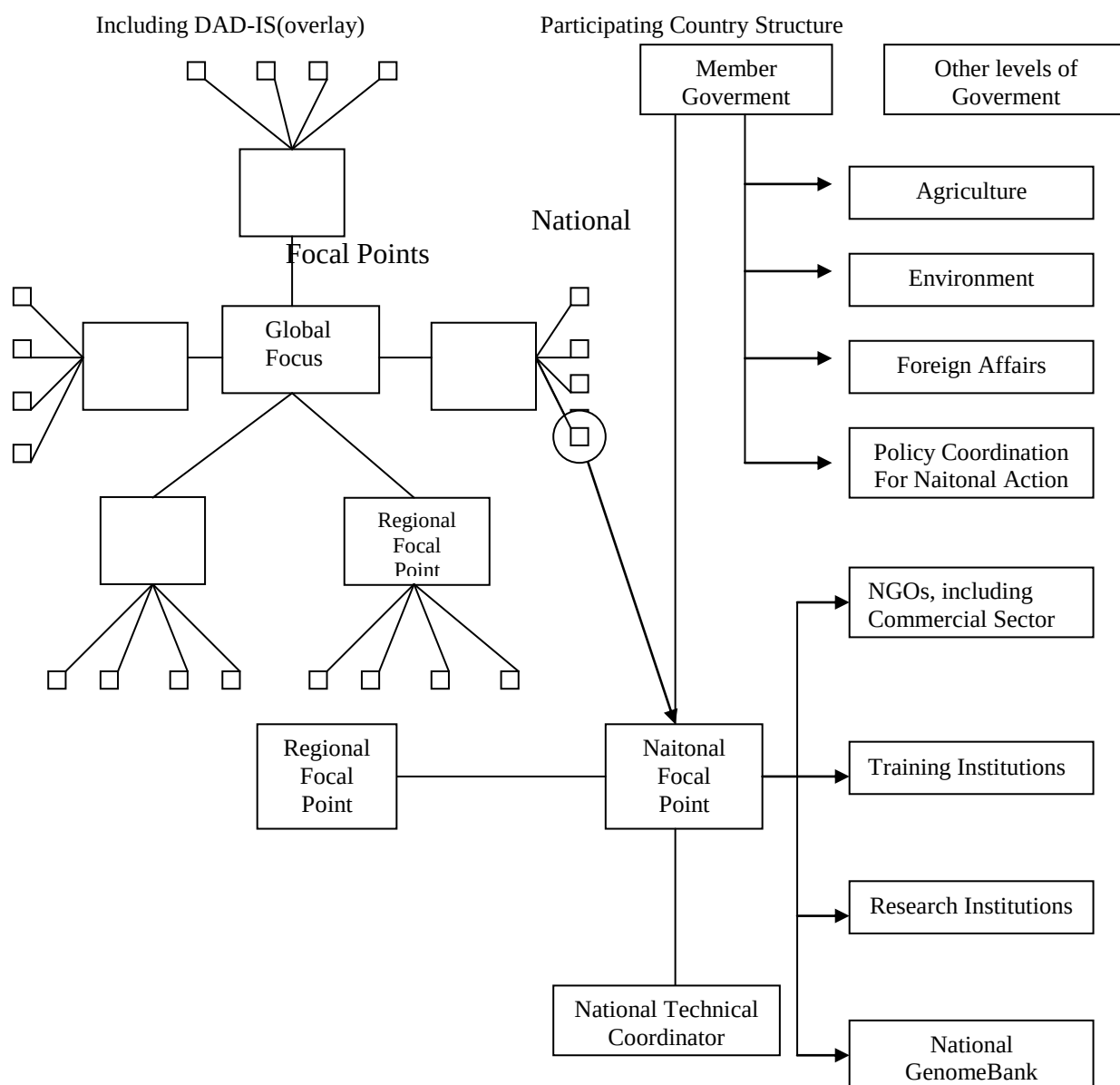


Figure 1. Structure of the Global Strategy for Management of Farm Animal Genetic Resources

Resource: (1).

Ex situ conservation covers the conservation of genetic material *invivo* but out of environment in which it developed and *invitro* including *inter alio*, cryo-conservation of semen, oocytes, embryos, cells or tissues. Briefly this term stands for long term storage of animal germplasm using cryoconservation.

United Nations Conference on Environment and development at Rio de Janeiro in June 1992 adopted a number of documents including "Agenda 21". A paragraph related with genetic diversity of Agenda 21 states under the title of promoting sustainable agriculture and rural development that animal genetic resources are under threat. It is recommended that local animal breeds with their specific adaptation and disease resistance

should be preserved. The agenda also includes the suggestion of 10 year programme of action is needed for the description of all breeds of livestock. It is stated in Agenda 21 that programmes should be established to preserve breeds at risk and to develop measures for the survival and development of native (Autochthonous) animal breeds.

Agenda 21 has led to establish, United Nations Commission on Sustainable Development. Every country's institution responsible for these conservation studies are free to pursue its recommendations or not.

European Union Commission on agriculture also tried to take measure in concerted level. The most important and significant event on this topic is to establish the software of

Hannover databas (<http://www.tiho-hannover.de/einriect/eaap/crosseur.htm>).

This web pages also known as the EAAP animals genetic data bank (EAAP= European Associations of Animal Production). This data base corresponds to some of objective established by Agenda 21 and has information about 46 member countries.

This database aimed to monitor information on cattle , sheep, goats , pigs and horses in the 15 member states and 18 other nonmember European countries as well.

The aim is to take care of development and risks and to encourage of use and conservation of genetic diversity of 877 breeds of farm animals in Europea . The member states are registred on the Hannover data base as holding 586 breeds of farm animals (172 cattle, 229 sheep, 52 goats, 68 pigs, 65 horse breeds).

The major features of Turkiye's farm animal genetic sources were given belows.

FAO has also same kind of data as Global Data Bank for Farm Animal Genetic resources so called Domestic Animal Diversity Information System (DAD-IS) for the Global Strategy for The Management of Farm Animal Genetic Resources (AnGR) (<http://www.fao.org/dad-is/indexhtm>)

Oklahoma University has also published web pages for farm animal genetics diversitua (<http://www.ansi.okstate.edu>).

The member states are divided subgroups so called Focal Point according to geographical placement. Every country has represented in (FAO) genetic diversity study programes by National Coordinatori) . Every counry supposed to prepare country report . FAO has proposed to combine them for preparing status of Genetic Diversity of Farm Animals of the Florida . The final aim to publish world watch list for domestic animal diversity (1).

FAO data base provides information by country by species grup by risk state and in alphabetical order by name. According to the FAO statistics Europea posses around 68, 50, 30 % of world animal genetics resources for poultry, cattle, goat respectively.

Table 2 show number of breed are believed critical endangered critical maintained, endargened maintained.

Formal international activities on the conservation of Animal Genetic are still very sparse compared with those of plant genetic sources.

This is not to neqlect the informal activities of scientist who have worked together across native boundreies for many

years. These contact have intensified recently with development for example of cooperative internetonal repositories for genetic information on farm animal genomes conservation .

Table. 2. Status of Farm Animal Breed of Europea As Numberof Breeds

	Critical	Endangered	Critical-Maintenance	Endangered-Maintenance
Cattle	13	15	23	21
Goat	7	11	0	6
Horse/Ass	13	23	6	10
Sheep	15	19	5	19
Pig	5	4	7	3
Poultry	47	57	0	0

Source: *Animal Genetics Databank* <http://www.tiho.hannover.de/einriect/eaap/crosseurohtm>

Generally the studies of FAO group or other institutions studying on genetic diversity are focused on four areas as international structures , monitoring animal genetic resourches , breed consevation prorammes , biotechnologie.

In any event as the work of FAO comission prorammes full community coordination will be needed including N.G.O's official represantatives of country (National coordinators and also of course universities . It was argued that European proramme commitee for genetic Resourches in agriculture should keep under rewiev the implementation of FAO global plan for plant genetic resourches . It also may be appropridte to keep under review the activities of FAO and other interrative bodies in the field of animal genetics resources.

Noticable event of preserving the animal genetics diversity are the publication of world Watch List for Domestic Animal Diversition published by support of UNEP by FAO . This study is mainly based on the study of world dictionary of livestock breeds, types and variation.

Which was originally in house document of the CAB= Commonwealth Agricultura Bureou (UK) and Data base of Honnever study founded by Deutche Farshungsgemeinschaft and organized by EAAP.

Table 3.Narive cattle breeds in Turkey.

	TURKISH GREY	EASTERN ANATOLIAN RED	NATIVE BLACK CATTLE	SOUTHERN YELLOW –RED
Name of Breed (in English)	Turkish Grey	Eastern Anatolian Red	Native Black Cattle	Southern Yellow –Red Native Cattle
Local Name of Breed	Boz step (Plevne)	Doğu Anadolu Kırmızısı	Yerli kara	Güney Doğu Anadolu Kırmızısı
Origin of Breed	Descended from Iskar (Bulgaria) about 100-150 years ago	Caucasian origin	Indigenous balac cattle of Turkey	Not known
Purpose of raising	1)work:draught power, 2)food:meat 3)food:milk	1)food: Milk 2)food:Meat	1)food: Milk 2)food:Meat	1)food: Milk 2)food:Meat
Main region or country	Especially in Trace and South Marmara, North-western Turkey	Eastern and North Eastern Anatolia.	Central Anatolia	South-eastern provinces of Turkey. Bordering Syria and the Mediterranean Sea.
Features	Native Turkish Breed	Narrow breast zone	Head is narrow and long	Tallest cattle Turkish breed, short body head narrow and long relatively small body size.
Color	Grey, light silver to dark ash black neck narrow breast growing slowly.	Basically red but varies from light yellow to dark brunette.	Black	Varies from light yellow to dark red
Polled or not	Female not horn, male has horn	Male and female have horn.	Male and female have horn.	Male and female have horn, short horns, sometimes rudimentary
Herd (%)	4.2 (%)	13.4 (%)	33.81(%)	4.3 (%)
Height (♀, ♂ cm)	120 cm (avg.)	118-125 cm	110-115 cm	125-135 cm
Body Weight (♀, ♂ kg)	300-387 kg	250-500 kg	200-300 kg	200-350 kg
Age at first parturition /egg (month)	56	---	56	---
Average daily gain for fattening (g)	700-800 g	800-900 g	600-700 kg	700-1000 g
Milk (kg)	1000-1500 kg	1000-1200 kg	500-750 kg	1500-3200 kg
Lactation Lenght	205 days	179-270 days	200 days	275 days
Fat (%)	4.1 (%)	4.4 (%)	4.0 (%)	---

Table 4. Native goat breeds in Turkey.

	Anatolian Black Goat	Kilis Goat	Angora Goat
Name of Breed (in English)	Anatolian Black Goat	Kilis Goat	Angora goat
Local Name of Breed	Kıl keçisi	Kilis keçisi	Ankara keçisi
Origin of Breed	Anatolia-	Composite of Damascus	Native to Turkey (2400 years BC)
Purpose of Raising	1)food:Meat 2)food:Milk 3)fibre:Wool	1) food: Milk	1) fibre:Wool 2) food:Meat
Main Region or country	All region in Turkey	South-Eastern of Turkey (Gaziantep, Kilis and Hatay provinces)	Central Turkey (Anatolia)
Features	Syrian type, large drooping ears, coarse flat long hair	Similar to Damascus, long hair.	Small sized, small head in proportion to the body.
Color	Black, grey, brown. Multicoloured sometimes pied.	Usually black but sometimes black, grey, brown	White
Polled or not	Usually male and female have strong horn	Male and female have horn, sometimes with out horn	Male and female have horn
Height (♀, ♂ cm)	♂=65 - 70 cm ♀= 65 – 73 cm	♂=65 - 75 cm ♀= 60 – 70 cm	♂=55 - 60 cm ♀= 50 – 55 cm
Body Weight (♀, ♂ kg)	♂=60 - 90 kg ♀= 45 – 65 kg	♂=50 - 60 kg ♀= 35 – 45 kg	♂=45 - 55 kg ♀= 30 – 40 kg
Lactation Length	180-235 days	210-260 days	----
Fleece Weight (kg / year)	1-2 kg	0.50-0.60 kg	1.53 – 6 kg
Birth weight (kg)	2.5 – 2.6 kg	---	2.30 – 2.6 kg
Milk (kg)	100-130 kg	200-300 kg	25 – 50 kg
Fat (%)	5 – 5.5 kg	4.7 (%)	---
Twinning Rate	1 (%)	15-20 (%)	5-15 % (Birth Rate:80-85 %)
Fibre Type	Mohair Angora	---	---
Lengthof wool fibre	23 mm	---	---

Table 5. Native sheep breeds in Turkey.

	White Karaman	Red Karaman	Awassi	Karayaka	Daglıc	Sakiz
Name of breed (in Eng.)	White Karaman	Red Karaman	Awassi	Karayaka	Daglic	Sakiz
Local Name of Breed	Akkaraman	Mor Karaman	İvesi	Karayaka	Dağlıç	Sakız
Origin of Breed	Indigenous breed in Turkey	Anatolia	In South West Asia	Indigenous breed in Turkey	Indigenous breed in Turkey	Originated from the Greek island of Chios around 1830
Purpose of Raising	Combined 1)food:meat 2)fibre:wool 3)food:milk	Combined 1) fibre:wool 2) food:meat 3)food:milk	Combined 1) food:milk 2) food:meat 3) fibre:wool	Combined 1)fibre:wool 2)food:meat 3)food:milk	Combined 1)fibre:wool 2)food:meat 3)food:milk	Combined 1)food:milk 2) fibre:wool 3)food: meat
Main Region or country	Central Anatolia	Eastern and north-eastern part of Turkey	South-eastern of Turkey	Northern Anatolia	Western Anatolia	İzmir province, Western Turkey
Features	Small head, long legs, fat tailed	Fat tailed. Tail with three lobe of shape	Near- east fat tail type, roman nose, long and dropping ears.	Long thin tailed . Small body size.	Short fat tailed	Long tail fat at base
Color	White with black nose and occasionally around eyes.	Red, Brown. From reddish brown to black	White with brown head and legs. Occasionally black or brown	Usually white with black eyes, head and legs.	White with black spots on head and legs.	White with black spots around mouth eyes, ears, legs.
Polled or not	Most of ram has horn, ewes without horn	Most of ram has horn, ewes usually without horn	Most of ram has spiral horn, ewes usually without horn	Most of ram has a thick, strong, spirally horn, ewes usually without horn	Most of ram has spiral horn, ewes usually without horn	Ewes usually without horn. Ram has a strong and spiral horn.
Herd (%)	46.8 (%)	19.6 (%)	1.6 (%)	3 (%)	15.5 (%)	0.02 (%)
Height (♀, ♂ cm)	♂=62 - 67 cm ♀= 63 – 66 cm	♂=65 - 71 cm ♀= 66 – 68 cm	♂=70 - 80 cm ♀= 60 – 70 cm	♂=60 - 64 cm ♀= 60 – 62 cm	♂=60 - 67 cm ♀= 58 – 62 cm	♂=76 - 81 cm ♀= 70 – 76 cm
Body Weight (♀, ♂ kg)	♂=50 - 60 kg ♀= 35 – 40 kg	♂=60 - 70 kg ♀= 45 – 50 kg	♂=60 - 90 kg ♀= 30 – 50 kg	♂=40 - 50 kg ♀= 35 – 40 kg	♂=50 - 60 kg ♀= 35 – 40 kg	♂=50 - 60 kg ♀= 35– 40 kg
Lactation Lenght	150 days	141-150 days	200 days	130 – 140 days	140 – 179 days	230 days
Birth Weight	4 kg	3-4 kg	4.3 – 4.5 kg	2.5 – 4.0 kg	3.4 – 3.5 kg	----
Fleece Weight	1.5 – 2.0 kg 32’S – 36’S	1.5 – 2.0 kg 28’S – 32’S	1.8 – 2.4 kg 36’S - 40’S	2 – 2.5 kg 28’S – 32’S	1.8 – 2.5 kg 36’S – 50’S	1.5 – 2.5 kg 50’S – 56’S
Twinning rate	4-5 %	4-8 %	6-10 %	4 – 8 %	1-2 %	Over of 70 %
Birth Rate	85-90 %	85-87 %	80-85 %	85 – 90 %	80 – 90 %	---
Milk (kg)	40 – 60 kg	50-65 kg	90-155 kg	40 – 45 kg	40 – 50 kg	200 – 230 kg
Tail (kg)	Fat tailed (5-6 kg)	Fat tailed	Fat tail type	Long thin tailed	Short fat tail	Long fat tailed
Other Remarks	This breed produces a good wool quality.	This breed are well adapted to herd climate	The breed is well adapted to hot climate	The breed is well adapted to wood and rainy climate	This breed are well adapted to step climate	The breed is well adapted to cool down climate

Table 5 (continue)

	Western Thrace	Çine Çapari	Gokceada	Hemşin	Herik	Tushin
Name of breed (in Eng.)	Western Thrace	Çine Çapari	Gokceada	Hemşin	Herik	Tıshin
Local Name of Breed	Kıvırcık	Çine Çapari	Gökçeada	Hemşin	Herik	Tuj
Origin of Breed	Indigenous breed in Turkey	---	Island Zackal type	----	Similar To Dağlıç	----
Purpose of Raising	Combined 1)food: Meat 2)fibre: wool 3)food: milk	Combined (milk, meat, wool)	Combined 1)food: milk 2)food: meat 3)fibre: wool	Combined 1)fibre: wool 2)food: meat 3)food: milk	Combined 1)fibre: wool 2)food: meat 3)food: milk	Combined Wool, milk, meat
Main Region or country	North-western of Turkey	Aydın province in Turkey	Gökçeada island and Çanakkale province	Artvin and Ardahan Province. North Eastern of Turkey	Amasya Province Northern Anatolia	Eastern of Anatolia (Kars, Ardahan and Iğdır provinces)
Features	Thin tail, short ears, middle weighed breed	White colour	One of the smallest breeds of Turkey, long thin tailed	Long tail fat at base	Short fat tail, small body	Short and fat tailed
Color	White, sometimes with spotted face also black on brown.	White colour and sometimes have light brown to dark black spots on the feed and stomach	White with black spots around eyes, nose, ears and legs	Black, brown, white	White with dark spots on head.	White
Polled or not	Ewes without horn, rams has a horn.	----	Most of ram has spiral horn, ewes usually without horn	Most of ram has horn, ewes usually without horn	Most of ram has horn, ewes usually without horn	----
Herd (%)	7.5 (%)	----	----	----	----	----
Height (♀, ♂ cm)	♂=67 - 71 cm ♀= 60 – 66 cm	----	♂=60 - 65 cm ♀= 60 – 62 cm	----	----	----
Body Weight (♀, ♂ kg)	♂=40 - 45 kg ♀= 30 – 40 kg	38 kg	♂=40 kg ♀= 38 kg (35 – 40 kg)	----	----	----
Lactation Lenght	120-180 days	----	157 – 200 days	----	----	----
Birth Weight	3.9 – 4.3 kg	----	3.7 – 4.0 kg	----	----	----
Fleece Weight	1.5 – 2.0 kg 44'S – 56'S	----	1.6 – 2.0 kg	----	1.5 – 2.0 kg	----
Twinning rate	10 – 20 %	----	15 – 20 %	----	----	----
Birth Rate	82-90 %	----	----	----	----	----
Milk (kg)	60 – 90 kg	----	70 – 100 kg	----	20-25 kg	----
Tail (kg)	Long thin tailed	----	Long thin tailed	----	Short fat tailed	----
Other Remarks	The breed is well adapted to cool down climate.	----	The breed is well adapted to cool climate	----	----	----

Member state of EU are now consulting FAO and EAAP databases over internet . Every country has own conservation systems for the breeds at risk such as *in situ*, *ex situ* conservation studies including cryoconservation studies . It would seem useful to encourage the person responsible for the maintainange of animal databases in the member frame work of system to meet together from time to time.

Member states should have their own data bank systems suit with global data base system. The content of data base system should provide the answer for the management enguiry of utilization pontential of breeds , risk of genetic erosion of breed, need for urgency of conserving breed, which conservation management should be performed..

There is another data base published by UK offers information on species British Ishles rare breeds.

The other relatives data bank store international livestock researches instituties (genetic and genomic Programes, Irish Molied cattle society,

Kelmscott Rare Breed foundation, League for pastoral peoples rare Breeds of Australian , rare breeds of canada, Rare Breed surviving trust and rare breed internationaly (RBI) . The last one is the only international NGO that aims to prevent the loss of diversty in global farm animal genetic sources (AnGR)through encouring and supporting relevant activities and research by NGO's and goverments.

Central documantation of Animal Genetic Resourches in Germany so called TGRDEU established for providing information for future measures and coordnates data from research institute breeds associations .

Society for conservation of old and endangered breed (GEH) and institute for animal science and animal husbandry of the federal agricultural research centra (FAL) are also engaged the umpresid organizations of TGRDEU . Another studies in germany national program animal genetics resourches by german association for animal production (DGFZ).

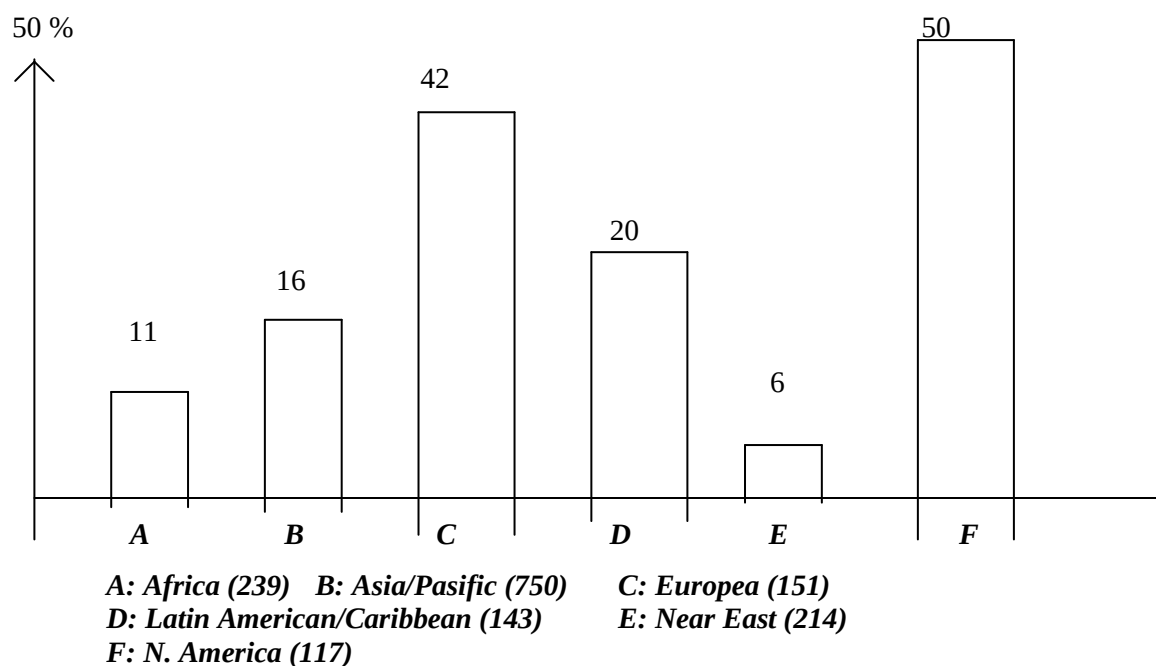


Figure 2. Percentage of remaining animal genetic resources at risk of lost.

Source: Global Strategy for the Management of Farm Animal Genetic Sources . Rome , 1999 .
FAO of U.N: Executive Vrief.

REFERENCES

1. FAO / UNEP (1995). World Watch List for Domestic Animals Diversity. Second Edi. Rome , Italy.
2. <http://www.tiho-hannover.de/einrict/eaap/crosseur.htm>).
3. <http://www.ansi.okstate.edu>
4. <http://www.tiho.hannover.de/einrict/eaap/crosseurohtm>.
5. FAO (1998). Domestic Animal Diversity Information System Stage 2.0 CD- Rom and <http://www.fao.org/dad-is>rome,FAO>.
6. Hammond , K. and Leitch H.W. (1996). The FAO Global Program for Management of Farm Animal Genetic Sources . In R.H. Miller, V. G. Pursel and H.D. Norma eds. Biotechnology is Role in the Genetic Improvement of Farm Animals . Beltswillk Symposium in Agricultura Research XX . Sany . Illinois. American Society of Animal Science.
7. IUCN/YNEP/WWF/FAO/UNESCO (1980).World Conservation Strategy . Living Resources Conservation for Sustainable Development Switzerland . I.U.C.N.
8. Frank Wigh- Larsen (2000). Danish Institute of Agric. Sci. Dept. of Animal Breeding and Genetic , an Animal Genetics Resources Programs for Cent. and Eastern Europa.
9. Dominique, Planchenault (2000). Everything You've Always Wanted to Know About RFP-Europes, Bureau des Resources Genetiques.
10. Anonymus (1999). Report on the 5th Workshop for The European National Coordinaters for the Management of Farm Animal Genetic Resources . European Association for Animal Production. Foof and Agricultura Organization of the Unidet Nation.
11. F. W-Larsen (2000). An Animal Genetic Resources Management Project for Central and Eastern . Europea (An GRMPCEE) . Danish Inst. of Agric. Sci. Dept. of Anim.Breed and Genetic ; And Arunds suitojus, Lithuania.
12. Schmitt, F. (1999). Co-operation on Animal Genetic Resources Management in the Countries of South Eastern Europea. Proceeding of the Int. workshop on the Dev. of Programs. Food and Agric org . The Greek Foral Point for Animal Genetic Resources and The Direction of Inputs to Animal Production Min. of Agric.
13. Soysal, M.İ., 1995. Native Sheep Breeds in Türkiye, Trakya University. Agric.Faculty, Department of Animal Sciences, Livestock-newsletter Volume-6.2(11 LN 6.2-13 LN 6.2).
14. Soysal, M.İ., 1996. Native Cattle Breeds of Turkey, Trakya .University. Faculty of Agriculture., Department of Animal Sciences, Livestock-newsletter Volume-7.1(22 LN 7.1-25 LN 7.1)