



MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT



ANGOLA COUNTRY REPORT ON ANIMAL GENETIC RESOURCES FOR FOOD AND AGRICULTURE

2004



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EXECUTIVE SUMMARY

The elaboration of this document aims at describing the current state of the AnGR for food and agriculture in Angola, including their development perspectives, a survey and description of a list of barriers that hinder the development, opportunities, capacities and perspectives, in view of the identification of strategies and priority actions for the sector participation in the sustainable use and conservation of the natural resources, its participation in the reduction of the hunger and of the poverty alleviation as well as in socio-economic development programmes of the Country. Moreover, it is meant to respond to the international appeal, issued by the United Nations for the conservation, use and development of the domestic animals as a guarantee of continuity of the Animal Production for the future generations and stopping the disappearance of several animal species, complying the Government's obligations to the Biodiversity Convention which includes the conservation of the Biodiversity for food and agriculture.

This document portrays the present situation of the resources. It was prepared when were programmed great transformations for a better contribution of the livestock sector in the economic balance and its major insertion in the country development.

The six following chapters compose it:

The First chapter presents information about the Country, its surface, population, climatic and agricultural and ecological areas. It briefly describes the situation of agriculture, domestic animal species with their most used products and their state of use and conservation. It deals with the different animal production systems and mentions the types of pasture and the animal production traditional areas.

The second chapter presents an analysis of the demand on animal products and its relationship with the policies, strategies and programmes for the AnGR for food and agriculture.

In the third chapter there is an identification of the existing national capacities for the development and conservation issues related to the animals being raised.

The fourth chapter identifies the priorities for the resources conservation and concisely presents the conservation priority actions.

The fifth chapter focuses on the identification of actions that the Country should take in order to request international aid for those actions in which country lacks capacities and possibilities to undertake on its own, and therefore, directs them to interventions in the scope of the International Cooperation.

The sixth Chapter sums up the work and presents the enclosed.

INTRODUCTION

In March 2001 the United Nation Organization for Food and Agriculture (FAO) requested the contribution of the Angolan Government to the State of World on Animal Genetic Resources for food and Agriculture reporting process (SoW-process), with the preparation of a strategic national report on the AnGR;

In June 2001, the Minister of Agriculture and Rural Development, on behalf of the Government of the Republic of Angola, responded positively to the request; thus, initializing the integration of the country into the process.

The present National Report was devised in line with the FAO's guidelines, related to data and information collection for the world process and it is a starting point for the implementation of policies, strategies and programmes for the conservation and sustainable use of resources, as well as the setting up of a Database that should be used for the Global Action Plan and as a strategic document for the Country.

ACRONYMS AND ABBREVIATIONS

ADRA – Action for Rural Development and Environment	-----Angola
AIEA –International Agency of Nuclear Power	----- Austria
AnGR – Animal Genetic Resources	
ASF - African swine fever	
CIRAD – IMVT: – International cooperation centre on Agricultural Recherche for Development – Veterinary tropical medicine Institute	----- France
CDDT–Centre of Documentation and Technical diffusion	-----Angola
CDI – Documentation and Information Centre	-----Angola
CCN – National Consultative Committee	-----Angola
DNCB – Lumpy Skin Disease	
FAO – United Nation Organization for Food and Agriculture	
FAnGR - Farm Animal Genetic Resources	
FCA - Faculty of Agrarian Sciences	-----Angola
GSA - Cabinet of food Security	----- Angola
IIV - Veterinary Research Institute	----- Angola
IIA - Agronomic Research Institute	----- Angola
ILRI - International Livestock Research Institute	-----Kenya
IMT L – Institut de Médecine Tropicale Léopold	----- Belgium
INE - National Institute of Statistics	-----Angola
LNIV - National Laboratory of Veterinary Research	-----Portugal
MIA - Mission of Inquiries of Angola	-----Angola
MINADER - Ministry of Agriculture and Rural Development	-----Angola
NGO - Non-Government Organization	
NR - National Report	
RAF-97/032 - Regional Project Reference for Farm Animal Genetic Resources Management	
SADC - Southern Africa Development Community	
SACCAR - Southern African Centre for Cooperation in Agricultural Research	-----
	-----Botswana
SV - Veterinary Services	-----Angola
UN - United Nations Organization	
UNDP - United Nations Development Programme	
UAN - Agostinho Neto University	-----Angola

CHAPTER 1

1.1 - ANGOLA AND ITS AGRICULTURAL SECTOR

Angola is the second largest country in sub-Saharan Africa. It covers an area of 1.246.700 Km² between 4°20' and 18° South latitudes, and between 11°4' and 24°5' East longitudes. It shares the borders with the Republic of Congo (Brazzaville) and Democratic Republic of Congo in the North, the Republic of Zambia in the East and the Republic of Namibia in the South. In the West, it has a 1.400 km long coast on the Atlantic Ocean.

1.1.1 - POPULATION

The population of Angola is estimated at 14.7 million inhabitants. The global population density is 8 inhabitants per km², with a rate of annual growth of 2.8%.

In 1990 UN's data showed that the average population age was 15 and that a third of the population was under 10.

Data collected in 1991 (INE) shows that about 80% of the population lives in 8 provinces, which covers 34% of the Country area: Luanda (15.4%); Huambo (14.8%); Bié (10.9%); Malange (8.7%); Huila (8.6%); Uíge (8.1%); Kwanza-Sul (6.4%); and Benguela (6.3%), as mainly a result of immigration from rural to the urban areas. The urban population growth is 7.58% whilst in the rural areas the rate of population growth is 0.6%. This trend has been remarkable mainly in the last 10 years. Due to the war, (more than 3 million) people have fled to safer urban areas. Estimates show that about 35% of the whole population lives in Luanda and its surroundings.

In 1991 the provinces of Kuando-Kubango, Bié, Kunene, Kwanza Sul, Kwanza-norte, Bengo, Lunda-norte and Moxico had 80% of their population classified as rural.

1.1.2 - AGRICULTURE

Agriculture is one of the main economic activities in Angola. Considering the variety of physical and climatic areas, with the wide courses of water available in a vast part of the country, Angola is one of the biggest agricultural potentials in Sub-Saharan Africa (World Bank, 1991).

In the colonial period, there was a double structure of agriculture, a commercial sector that occupied about 800.000 hectares, administered mainly by the Portuguese using an intensive system and modern agricultural techniques, and a traditional sector, mainly of small agriculture of farmers' subsistence covering about 3.4 million hectares.

Until the date of its independence (1975) Angola was self-sufficient in terms of maize, sorghum, massango (millet), bean, cassava, coffee, potato, banana; it was also a significant exporter of coffee (4th in the world), tobacco, sisal, palm oil, banana, rice and maize (World Bank, 1991) and also had a considerable production of meat, milk and their by-products. The great majority of the Portuguese who held commercial farms abandoned the country and consequently the rural commercial chain started to disappear. To bridge the gap created by these farmers and merchants, the government nationalized some of the abandoned properties and set up state owned enterprises for their exploration.

Some years after the independence, the country passed a hard political instability expressed by a warfare which lasted over twenty years and resulted in a gradual destruction and degradation of the major economic structures such as farms, milk-food industries, industrial abattoirs and products processing industries.

Rural areas were the most affected and, consequently the livestock sector with population and animals moving in search of more stable places. The owners abandoned the physical structures and animals; there was a series of animal diseases transmission and incapacity to control the livestock effective and diseases.

On the other hand, in the surroundings and urban areas the structures of the animal industry were destroyed, abandoned, some of them under used, leading to decline and degradation.

The insecurity in the rural areas and particularly the presence of land mines led to the decline of the agricultural sector and a production drop of over 80%, which implied a dramatic increase in the consumption of imported food.

Nowadays, agriculture in Angola is essentially of subsistence, with an average cultivation area of about 2 hectares per family. Most of the small and medium farmers still carry out an inconstant agriculture with problems to obtain fertilizers, pesticides etc. In 1991 there was a small increase in the number of commercial producers (mainly as regards horticultural products) all around the main urban areas, which is still below 5% of the global agricultural activity.

Taking account of the significant historical past of the Angolan agriculture and the vast potential of the sector, The agriculture will be able to enter into an accelerated growth cycle of 10% a year (FAO 1995) if at once the deserved priority for the improvement of the economy is given.

1.1.3 - ANIMAL PRODUCTION

Animal production plays an important roll in the country socio-economic activities, not just because of the percentage people who develop this activity but, mainly because of the resources it owns.

The animal production sector in Angola, in accordance with the level of inputs, is constituted by two sectors: the traditional and the commercial.

In line with the Angolan Mission of Agricultural Inquiries, the Country has been divided into 36 agricultural and livestock areas (annex 1.1), which can be grouped in 6 great areas (annex 1.2), each one typified by the existence of a dominant characteristic:

Coffee-growing regions - the cultivation of the Robusta coffee plant outstands from the agrarian economy;

The northern and eastern regions - of little quantitative significance in the agriculture and livestock domain;

Cotton regions: - where cotton is broadly presented. In some areas livestock exploration had already acquired a certain importance;

Transition regions towards the Central Plateau – composed of areas where the bovine farming is integrated in other basic activities, operating in terms of capitalization of profits derived from those activities, and yet, taking part in the population's consumption. The culture of maize is the common denominator.

Central Plateau Region - the cattle raised locally or essentially transferred from the pastoral areas to south, are fundamentally used as labour animals. Pig farming is expressive. Maize is the dominant culture. It presents a dense agricultural occupation, which is both a strong link between the rural population and the land and a commercially featured extensive agriculture.

Region of the milk Compound or the milking Compound - cattle satisfy the demand for the consumption of milk, which is a traditional food supplement. As a grouping of several agricultural areas, especially to south of the 14° parallel, it is characterized by the prevalence of a shepherd-oriented population, practising a fairly accentuated transhumance.

The feature that most characterizes the traditional system of cattle raising in the sixth area is, basically, the use of milk and dairy products in the population's diet, which requires a type of relatively dispersed or semi-dispersed settlement or a complex socio-economic relationship between owners and stockholder, which assures a fair and equal distribution of animal products (Cruz de Carvalho, 1974).

For a better characterization, this area was subdivided into the following areas: (1) pastoral; (2) agricultural and pastoral; (3) southern transition; (4) Quilengues; (5) western transition.

Commercial sector - it comprises both non-registered and registered explorations, which have essentially been dedicated to both extensive and semi intensive cattle raising, and intensive pig and chicken raising. These are spread throughout the

whole Country with a greater intensity in the suburbs of the largest urban centres, almost, in an integrated agricultural and livestock production system.

In general, the indicators related to the livestock sector have not been updated. The most important animal products are: beef, goat, pork, poultry and mutton. The other most popular species is rabbit. In some rural areas there is a frequent demand for porcupines (*Cavia porcellus*).

Eggs, as well as cow milk, are an important element in the population's diet, mainly in the traditional areas of animal raising. The consumption of goat milk is rare.

The most important by-products are skins and leather.

Owing mainly to the climatic conditions, which implies changes in the pastures, and the need to respond to the changes in the diet habits of the actually growing more urbanized and demanding population, there is a tendency for the intensification of the production using mainly the semi - intensive and intensive systems with incentives (which at the moment are scarce) such as credit policies for the commercial sector.

Angola has a territorial extension and a privileged climate by the growth of herbaceous plants, whose conditions are excellent for a good livestock development.

Thus, the formation of good pastures is really important and, of course, the best option for feeding the local livestock.

However, some studies with essentially phyto-geographical and flora targeted objectives were carried out on the pastures before the independence and few of them were animal technically directed.

The characteristic of Angolan pastures help in dividing the territory in the three groupings of the South African generic classification:

- Sour pastures
- Mixed pastures
- Sweet pastures

The sour pastures zone is found in altitudes higher than 1000 meters where rainfall varies between 650 e1500mm. The grass layer is usually dense and economically favourable to the production of forage and cultivated pastures. In the areas of mixed pastures found in altitudes up to 1000 meters where rainfall varies between 400 and 800 mm, the pasture is denser and the capacity of animal load per hectare is higher than in the sweet pastures. There is, in the sweet pastures found in hot and low altitude areas with rainfall lower than 750 mm, a scarce grass layer of the type steppe with a low capacity of animal load per hectare.

It is necessary to increase the production and productivity of the natural pastures as well as to promote and implement areas for improved pastures.

CATTLE

Found almost throughout the Country, it is in the centre and south where great concentrations of this animal species are found. In Angola this specie has larger economic value and this has been broadly described above.

Nearly 90-95% of the cattle are concentrated in the south of the 14th parallel, more precisely in the provinces of Kunene, Namibe and Huíla and in smaller scale in Benguela, Kuanza Sul and Kuando Kubango.

These areas are composed of a vegetable layer denominated sweet pastures, which is highly palatable for the animals.

However, the volume of forage is not directly proportional to the number of animals. This phenomenon causes an ecosystem imbalance of the area, leading to the aridity of these areas making them little productive and also making the drought seasons more and more severe.

In the traditional system they explore local breeds of the group Sanga such as: Mucubal, Damara, Humbe, Barotse, Kwaniama, Kombe, Cateta, Daomé, Muanda Muhanda Muíla, Ngombe, Mumuíla, Pitangueira, Nhaneca, Mocho de Quilengues (Tshilengue) and Mocho de Malange. However, since the colonial period many crossbreed have been done and some of them still exist, mainly in the case of the Zebu, Africander and Santa Gertrudes.

Due to the geographical localization and the trypanosomiasis, small nuclei of the trypanosomiasis-tolerant cattle such as Ndama and Daomé are raised In the Northern provinces.

Besides the local breeds, the commercial sector maintains, in a semi intensive regime exotic, breeds such as: Holstein Frisian, Brahman, Jersey (milk production); Zebu, Africânder, (meat production); Charolais and Brown Swiss (mixed)

Recently, the Bonsmara, Nguni and Simbra breeds have been introduced, and the Brown Swiss, Holstein Frisian and Brahman breeds have been continually imported.

GOATS

Spread throughout the country, it is on the coastal region where they are in greater number. Semi- intensive farming nuclei of exotic animals have been reported. They are a considerable potential and supply a great deal of meat consumed in Angola, although they are not well registered.

The most explored goat breeds are the autochthonous such as: Gentia, Cateta and Muhanda, which, despite not being classified, are adapted to the climates and raising conditions. The adapted exotic breeds are the Boer Goat and the Algerian. Boer Goats have been continually imported.

SHEEP

Sheep farming had its particular prominence in the 60's and 70's when Angola used to export Karacul wool and skins. Mutton is not so popular as other kinds of meat; however, it plays a certain role in the population diet. They exist in a more

reduced number than goats but they practically live in the same environment. Their presence is more noticeable on the Coast and inland. In specific microclimates one can find autochthonous breeds with unclassified specific particularities (without wool). There are records of local breeds such as: Zunu, Mondombes, Angola Maned, Angola Long Legged. The Karacul, Merino and Persian and the recently introduced Dorper are the most explored exotic breeds.

PIGS

Their outstanding presence is noticeable all over the Country, in the rural areas and in the peri-urban area. They are another highly consumed and bred species in the rural areas. Despite the African swine fever, which is one of the major barriers to their development, this specie has registered considerable production in intensive and semi intensive system in the green belts of the main cities where there one can still find installed capacity for production, although most of the infra - structures have degraded. The largest nuclei were in Ganda (Benguela), Huambo, Huíla and Luanda. Besides the meat, pigs supply raw material for the sausage industry.

The autochthonous breeds such as the *Jambona*, *Munhanda*, the *Porco do Bengo* and the *Porco do Kunene* raised in the rural and suburban areas are characterized by their capacity to eat scraps in the outskirts and litter dumps and some supplements mostly constituted by bran, remains of crop, etc.

The exotic breeds introduced and farmed in intensive regime, and in an adapted way are: The Large White, Landrace, Duroc, which have continually been imported in the last years.

The biotypes Ganda I, II and III are still very frequent and widespread throughout the whole territory with larger incidence in the South in a presumable state of consanguinity.

POULTRY

Poultry is the most disseminated animal. Its presence is remarkable in all rural homes and in almost all peri-urban homes. Nuclei constituted by chickens, pigeons, ducks, turkeys and others have been developed into industrial production in intensive breeding systems in the suburbs of the main cities where there is still a considerable installed capacity in spite of a lot of degradation. The largest nuclei are in Luanda, Benguela, Lubango, Cabinda and Malange.

There is a big variety of the continually imported poultry. Chickens are the most consumed variety. Products such as meat and eggs are the most popular. In the rural areas chickens are usually known as *Cabire*, *Cauaua*, *Cavava* or *de Kimbundo* even with the outstanding differences between breeds. For many years, synthetic lines have been introduced into the commercial sector.

OTHER SPECIES

As for other species, there is not much to be said. Although they offer one of the best meats in a nutritional point of view, rabbits are not yet a part the common population's diet. Those who are devoted to the rabbit raising, report that sometimes they have been successful, however nothing officially has been recorded.

Guinea Pigs are highly appreciated in the rural areas either for consumption of their meat or blood, which is used for treatment of anaemia.

Horses and donkeys are used in the agricultural and livestock activities either as a means of transport of agricultural products to the rural markets and in the cattle pasturing. Horses are also used by the police, and for horsemanship. However, they continue not to be fully used.

It is important the participation of feral species in the population diet in the rural areas. The *Rato do mato* (*Hystrix australis*), the *Javali* (*Potamochoerus porcus*; *Phacochoerus aethiopicus*), the *Coelho* (*Poelagus marjorita*, *Lepus crawshayi*), the *Lebre* (*Pedetes capensis angolensis*) the *Macaco* (*Cercopithecus* sp.), the *Gato bravo* (*Felis* sp.), the *Pacaça* (*Syncerus nanus*, *Syncerus caffer*), the *Veado* (*Tragelaphus scriptus*) the *Gunga* (*Taurotragus orus*), *Olongo* or *Kudu* (*Tragelaphus strepsiceros*), *Cabra do mato* (*Cephalopuhus dorsalis*; *Sylvicapra grimmia*), *Cabra de Leque* (*Antidorcas marsupialis*), the *Paca* (*Thryonomus swinderianus*), the *Capota* or *Galinha de Angola* (*Númida meleagris*), the *Perdiz* (*Francolinus* sp.), the *Codorniz* (*Coturnix coturnix*), the *Pato do mato* (*Netta erythrophalma*), etc.

Among these wild animals the, closest to domestication are *Capotas* (*Númida meleagris*) and *Gungas* (*Taurotragus orus*).

The fact that some animals are not fully utilised in one region does not apply in other regions. A point in case is Horses and donkeys, which are more and more used for goods and people's transportation.

In general the animal population, for different species even after the warfare, is growing in several ways; either through the animals import or the reproduction of the existing ones. However, it is difficult to define the size of the animal population per breeds, due to the lack of statistical data and resources for a survey. The last livestock census took place in 1970.

The genetic erosion is a pertinent issue to be carefully addressed in the present conditions, because of the lack of means for its determination. No any programs of genetic characterization were implemented; there have been few inquiries on the breeds. The last one took place in a situation of great difficulties in 2001. Since independence and mainly after the destruction of the central infrastructures of the Veterinary Research Institute, there hasn't been any research carried out or data collection on the performance. It is, thus, difficult to talk about economic valuation of any breeds or species. The war limited the production and the effective livestock control is showing in the livestock statistics table for 1998, 2000 and 2002 (annex 2).

1.2 - ORGANIZATIONS INVOLVED IN AnGR MANAGEMENT

MINADER, the rolling body of the agricultural and livestock activities actively runs support programmes for the implementation of strategies and policies that aim at the contribution of the livestock sector in the Country's economic activity.

FAO, the UN Organization for Food and agriculture, has been a great stimulator for orientated programmes for AnGR as a guarantee of the species conservation for future generations. This Organization has been contributing in the sensitization of the society on the importance of AnGR.

SADC, a regional Organization, has engaged all its members countries in the scope of a regional development specific programme.

Specifically for the area of FAGR, our country doesn't have any education institution. The basic education on the subject is the one that occurs in the extent of the staff training in the branch of agriculture and livestock in general. As for research, the IIV has some research projects in the areas of the characterization of breeds and genetic improvement.

There are some organized associations of stockholder but with few actions related to FAnGR, since they are essentially devoted to the increase of the production, and to the defence of their rights.

The local communities' expression has not strongly been noticed due to lack of diffusion and knowledge of FAnGR, in this walk of the society. In compensation, in the indigenous communities, even without perception of the subject, the tendency is to preserve the existing breeds they raise and maintain.

The private sector, which is critical in the agriculture and livestock activity, has already started to present some concerns in relation to the preservation and improvement of the economic trends of each used species, although a quite significant number of private agents pays larger attention the area of animal and public health care, sometimes, ignoring technical parameters of raising.

Several NGOs have been working in the agriculture and livestock sector as a whole. In the livestock sector as such, there is a particular interest of ADRA - a national NGO tending somehow to the preservation of the local breeds, although their actions are felt in the veterinary domain.

The SNV - a Hollandish Organization for the Development, with actions in the domain of the basic technicians' training;

The ALISEI - an Italian organization, with actions in the domain of the basic technicians' training and rehabilitation of infrastructures and supply of medicines for veterinary.

The ZOA, Caritas and World Vision - with actions also directed to the basic technicians' training, livestock vulgarization and veterinary assistance.

The great barrier is the lack of knowledge, information, weak diffusion about the potential and the importance of FAnGR. The potential sources of information on this issue (Veterinary Research Institute, Faculty of Agrarian Sciences, stockholders and animal owners) have serious institutional, structural and functional problems (destroyed libraries, lack of basic technical information, quite old and few published manuals).

The legislation, regulations and technical manuals have not been updated. There are not any programmes in the media, edition of practical manuals, or illustrated material in national languages.

1.3 CONSERVATION PROGRAMMES AND STRATEGIES

The long-term war prevented countless development tasks from being accomplished, including the conservation of AnGR. The loss of a great number of structures and personal staff strongly hindered every technical and scientific process in Angola.

On account of these reasons there have not yet been any strategies or programmes for the conservation.

With the end of the war, new challenges appear for the development of this area, which is extreme important to local animal production and insure the improvement of the population's diet as regards the animal protein supply. However, there are barriers that hinder the implementation of those challenges, such as:

- Lack of conservation policies
- Lack of sensitization on of the importance of the conservation of AnGR
- Low priority
- Lack of information
- Lack of financial resources
- Lack of technical and technological capacity
- Human resources Inadequacy

1.3.1 – "IN SITU " CONSERVATION

There are not any Programmes and Strategies for the conservation of AnGR. Meanwhile, there are in several places some species and autochthonous (indigenous) breeds and some exotic ones (annex 2) that have been preserved with many difficulties as for instance:

Cattle – the Africander, found in public (Cacanda Zootechnical Station) and private institutions in several areas of the Country, the Holstein Frisian, breed found at the Humpata Zootechnical Station of the Veterinary Recherche Institute, the Mucubal breed in the Namibe province, the Kwaniama, Muíla, Nhaneca breeds in the Kunene province, the Humbe breed in the Huíla and Kunene provinces, which are in the nuclei of household livestock.

Sheep – Karacul breed, Persian and Merino, are found at the Karacul Zootechnical Station in Namibe province and at the Humpata Zootechnical Station in Huíla province, under the Institute of Veterinary Investigation.

Pigs - Some local denomination of breeds: *Porco do Kunene* in the Kunene Province, *Porco do Bengo/Luanda* in the Luanda and Bengo provinces, *Porco do Huambo* and *Porco da Huíla*, which belong to the household animal raising nuclei. The biotypes Ganda I, II and III found at the Humpata Zootechnical Station, under the Veterinary Research Institute.

Goats - Algerian Breed in the provinces of Kunene, Huíla, Namibe, Ovine, Mondombes breed in the Luanda, Bengo and Namibe provinces, Maned breed of Angola in the Bengo, Huambo and Kwanza Norte provinces.

It is presumed that a lot of farm animals were lost during the war period. However, in the present conditions, it is still impossible to calculate the exact number of those losses.

There are some breeds in vulnerable conditions namely cattle, Mocho de Malanje in the Malanje province, and Mocho de Quilengues (Tshilengue) in the Huíla province and the pig breeds of Ganda I, II and III.

1.3.2 - "EX SITU" CONSERVATION

Unfortunately, because of the abovementioned reasons Angola doesn't have neither programmes, strategies, nor *ex situ* conservation.

The Animal Genetic Resources are used in Angola as a source of food and income, reserves of capital, animal drought power, means of transport, and for cultural and ritual actions.

1.4 STATUS OF USE BY SPECIES

Improving the use of the AnGR is an important element for the Country's strategy to increase the production and productivity in the food, agricultural and livestock sectors.

The country has no record of exported animal products.

In general, the animals are used as food, capital saving, rites and traditional customs. Apart from being an economic reserve, possessing cattle brings socio-cultural prestige. The local breeds are the main source of food and animal services. The recently and continuously introduced breeds are the exotic ones, which supply the commercial sector mainly with meat, milk and eggs.

Crossbreeding has been made in an isolated way, sometimes with unconventional records with the purpose of improving the performance of herds. There is a growing trend for milk cattle exploration and improved meat cattle from exotic species. In fact, very little biotechnology is applied.

CATTLE - They are raised throughout the country with greater prevalence in the centre and south where the natural conditions are more favourable. The household sector owns the largest amount where the local breeds prevail classified as autochthonous, in its majority with a stable population trend, except for Damara, Mocho de Malange and Mocho de Quilengues breeds. The most used breeds are Kwanhama, Humbe, Mucubal and Mumuila. All of the autochthonous breeds are classified as pure from origin. Their importance is social, cultural and economic. They are used for family consumption and industry purposes. The breeds are raised in an extensive system, without breeder's associations for specific breeds. There are not any characterization, improvement or conservation programmes. The exotic animals mostly have a stable population trend, except for the Charolais, Simmentaler, Sta. Gertrudes and Jersey breeds, whose number has been decreasing. The intensity of usage ranges from little to moderate. These breeds are in general pure from their origin; they are of economic importance and their products are used for industry purposes. They are raised in semi - intensive systems. Their improvement programmes are private. They are classified by the phenotype. Their copulation is mainly natural, with records of some artificial insemination. Likewise, conservation programmes have not been accomplished. (Tables 1 and 2)

SMALL RUMINANTS – They are raised all over the Country. There are several breeds, highlighting the Zunu (ovine), which might be at risk. Some industrial explorations have been established with the import of some exotic animals such as Persian, Karacul, Merino(sheep), Boer Goat and the Sanei goat. In general, the autochthonous and exotic breeds behave like the cattle. Detailed information is in tables 3 and 4.

PIGS - They are raised all over the Country. They have the remains of crop as the main source of food; pigs are a critical source of meat and income in rural areas. Native pigs represent most of the herds, little productive, but relatively resistant to the African swine fever, which is also one of the barriers to the production of pigs. Several breeds were introduced for industrial production. Some cross- breeding was done to obtain biotypes as Gandas I, II and III, adapted to the local conditions. However, because of war, these works were suspended and the obtained biotypes are now at risk of genetic erosion. Regarding the explored breeds, there is more detailed information in table 5.

POULTRY – Almost present in every rural and suburban home, they are the main source of animal protein (meat and eggs) and they also represent a good source of income for the rural population. Improved breeds have been imported and, in the main population centres, they contribute to the development of the industrial activity. In the rural areas they help to restore the household nuclei.

In this species we can highlight chickens, ducks, turkeys, pigeons and recently the partridge and the ostrich. However for poultry, local breeds are not characterized.

With regard to health, Newcastle Disease is the main barrier to the expansion of poultry.

EQUINE AND ASININE - These animals are used for hauling things, transport, recreation and sports.

The following tables summarize the status of use of the types of breeds raised in Angola.

TABLE 1. INFORMATION ABOUT BEEF CATTLE BREEDS RAISED IN ANGOLA													
RAÇA	A	TP	IU	GPR	I	DP	SP	AC	PM	C	R	Cn	PROV.
Kwanhama	Au	E	M	PO	S/C	I/F	E	I	I	N	CN		Kn/KK
Humbe	Au	E	P	PO	C	F	E	I	I	N	CN		Hla/Kn
Mucubal	Au	E	Mo	PO	E,S,C	F	E	I	I	N	CN		Nam
Mumuila	Au	E	Mo	PO	E,S,C	I/F	E	I	I	N	CN		Hla
Damara	Au		P	PO	C	F	E	I	I	N	CN		Hla/Kn
Barotse	Au		P	PO	C	F	E	I	I	N	CN		Hla/Kn
Cateta	Au	E	P	PC	E/S	F/I	E	I	I	N	CN		Nam
Daomé	Au	C	P	PO	S	F	E	I	I	N	CN		Cab
Mocho de Quilengues	Au	D	P	PO	E/S	F	E	I	I	N	CN		Hla
Mocho de Malange	Au	D	P	PO	E/S	F	E	I	I	N	CN		Mal
Ndama	Au	C	P	PO	S	F	E	I	I	N	CN		Cab
Brahman (Zebu)	E	E	Mo	C	E	I	SI	I	I	F	CN		Hla/
Nelore (Zebu)	E	E	Mo	C	E	I	SI	I	I	F	CN/IA		Nam/Lda /Hla
Africânder	E	E	Mo	C	E	I	SI	I	I	F	CN		Hla/Nam/ Kn
Charolais	E	D	Mo	C	E	I	SI	I	I	F	CN		Hla
Simmentaller	E	D	Mo	C	E	I	SI	I	I	F	CN		Hla/Kn
Simbra (Zebú)	IR	C	Mo	PO	E	I	SI	I	I	F	CN/IA		Lda/KS/Kn
Bonsmara	IR	C	Mo	PO	E	I	SI	I	I	F	CN/IA		Kn/Hla
Nguni	IR	C	Mo	PO	E	I	SI	I	Pr	F	CN		Kn/Hla/Nam
Sta Gertrudes	LA	D	P	PC	E	F	SI	I	I	F	CN		Hla

TABLE 2. INFORMATION ABOUT MILK CATTLE BREEDS RAISED IN ANGOLA													
RAÇA	A	TP	IU	GPR	I	DP	SP	AC	PM	C	R	Cn	PROV.
Holstein Frisian	IC	C	Mo	PO/PC	E	I	SI /B	I	Pr	F	CN/IA		Hla/LS /Lda/Nam/KS
Brahman	IR	C	Mo	PO	E	I	SI	I	Pr	F	CN/IA		Hla/Kn
Jersey	E	D	P	PC	E	I	SI	I	Pr	F	CN		Hla/KS
Brown Swiss	IC	C	Mo	PO/PC	E	I	SI	I	Pr	F	CN/IA		Hla/KS
Simmental	E	D	P	PC	E	I	SI	I	Pr	F	CN/IA		Hla/Kn

TABLE 3. INFORMATION ABOUT GOAT BREEDS RAISED IN ANGOLA													
RAÇA	A	TP	IU	GPR	I	DP	SP	AC	PM	C	R	Cn	PROV.
Algeriana	LA	E	Mo	C	E	I	SI	I	I	N	CN		Nam/Kn Hla
Mondombes	Au	E	P	PO	E/S	I/F	E	I	I	N	CN		Nam/Lda Bgo
Maned de Angola	Au	E	Mo	PO	E	I/F	E	I	I	N	CN		Bgo/KS
Muhanda	Au	E	P	PC	S/C	F	E	I	I	N	CN		Hla
Boer Goat	IC/E	E	M	PO	E	I	SI	I	Pr	F	CN/IA		Muito Disseminad a

TABLE 4. INFORMATION ABOUT SHEEP BREEDS RAISED IN ANGOLA													
RAÇA	A	TP	IU	GPR	I	DP	SP	AC	PM	C	R	Cn	PROV.
Zunu	Au	E	Mo	PC	S/C	F	E	I	I	N	CN		Sul
Mondombes	Au	E	M	PC	S/E	I/F	E	I	I	N	CN		Sul
Angola Maned	LA	D	P	PC	E	I	E	I	I	N	CN		Sul
Angola Long Legged	LA	D	P	PC	E	I	E	I	I	N	CN		Sul
Caraculo	E	C	P	PO/PC	E	I	SI	I	Pu	F	CN/IA		Nam/Hla/KS/ Lda/Bga
Merino	E	C	Mo	PO/PC	E	I	SI	I	I	F	CN		Hla/Hbo
Persa	E	E	Mo	PO/PC	E	I	SI	I	I	F	CN		Hla/Nam/Lda/ Bga Kn/KS
Dorper	IR	E	Mo	PO	E	I	SI	I	I	F	CN		Hla/Kn

TABLE 5. INFORMATION ABOUT PIG BREEDS RAISED IN ANGOLA													
RAÇA	A	TP	IU	GPR	I	DP	SP	AC	PM	C	R	Cn	PROV.
Jambona Munhanda	Au	D	P	PC	S/C	F	SI	I	I	N	CN		Kn
Suíno do Bengo	Au	E	Mo	PC	E	I	SI	I	I	N	CN		Lda/Bgo
Suíno do Kunene	Au	E	Mo	PC	E	I	SI	I	I	N	CN		Kn/Hla/Nam
Large White	E	E	Mo	PO	E	I	I	I	I	F	CN		Hla/Lda
Landrace	E	E	M	PO/PC	E	I	I	I	I	F	CN		/Hla/Lda
Duroc	E	E	Mo	PO/PC	E	I	I	I	I	F	CN		Hla Nam
Ganda I, II, III	RE	E	Mo	PC	E	I	I	I	I	F	CN/IA		disseminada

Nomenclature of tables - (Annex 4)

1.5 OBSTACLES, OPPORTUNITIES AND NEEDS IN THE USE AND DEVELOPMENT OF THE AnGR

There is little political sensitivity regarding the genetic resources in general and animal genetic issues in particular, because of the weak knowledge of the resources value, which is an obstacle to their development.

Their development is limited by:

- Weakened research institutions;
- Destroyed support structures;
- Human resources inadequacy;
- Lack of legal framework updating of animals exploration;
- Lack of animal census;
- Lack of breed classification, mainly the local ones;
- Weak use of the biotechnology;
- Crossbreeding between varied species breeds have been made in a isolated way, without sustainable records, with the purpose of improving the herds performance.
- Lack of information system that helps to record the AnGR generated incomes.

The ongoing peace status quo in Angola is a great opportunity to implement the policies and strategies for the resources development.

The restructuring of MINADER with the appearance of Veterinary Services and a greater autonomy to IIV will be the great opportunities to establish the cooperation programmes with other countries.

The reopening of the Agrarian Sciences Faculty at Agostinho Neto University is a great opportunity for the training personnel staff.

With the implementation of SADC/UNDP/FAO RAF/97/032 Project - Management of Farm Animals Genetic Resources - there have been created the pre-conditions for the installation of a database.

The State authorities are concerned with the protection of AnGR patrimony from the most spreading diseases, through the adequate conditions establishment to favour the diagnosis and treatment of diseases and, the accomplishment of periodic vaccination campaigns.

The most frequent diseases, with larger socio- economic and veterinary health impact are:

- Contagious Bovine Peripneumonia (CBPP) – an endemic disease that provokes enormous damage. It occurs with larger incidence in the provinces to the south of the 14th Parallel. The control is made through tracing and half-yearly vaccination campaigns in the affected areas;

- Lumpy Skin Disease (LSD) - an endemic disease that has been provoking great damage in the Southwest area (Huíla, Namibe, Kunene and Benguela provinces) in the last years. The control is made through tracing and annual vaccination campaigns in the affected areas;
- Tuberculosis - Mainly Cattle tuberculosis, dangerous for both animals and men. The control is made through tuberculinization, with sanitary slaughter and zoo- sanitary inspection in the slaughterhouses rejecting the infected organs;
- Trypanosomiasis - Mainly the bovine trypanosomiasis, which is endemic particularly in the north and east areas, occupying about 25% of the national territory, which limits the growth of animal population;
- African Swine Fever (ASF) – an endemic disease without a cure or a vaccine. It has been reported in the whole territory. It requires epidemiological surveillance. The control is made through the slaughtering and destruction of sick and suspicious animals and by observing hygienic and sanitary measures;
- Newcastle Disease - an endemic disease that occurs in the whole Country with larger incidence in the dry season, affecting mainly chickens. The control is made through the vaccination of the industrial flocks in the scope of the prophylactic programme.
- Rabies - Especially in pets with a larger incidence for dogs. It is a human health hazard that causes some cases of death every year. The control is made through annual vaccination campaigns.
- Symptomatic and Haematic carbuncles – some isolated cases have been reported. Farm animals are vaccinated annually in the areas of prevalence of the disease.
- Tick Born Diseases - The most frequent are Babesiosis and Heart Water (Cowdriosis).
- Verminosis - it has a great negative impact in the productive process and weight gaining to the animals.

The development status of FAnGR is in general stable with a growing trend in some areas of the Country.

There is a growing trend towards the exploration of milk cattle and improved meat cattle from exotic species.

CHAPTER 2

2.1 CHANGING DEMANDS ON LIVESTOCK PRODUCTION AND THEIR IMPLICATIONS FOR NATIONAL POLICIES, STRATEGIES AND PROGRAMMES RELATED TO AnGR.

The early 70s marked the government policies and legislation transition. However, in the following years, all the veterinary legislation related to livestock continued to be in force. In fact, these didn't change much in terms of policies, but the Country did set guidelines, policies measures, programmes and action plans for the agriculture including the livestock sector although with a certain lack of monitoring. With constant alterations of security situation, a great number of the rural population fled to the cities, which resulted to the change of their diet and to the need to intensify the production.

The Government has prepared and directed support programmes to the production. In the livestock area, these have been mainly directed to the poultry and pig raising, for being fast income generator activities and of great production capacity, as a guarantee of the maintenance of the animal products presence in the population's diet. These programmes failed for several reasons, being the most serious the reduction of the production of cereals, which became insufficient for the ration production. Due to the demographic growth and other reasons, there has been a greater demand for these products in the last 10 years. However, the livestock production had a quite significant decrease as a consequence of the rural exodus caused by the armed conflict resumption and the producer's discouragement on account of the military and political situation. If the "Galinha Cabiri", goats and other small animals used to be the most consumed, the import of frozen food has now changed the population's diet. In terms of utilized products, there haven't been many changes. Few cases have been reported such as the use of honey as the main dish in the population of some besieged communes (some villages in Huambo province), and the introduction of wild mice in regional dishes.

2.2 ALTERNATIVE STRATEGIES FOR THE CONSERVATION OF FAnGR AS RESPONSE TO THE CHANGES ON THE DEMAND ON ANIMAL PRODUCTS

Angola doesn't have conservation strategies due to the following reasons:

- Lack of updated censuses;
- Lack of knowledge on the breeds value of the most explored species;
- Lack of technological and technical capacity;
- Lack of sensitization;
- Inadequacy of qualified human resources;
- Lack of financial resources.

Since the colonial period, farm animals have only been used and maintained. So far the policies and production strategies have not taken the Conservation into account. However, individually and based on the ancestral knowledge, some autochthonous species have been conserved. The Government is responsible for the devising of policies and conservation programmes to be implemented by the liable institutions, such as the Veterinary Services (SV), Veterinary Research Institute (IIV), in collaboration with the private sector and local communities. Meanwhile, for the next years, a study on the characterization of breeds as well as an animal census is being prepared.

It is worth mentioning that there is a risk situation for some local cattle breeds such as the *Mocho de Malange*, *Mocho de Quilengues* and *Damara* but there is no specific conservation programme for them.

2.3 PRIORITIES FOR THE CAPACITY INCREASE TO FORMULATE AND EXECUTE CONSERVATION PROGRAMMES

Institutional reinforcement, the human resources training, normative development and research capacity, as well as acquisition and transparent use of the financial resources, technologies transfer, rehabilitation, improvement and infrastructures modernization.

In this chapter there are some available research infrastructures but few structures for training and farmers development programmes.

There has been no development programmes in the last years. The stockholders have individually implemented improvement actions. There are no directing policies, except for the milk cattle improvement programme not well followed. In the scope of this programme, managed and administered by the government, some breeders have been using imported animals. The production system used is semi-extensive in most of the cases. Before the independence, the improvement programmes consisted by introducing exotic cattle to autochthonous herds, as in the case of Sta. Gertrudes and Zebú breeds to the Sanga cattle; For the species Swine there used raising and maintaining the Ganda biotypes, etc.

2.4- MANAGEMENT OF THE FAnGR AT RISK

In general there is no directed handling or monitoring of FAnGR in a risk situation; however, the breeders are keeping these breeds according to their possibilities and abilities.

With regard to the extensive system, animals are maintained in natural pasture and they are traditionally raised and adapted to their habitat, being their growth and fattening irregular.

With regard to the environment, one can notice an overload in the extensive system pastures. In some areas, the number of animals per hectare sometimes

exceeds what is allowed resulting to a decrease of the palatable forage areas and the consequent degradation of the soils. This system is mostly used by the household sector.

The semi - intensive and the intensive systems are used by the commercial sector and they have had a lot of difficulties due to the lack of capital.

The intensive system is in decay, for it is a more demanding type of exploration in terms of feeding, hygienic and sanitary conditions of the environment and others. The stakeholders had a difficult phase concerning the financial, technological and human resources to keep this system going.

The semi-intensive system is gaining importance at the country level for it is possible to consolidate both extensive and intensive systems. Stockholders have been finding for the best way of livestock exploration in this system.

The used breeds are autochthonous and exotic. Those breeds are extreme important to sustain the herds and consequently the production systems. These breeds are resistant and adapted to the local conditions, and once crossed with improved imported breeds they bring positive results as regards the increase of the meat production and / or milk and; on the other hand, they resist to the environment conditions.

As far as the stockholder's reaction to the risk situation, there is some indifference because of the lack of knowledge, lack of policies and conservation strategies on the FAnGR at the Country level.

Based on the national production statistics, import, export, population, demand and consumption of foods there are changes concerning the production indexes, products quality, the population density face the production and the import increase of food due to the low local production.

As for the animal and animal products export, although there are gaps in statistics terms, skins and leathers of different animals are exported mainly from the South of Angola.

The production systems do not find the changes in the present and foreseen demands due to the degrading conditions of many of the agricultural and livestock infrastructures, inadequate management, as well as the lack of financial resources to invest into the agrarian sector.

One can conclude that all systems were altered due to the recently ended war, the climatic changes and the consequences of those two factors.

The main causes of the alterations are:

- The population growth, the urbanization, the socioeconomic conditions and the consumers' demand;
- The public health and the environmental variations;
- The sources of food and other inputs;
- The new production and processing technologies.

2.5 ALTERNATIVE STRATEGIES FOR THE CONSERVATION OF THE AnGR FACE THE CHANGES IN THE ANIMAL PRODUCTS DEMAND

The production systems have not experienced alterations in the last 20 years. The extensively explored local breeds are raised mainly for the meat production, and the exotic breeds for the milk and eggs production.

For the last 20 years, the products consumption and animal services have experienced some alterations; however, the most consumed products are still fresh meat and eggs; the milk is consumed in the traditional areas of the cattle raising.

CHAPTER 3

3.1- IDENTIFICATION OF THE ACTUAL CAPACITIES IN THE COUNTRY

It is recognized that the existing capacities are poor and inadequate to support the subsequent actions for better knowledge of FAnGR that lead to the definition of action plans and priorities for their development.

The existing capacities for the conservation and management of the FAnGR are mainly concentrated on the following:

Veterinary Services - linked to MINADER, it is a new institution, originated from a countrywide well-represented structure, the former - *Direcção Nacional de Pecuária*. It is represented in all of the provinces, with a technical staff that in many provinces does not include a graduated personnel staff. It has experienced difficulties in terms of infrastructures and means for the execution of their assignments.

The Veterinary Research and Training Institutions and Animal Technical Institutions were provided with modern infrastructures.

RESEARCH INSTITUTIONS

Veterinary Research Institute (IIV) with 10 Animal technical stations. During the post-independence war, the following structures were entirely destroyed and, the equipment was sabotaged:

- Huambo Zootechnical Station ----- totally destroyed
- Humpata Zootechnical Station ----- In recovery with reasonable operation
- Caraculo Zootechnical Station ----- In recovery, with reasonable operation
- Cacanda Zootechnical Station -----In recovery with a reasonable operation
- Ganda Zootechnical Station ----- Destroyed
- Malange Zootechnical Station ----- Destroyed
- Kafú Zootechnical Station ----- Abandoned
- Lungo Zootechnical Station ----- Abandoned
- Dombe Grande Zootechnical Station ----- to be created
- S. Vicente Zootechnical Station----- New
- Quilengues Zootechnical Station ----- Abandoned
- Artificial Insemination Centre ----- Destroyed
- Huambo Central laboratory -----Destroyed

Apart the stations, the Institute have five regional veterinary laboratories, in Lubango, Luanda, Benguela, Namibe and Cabinda witch are all in recovery state with a weak operation and three sub- regional laboratories, in Wako kungo, Camabatela and Malange also destroyed.

- The Agronomic Research Institute has 15 experimental agricultural stations of which the Experimental Station of Chianga in Huambo undertakes forage culture activities and it is currently being recovered.

TRAINING INSTITUTIONS

One Agrarian Sciences Faculty in the Huambo province. As a result of the destroying war since 1992, the two courses that it used to provide stopped running. The Agronomy course restarted in 2003 and the Veterinary course has not yet started.

Agrarian Middle institutes:

- Tchivinguiro Agrarian Middle Institute, in the Huíla province - is operating, with agronomy and livestock courses.
- Huambo Agrarian Middle Institute, in the Huambo province - is operating with serious difficulties
- Cangola Agrarian Middle Institute, in the Uíge Province - destroyed, at the moment working in the Uíge city, with a teaching staff constituted by collaborators supplying basic and middle courses of General agronomy and Livestock.

A Centre of Diffusion and Technical Documentation (CDDT), the actual Centre of Documentation and Information (CDI) - it operates in the facilities of MINADER. This service, which is devoted to collecting and distributing information, was not an exception to the dilapidation of the existing publications and books in its library.

NON-GOVERNMENT ORGANIZATIONS

- The small-scale intervention of the National and International NGO's in the FAnGR mainly in the vulgarization of small and big animals, mainly monogastric and ruminant for the population in the rural areas.

The general overview in these institutions is:

- Lack of specialized human resources in the research and in the agronomic, veterinary and animal technical training.
- Lack of financial resources for the recovery of the inoperative infrastructures.
- Lack of a policy directed to the AnGR.

The way FAnGR are managed at present does not guarantee a sustainable production. All limitations in terms of the capacities described herein have a negative influence to a better knowledge of the FAnGR and their development.

A better management of FAnGR would provide an increase of the supply of cattle products both in the rural and urban areas contributing in a sustainable way to hunger alleviation and guarantee the food security.

3.2 ACTIONS TO BE IMPLEMENTED

Taking into consideration the existing capacities and their inadequacies, several actions must be implemented:

Concerning to the animals

- Accomplishment of the livestock census and creation of an AnGR database;
- Technical and economical viability study of the main species breeds;
- Characterization of the existing breeds of the different animal species and their geographical localization;
- Implantation of the standard system of animal identification to facilitate the zoo-sanitary control.

Training

- Training of more technicians and qualify other existing human resources;
- Curricula adaptation of the training institutions, research programmes and plans promoting the valuation of animal genetic resources;

- Creation, rehabilitation and equipping of the infrastructures and information mechanisms in the livestock subject;

At the institutional level

- Institutional reinforcement of the Veterinary Services and other institutions devoted to the conservation and development of the FAnGR;
- Creation of communication networks and publication of the results of the technical and scientific research accomplished in the investigation, research and training institutions;
- Creation of breeders' associations according to the animal species with a socioeconomic impact and, reinforcement of the existing associations;
- Better budget management granted for the livestock development;
- Financial support to the planned actions for livestock and training programmes and projects;
- Reconstruction, rehabilitation and equipping of the Zootechnical stations, Artificial insemination Centres and Regional Veterinary Labs of IIV;
- Accomplishment of the plan for the creation of zootechnical stations;

In the environmental area

- Pastures and forage improvement;

In the legislative area

- Short term creation of Policies and Legislation adapted to the FAnGR management;

Long term Action

- Creation of a National Institute for the FAnGR .

CHAPTER 4

NATIONAL PRIORITIES FOR THE CONSERVATION OF THE FAnGR

Considering the actions above mentioned, we have the following priorities:

- Animal census and Database preparation
- Training and Development of the Human resources
- Sensitization and national awareness on the value of FAnGR
- Guidelines for the elaboration of the FAnGR National Programme of Conservation
- Formulation of the national policies and elaboration of legislation for the FAnGR.

CHAPTER 5

ACTIONS TO DEVELOP IN THE SCOPE OF THE INTERNATIONAL COOPERATION

Considering the present situation and the existing inadequacies in the area of FAnGR for its development in comparison with the potential of the Country, taking into account the importance of the basis of the international exchange and mutual cooperation, it is recommended that Angola should sign several agreements in the different issues related to FAnGR.

To this end Angola should:

- Set up partnership with UN institutions (FAO, UNDP, AIEA), SACCAR and national and international NGO's for the creation of a database for the Genetic Resources and to facilitate the implementation of the actions, projects and defined programmes in the FAnGR subject;
- Collaborate with similar agrarian research institutions (veterinary and agronomic) in the Southern region and other (ILRI, CIRAD-IMVT, IMTL, and LNIV);
- Install a System of accordance in harmony with the countries of the region through exchange of experiences, research results and exchange of biological material.
- Reinforce the capacity and the performance of the libraries through bibliographical equipping related to FAnGR;
- Assure the control of transboundary diseases aiming at economic interests defence of the Angolan State and of the neighbouring countries;
- Qualify human resources in the conservation and animal biotechnology.
- Harmonize the curricula of agrarian studies institutions in line with the regional congeners.

CHAPTER 6

6.1 PREPARATION OF THE NATIONAL REPORT

This report was prepared in response to the international appeal for a World Action Plan for AnGR management for food and agriculture.

In the scope of the previously mentioned appeal, since 1991 Angola has been invited to take part in the record of the breeds of the main animal species for food

and agriculture. At first only two species were registered, Cattle and Sheep, with some elements about their situation.

In 1997, in the scope of SADC regional programme for animal resources, through FAO, all countries of the region were present to a meeting that was the starting point of united actions with the implementation of SADC/UNDP/FAO - RAF-97/032 Project - Management of the Farm Animal Genetic Resources.

This Project has as its main objectives, the accomplishment of a survey on the resources and an alert to the preservation need and their rational use for hunger and poverty alleviation.

Thereby and in the scope of the Global Strategy, technicians and people in charge of animal genetic resources in SADC countries were prepared for the report elaboration, in line with the norms delineated by FAO.

After this preparation, with orientation from both, the Global structure and the Regional Coordination of RAF-97/032 Project. With Angola's Government funds and financial aid from the Regional Project fund, the Ministry of Agriculture and Rural Development with the responsibility of accomplishing National Coordination the RAF-97/032 Project assumed the preparation of the National Report.

For the effective preparation, this report counted with a national seminar for information and preparation where representatives of several public and private institutions, FAO, NGO's, etc. took part. (Annex 3).

In this seminar responsibilities were assigned to some individuals and institutions. The National Consultant Committee was appointed (NCC) and the work plan was approved for the accomplishment of the National Report.

The NCC worked in accordance with the work plan, not much in compliance with the deadlines for each action but, in general trying to carry out the tasks within the agreed terms in the national seminar.

Written contributions in the form of Provincial Reports were collected from ten of the 18 provinces of Angola.

In general, the process was different for each province. Some people at provincial level prepared a more advisory process than the others, some created work commissions and others were limited to directed consultancy.

Bibliography and work documents from Veterinary Services, Veterinary Research Institute and others were consulted.

For the approval of the Report, the NCC sent the first version to all the provincial heads of Veterinary Services, who were in charge of the implementation and description at provincial level. There after a national meeting was held where the first version was discussed, enriched and approved. Then, it was submitted to the Minister of Agriculture and Rural Development for approval and translated to English.

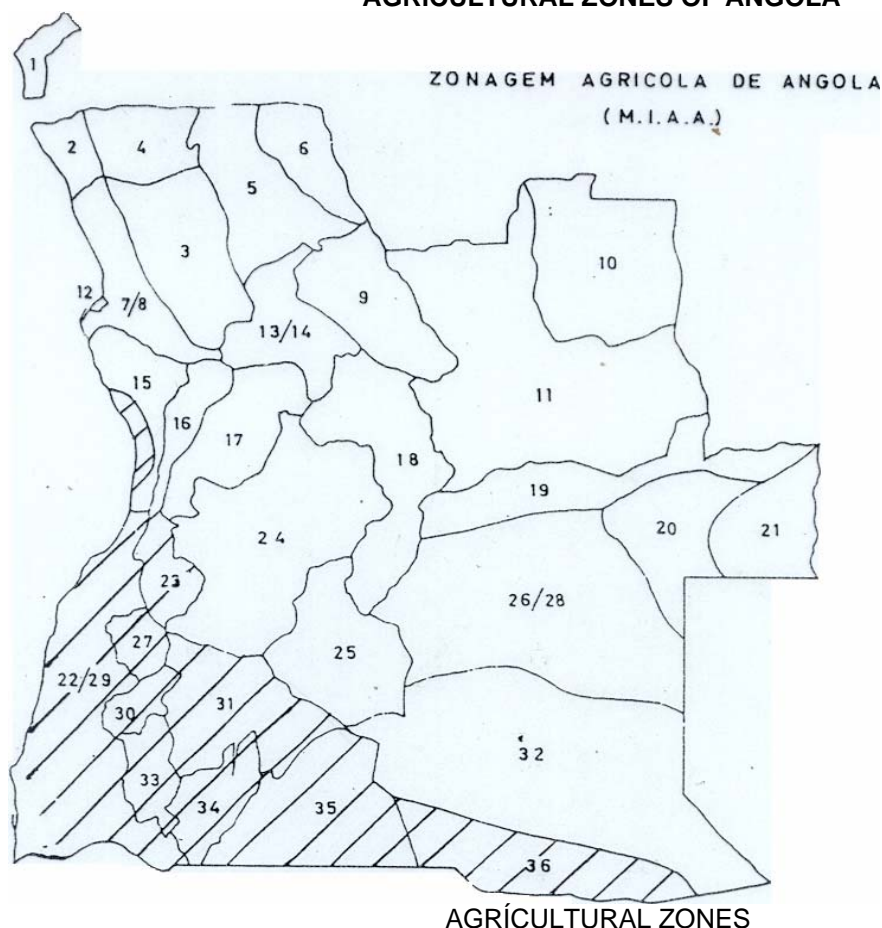
After the signature of His Excellency the Minister of Agriculture and Rural Development, it was submitted to the FAO General Director.

For its accomplishment the Government covered the expenses, in a post war difficult moment when every priority was given to issues related to the defence of the human integrity. Its accomplishment counted with financial contribution of FAO.

6.2- ANNEXES

- 1 - Maps
- 2 - Control of farm animals in the years 1998, 2000 and 2002
- 3 - Conservation tables of existing animals
- 4 - Tables Nomenclature
- 5 - Evaluation table of the Capacities, Priorities, Strategies and International Cooperation
- 6 - List of participants to the elaboration of the NR
- 7 - Bibliography

ANNEX 1 – MAPS
ANNEX 1.1
AGRÍCULTURAL ZONES OF ANGOLA



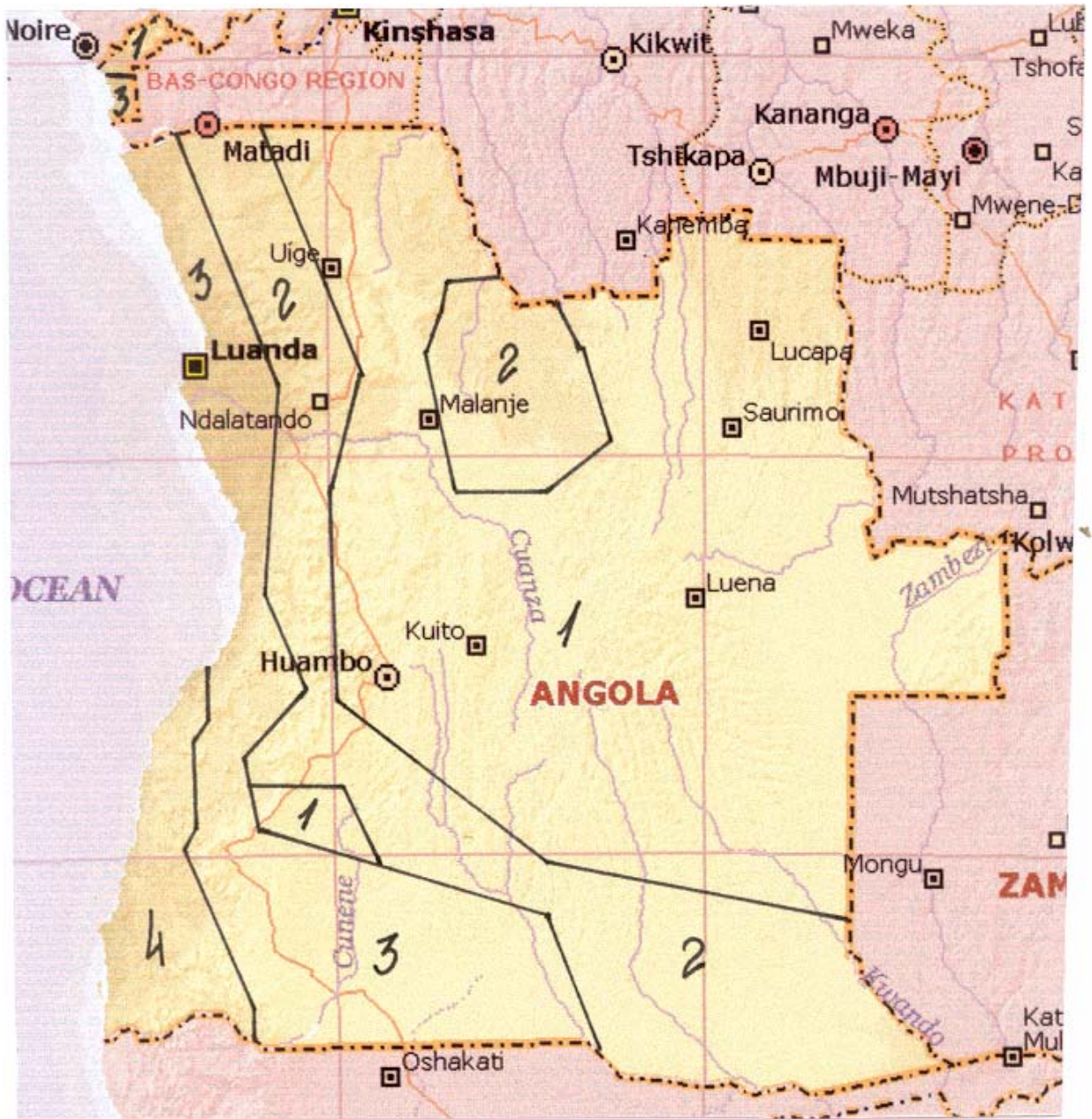
- | | |
|-----------------------------------|--------------------------------------|
| 1- Cabinda | 19- East C.F.B.influence |
| 2- Northern sea coast | 20- Anharas do Moxico |
| 3- Dembos Coffee area –Uíge | 21 – Alto Zambeze |
| 4- Subplateau of Congo | 22/29 – Litoral Sul |
| 5- Plateau of Congo | 23- Transition from Centre to West |
| 6- Cuango | 24- Central Plateau |
| 7/8- Sea coast of Luanda | 25 - Ganguelas |
| 9- Baixa de Cassange | 26/28 – Bundas e Luchazes |
| 10- Northeast of Lunda | 27 - Quilengues |
| 11- Lunda | 30 – Huíla Highlands |
| 12- Suburb of Luanda | 31 – Transition from Centre to South |
| 13/14 – Plateau of Malange | 32 – Cuando - Cubango |
| 15 – Southern sea coast of Cuanza | 33 - Gambos |
| 16 – Libolo- Amboim | 34 – Baixo Cunene |
| 17 Transition to Northeast | 35 - Cuanhama |
| 18 – Alto Cuanza | 36 – Baixo Cubango |

Farming and pastoral region of the Milking Complex



Source: Adriano Fernandes Gomes – Diagnóstico da Situação da Pecuária no Sudoeste de Angola
 Projecto 7. ACP.Reg.146-Conv.5271/ANG, 1997,p.s/nº

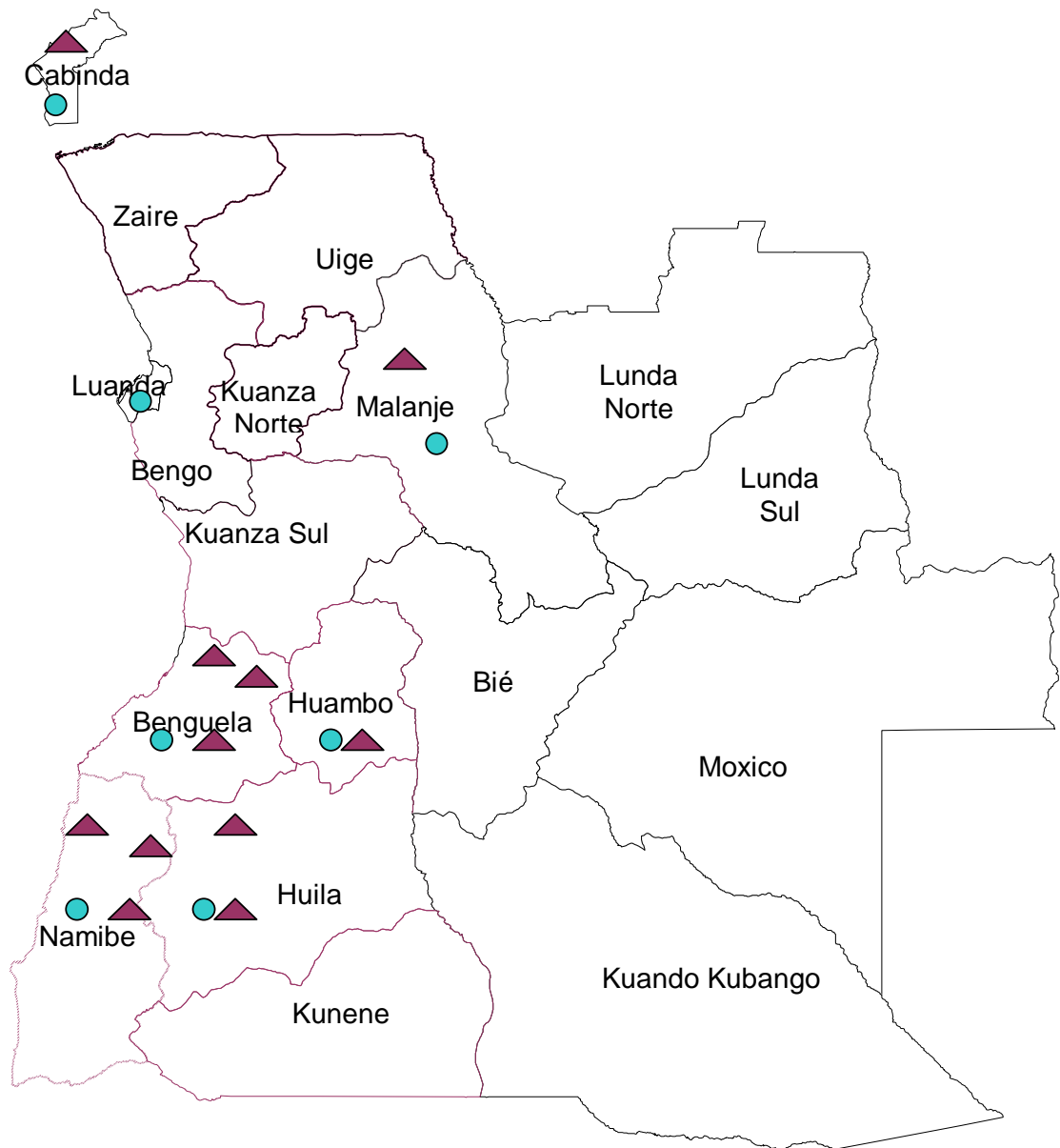
ANNEX 1.2
TYPES OF PASTURES IN ANGOLA



- 1 – SOUR PASTURES**
- 2 – MIXED PASTURES**
- 3, 4 – SWEET PASTURES**

- Source: Castanheira Diniz A. – Angola o Meio Físico e Potencialidades Agrárias, 190p. 1991;

ANNEX 1.3
LOCALIZATION OF IIV's ANIMAL TECHNICAL STATIONS AND REGIONAL LABORATORIES



Legend

Animal technical station



Regional Laboratories



Source : IIV Programas e Estratégias do IIV, (2002), p.21

ANNEX 1.4
LOCALIZATION OF TSE-TSE FLY AND TRIPANOSSOMIASIS INFECTED AREAS
(Colour marked areas)



Source: Nsalambi David - Quadro nosológico referente as doenças de importância económica em Angola; Luanda, 2001;23p.

ANEXO 1.5
LOCALIZATION OF PRINCIPLE FOCI OF CONTAGIOUS BOVINE PERIPNEUMONIA -
(Colour marked areas)



- Source: Nsalambi David - Quadro nosológico referente as doenças de importância económica em Angola; Luanda, 2001;23p.

ANNEX 1.6
LOCALIZATION OF PRINCIPAL FOCI OF LUMPY SKIN DISEASE (LSD)
(Colour marked areas)



- Source: Nsalambi David - La Dermatose Nodulaire Contagieuse Bovine en 1993-1995 dans le sud de l'Angola; Bulletin-OIE n°4, Juillet-Août-2000;p.462-466.

ANEX 1.7
LOCALIZATION OF PRINCIPAL FOCI OF AFRICAN SWINE FEVER (ASF)
OFFICIALLY UNDECLARED PSA ZONE UP TO 1986
(Colour marked areas)



Source: Nsalambi David – Quadro nosológico referente as doenças de importância económica em Angola; Luanda, 2001;23p.

ANNEX 2
FARM ANIMAL STATISTICS IN THE YEARS 1998,2000 e 2002

FARM ANIMAL STATISTICS – 1998					
PROVINCES	ANIMAL ESPECIES				
	CATTLE	PIGS	GOATS	SHEEPS	POULTRY
CABINDA	960	2447	4373	3044	15596
ZAIRE					
UÍGE	61	5959	18761	7378	34144
MALANGE					
LUNDA NORTE					
LUNDA SUL					
KUANZA NORTE					
BENGO					
LUANDA					
KUANZA SUL	44352	6402	58064	31088	23297
BENGUELA	18311	5226	24199	681	14450
HUAMBO	42550	75425	119250	28700	
BIÉ					
MOXICO					
NAMIBE					
HUÍLA					
KUNENE					
KUANDO KUBANGO					
TOTAL	106234	95459	224647	70891	87487

FARM ANIMAL STATISTICS – 2000					
PROVINCES	ANIMAL ESPECIES				
	CATTLE	PIGS	GOATS	SHEEPS	POULTRY
CABINDA	451				
ZAIRE					
UÍGE	24	31914	25952	1885	85011
MALANGE					
LUNDA NORTE	29	714	2451	768	2102
LUNDA SUL					
KUANZA NORTE	250	2701	2390	740	3735
BENGO					
LUANDA	3975				
KUANZA SUL	41746	20262	45645	25495	31277
BENGUELA	14253	3861	18065	640	10586
HUAMBO	3072		2375	763	
BIÉ					
MOXICO	750	4000	1200	550	
NAMIBE	65768				
HUÍLA	250959				
KUNENE	282374				
KUANDO KUBANGO					
TOTAL	663651	63452	98078	30841	132711

FARM ANIMAL STATISTICS – 2002					
PROVINCES	ANIMAL SPECIES				
	CATTLE	PIGS	GOATS	SHEEPS	POULTRY
CABINDA					
ZAIRE					
UÍGE	21000	2257	12982	731	25452
MALANGE					
LUNDA NORTE					
LUNDA SUL					
KUANZA NORTE	80800	14500	11500	2500	25000
BENGO	5000		1348	248	
LUANDA	72000	1500	12688	5937	25000
KUANZA SUL	187500	27723	69387	34867	27537
BENGUELA	319200	5812	21782	6349	37270
HUAMBO	276000		824	365	
BIÉ					
MOXICO					
NAMIBE	268000	3000	467000	120000	9000
HUÍLA	1188000	173000	476400		100000
KUNENE	1188000				
KUANDO KUBANGO	64400	15500	56000	5250	
TOTAL	366990	243292	1129911	176247	249259

- Source: SV 2003

ANNEX 3
CONSERVATION TABLE OF LIVING ANIMALS (IN SITU)

Breed	Private farms	Research Institutions	Breeding Nuclei	Protected Areas	Provinces
CATTLE					
Kwaniama Muíla; Nhaneca	X		Household		Kunene
Africander	X	Animal technical station of Cacanda IIV			Namibe
Holandeza	X	Animal technical station of Humpata-I.I.V.			Huíla
Humbe	X		Household		Huíla
Mucubal	X		Household		Namibe
GOATS					
Algerian (Combo, Ombo)	X		Household		Namibe Cunene Huila
Boer Goat	X		Household		
SHEEPS					
Mondombes (mémé)	X		Household		Namibe Bengo Luanda
Maned de Angola (Omémé)			Household		Bengo Huambo K. Sul
Caraculo Persa Merino	X	Caraculo and Humpata Zootechnical Station-I.I.V.			Namibe , Huila, Kwanza Sul e Luanda
POULTRY					
Indigenous poultry	X			Household	All over the country
PIGS					
Ganda Pig I, II e III	X	Animal technical station of Humpata - I.I.V.			Huíla Benguela
Native			Household		Bengo Kunene Huambo Huila

ANNEX 4 NOMENCLATURE OF TABLES

- **ADAPTATION (A)** – Locally adapted (LA), Autochthonous (Au), Recently introduced (RI), Continually Imported (CI) Exotic (E), Extinction Risks (ER)
 - **POPULATIONAL TREND (PT)** – Increasing (I), Decreasing (D), Stable (S)
 - **INTENSITY OF USE (IU)** – More (M), Moderate (Mo), Little (L)
 - **LEVEL OF BREED PURITY (LBP)** – Pure from Origin (PO), Pure Hybrid (PH), Hybrid (H)
 - **IMPORTANCE (I)** - Economic (E), Social (S), Cultural (C)
 - **DESTINATION OF PRODUCTS (DP)** – Industry (I), Household (H)
 - **PRODUCTION SYSTEMS (PS):**
 The country should uniformly use one of the options below
 HIGH INPUTS (HI) - MEDIUM INPUTS (MI) – LOW INPUTS (LI)
 EXTENSIVE (E), INTENSIVE (I), SEMI-INTENSIVE (SI)
 USE OF TECHNOLOGY - HIGH (H), AVERAGE (A), LOW (L), NONE (N)
 - **ASSOCIATIONS OF BREEDERS (AB):** EXISTENT (E) – INEXISTENT (I)
 - **IMPROVEMENT PROGRAMMES (IP)** – Public (Pu), Private (Pr), Mixed (M), Inexistent (I)
 - **CHARACTERIZATION (C)** – by Phenotype (P), Cytogenetical (C), Biochemical (B), Molecular (M), None (N)
 - **REPRODUCTION (R)** – Natural Copulation (NC), Artificial Insemination (AI), Embryo Transplant (ET), “in vitro” Fertilization (IVF)
 - **CONSERVATION (Cn)** – ‘In – situ (IS), Ex- situ (ES)
- PROVINCE (PROV.)** – Kn – Kunene; Hla- Huíla; Nam – Namibe; Cab- Cabinda; Mal- Malange; Lda – Luanda; KS- Kwanza- Sul; KK- Kuando – Kubango; Bgo- Bengo; Hbo- Huambo; Bga – Benguela; LS – Lunda- Sul

ANEXO 5
Evaluation table of the Capacities, Priorities, Strategies and International Cooperation

ITEMS	CAPACITY Assessment				PRIORITIES			ESTRAT.	C. INTERN.	
	INEX.	Little	Average	SUF	High	Average	Low		OFER.	SOL.
POLITICAL										
Governmental	*				*					*
Effective Actions		*			*					*
Control and Inspection		*			*					*
Breeding Policies	*				*					*
LEGAL										
Current Legislation	*				*					*
Preservation	*					*				*
Conservation	*					*				*
INSTITUTIONAL										
Public										
Education		*			*					*
Research		*			*				*	*
Technology Trans.		*				*				*
Genealogical Reg. Services	*					*				
Private										
Assoc. of breeders		*						*		
Individual initiatives			*					*		
Genealogical Reg. Services	*					*				
NGOs		*				*			*	*
Projects Cooperation		*			*				*	
GENETIC RES										
Industrial Use	*							*		
To Conserve										
In-situ	*					*				*
Ex-situ		*					*			*
Reproduction Techniques		*			*					*
PHYS. STRUCT.										
Animal technical stations			*		*					
Labour.\ Equipment		*			*					*

Communication net	*				*					*
Transport		*			*					*
Graduates		*				*				*
Conservation										
Quantitative		*			*					*
Graduates	*					*				*
Source of Information.										
Census	*				*					*
Technical directories	*				*					*
Scientific Publications.	*				*					
OTHERS										
Pop. Conscience		*						*		
Related Areas		*			*					
Sanity (Programmes)		*						*		
Sanity (Vigil/Inspec.)		*			*					*
Nutrition (Pastures)		*			*					*
Production chain		*						*		
Marketing		*						*		

Objectives of annex 5:

Considering that the collected information in parts 3 to 5 of the RN are sequential and supplemental, it was deemed necessary to summarise it in order to facilitate the interpretation and to take decisions by the analysts of this Report.

The areas were defined in line with FAO guidelines and the subdivision was made to help specify with more precision the existing capacities as well as the resulting priorities to enable the implementation of the necessary actions for the national FAnGR conservation .

EXPLANATORY GLOSSARY:

EFFECTIVE ACTIONS: There are quite often policies that are not implemented but which need to be identified when a situation arises. Therefore before implementing new measures one should analyze the existing ones which were not implemented because of different reasons.

CONTROL AND INSPECTION: Our intention here is to identify the current measures of the movement control of animals in the country and between the countries, as well as aspects related to the rights of the intellectual property of FAnGR.

BREEDING POLICIES: It concerns the official position of the country face the importance of the livestock sector in the social and economic aspects of the country.

INDIVIDUAL INITIATIVES: This refers to the cases where breeders, from their own initiative and out of their own resources, raise and maintain certain breed for economical, social, cultural and/or household reasons. There can also be activities related to the breeder's associations per animal species.

Physical: This item includes aspects that can be effectively used in FAGR such as built areas, rural areas (experimental farms, preservation areas, etc.), laboratory instruments, and means of transportation which can be used effectively in FAnGR.

OTHER: FAnGR should be seen as an integral part of the whole animal production systems. Therefore, the evaluation of the current situation and of the needs of the system component areas should be included in this NR as a way to allow a harmonious development among all the components of the system.

ANEXO 6

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