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Unit G5 - Veterinary Programmes

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*Programmes for the eradication, control and monitoring of certain  
animal diseases and zoonoses*

## **Survey programme for Rabies**

**Approved\* for 2012 by Commission Decision 2011/807/EU**

**Romania**

\* in accordance with Council Decision 2009/470/EC

## **Programme for Surveillance, Control and Eradication of Rabies in Romania 2012**

### Summary:

1. Identification of the programme
2. Historical data on the evolution of rabies in Romania
3. Description of the submitted programme
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## **Identification of the programme**

Member State: Romania

Disease: Rabies

Application year: 2012

Reference of this document: N.S.V.F.S.A.

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## **2. Historical data on the epidemiological evolution of rabies in Romania.**

Rabies is mortal, acute encephalitis of warm blooded animals and humans, caused by a RNA-virus of Genus Lyssavirus, which spread mainly by the saliva of diseased animals, as a result of their bites. The disease can also spread by the contamination of wounds of the skin or mucosal membranes with the saliva of the diseased animals. All warm blooded animals are affected. Rabies has two clinical forms – furious and dumb. Both forms are characterized by signs showing the affection of the central nervous system, behavioral deviation, salivation and the paralysis of the skeletal and pharyngeal muscles. Incubation period for rabies is between 14 days and 6 months, or more. An animal infected by rabies can spread the virus up to 10 days before the appearance of clinical signs. After showing the clinical signs, the animal dies in 10 days.

Rabies is disseminated on the whole globe, except certain countries in which, due to geographical particularities, either the virus never entered or the country became free of the disease, consequently to the application of certain serious combating measures (Luxemburg, Island, Norway).

Lately, it was noticed a recrudescence of rabies in different regions of the world due to maintenance of the virus in the population of wild animals.

Romania, in the past, was one of the countries having the highest number of rabies cases from Europe.

Starting with 1950, following the measures applied, including immune- prophylaxis, rabies became preponderantly limited to wild carnivores, especially foxes.

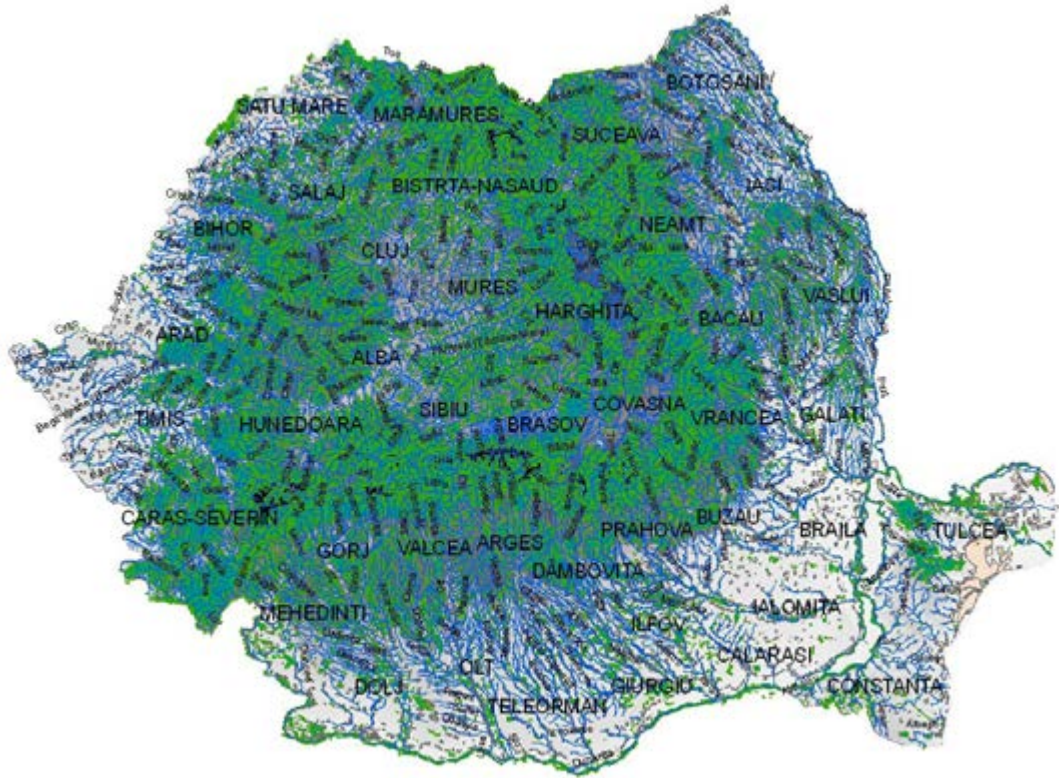
In spring 2011 (May-June) was made the oral vaccination of foxes in 16 counties (Arad, Alba, Bihor, Mureș, Maramureș, Bistrița Năsăud, Brașov, Cluj, Covasna, Caraș-Severin, Harghita, Hunedoara, Sălaj, Sibiu, Satu Mare, Timiș) in West and center of Romania, which is the entire territory bounded by the Carpathian Mountains.

This included the manual distribution of baits and air distribution of baits, reaching the borders with Hungary, Serbia and Ukraine.

The oral vaccination of foxes was made by distributing by plane the vaccine baits (20 baits/km<sup>2</sup>), and in areas where the access was burdened and around the localities was done manually (approximately 25 baits/km<sup>2</sup>) by the managers of the hunting founds with the official vets.

## Foxes population of Romania

Romania has a surface of more than 237500 km<sup>2</sup> of which 62346 km<sup>2</sup> is covered by forests. (Diagram1).



**Diagram 1**

In Diagram 2, is represented the percentage of geographical distribution of an over than 55.906 fox population in 2010, distributed per 42 counties. The fox population is distributed in 2154 hunting grounds managed by the National Forests Administration and the Association of Hunters and Fishers at which these are officially registered (Graphic 2). From numerical point of view, the fox population in Romania, in the last years, is maintained in constant limits, which determine that their density to be under 1 animal per km<sup>2</sup>.

The stock-taking of foxes is done annually in spring, when is also established the cote for fox hunting.

## Geographical distribution of foxes in Romania, 2010

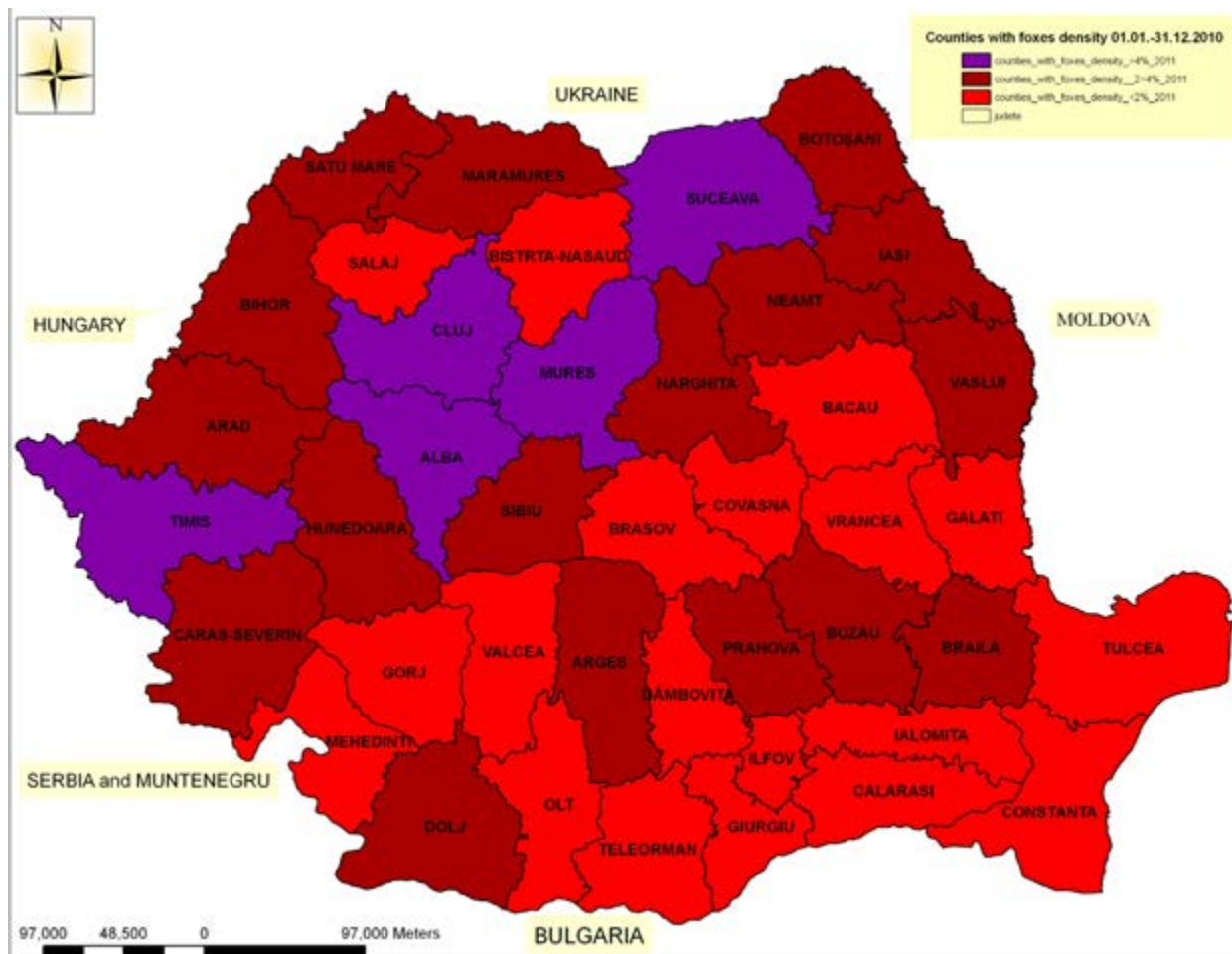
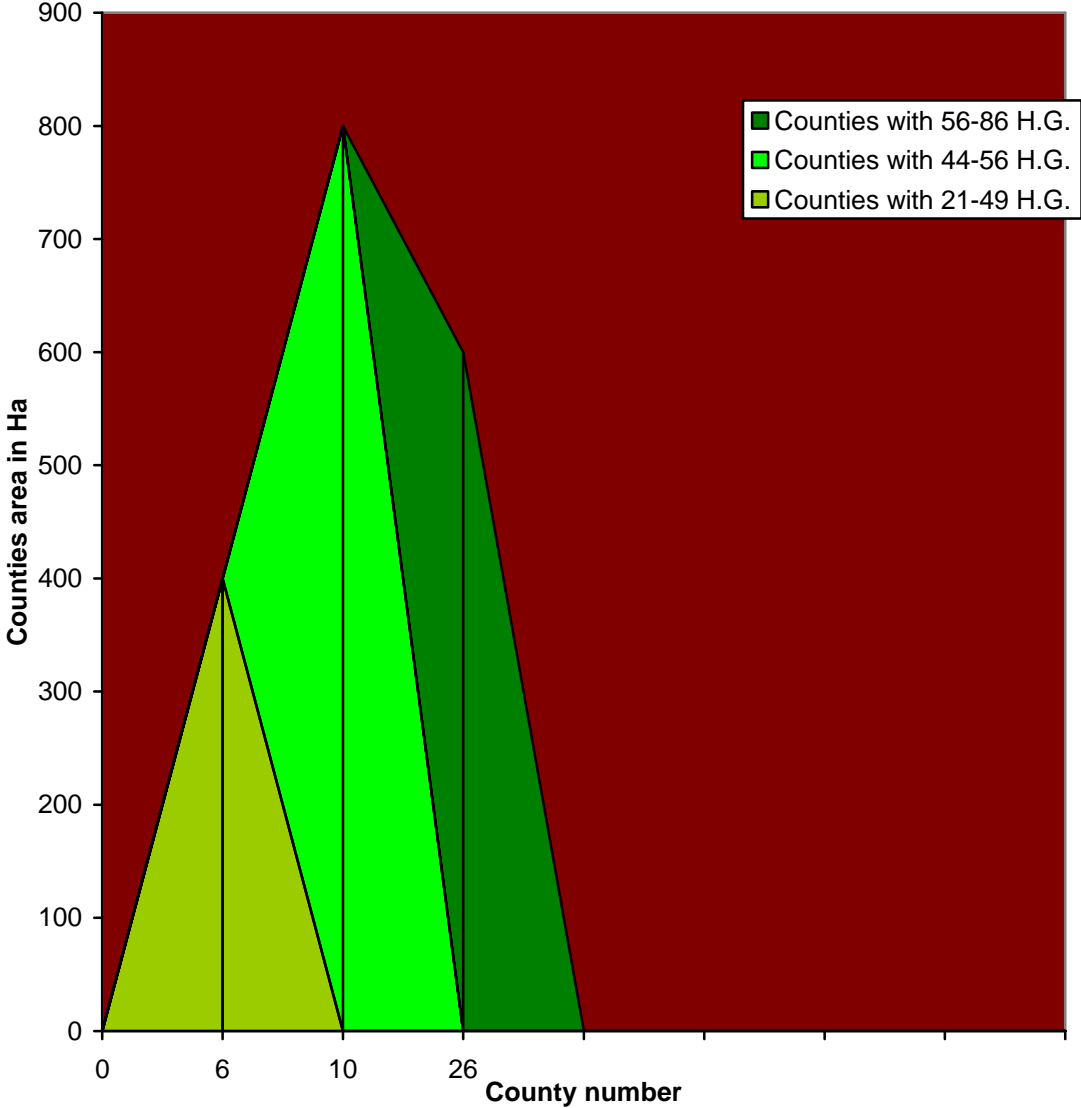


Diagram 2

**Graphic 1. Repartition of hunting grounds (H.G.) depending on the counties surface**



- Hunting grounds (H.G.)

## **Rabies situation in Romania**

Rabies in foxes living in forests evolves for many years.

Rabies in Romania is an endemic disease with increasing evolutionary tendencies.

The association between the number of rabies cases in fox population and in domestic animals population is sustained by *Graphic 3*. In Diagram 3 is presented the percent of domestic and wild animals infected with the rabies virus, distributed per counties, in 2010.

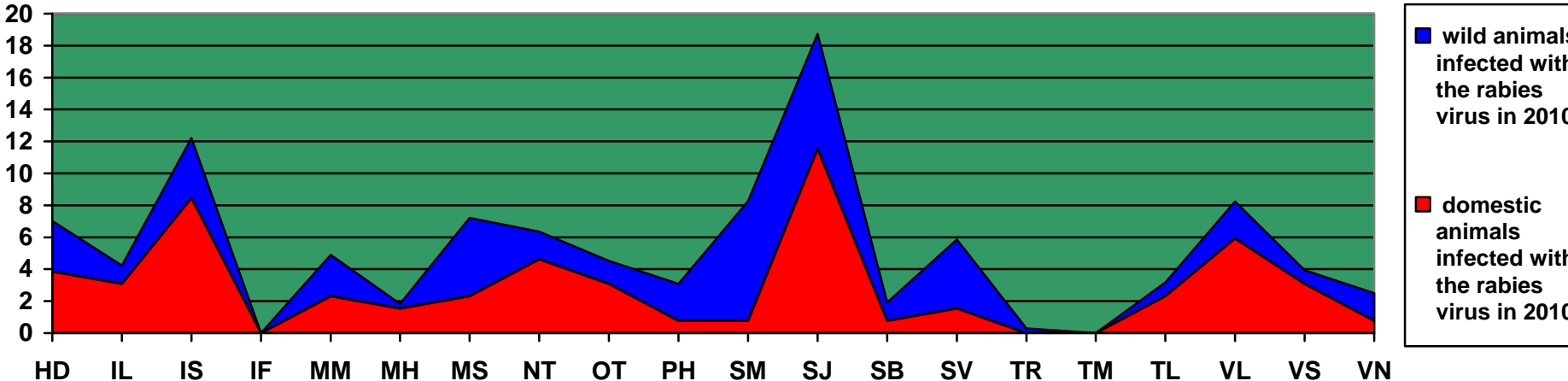
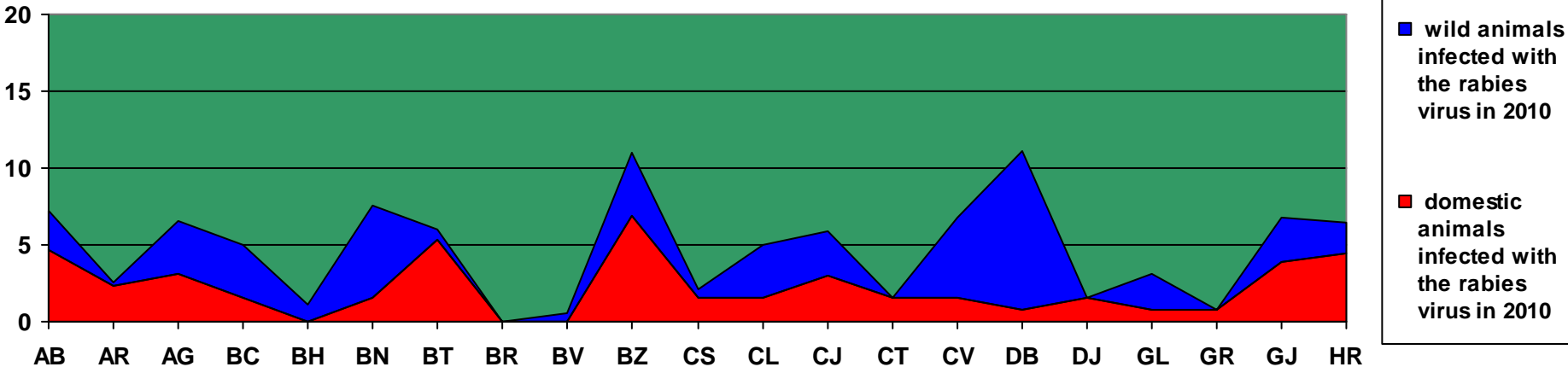
It must be added, that the Danube Delta is a particular area, protected under the Administration of Biosphere's Reservation, where beside the fox population and other wild animals, are also living domestic animals in a semi wild condition.

Against the situation presented, it can be appreciated that rabies evolves sporadically in the population of wild animals, other than foxes, its occurrence not being dependent of the existence of infected foxes in the relevant area.

Most rabies cases were registered in the dog population, but an important number of cases were also registered in the feline and bovine populations



cases number/ 42 counties



Graphic 2

# Rabies prevalence in foxes, Romania 2010

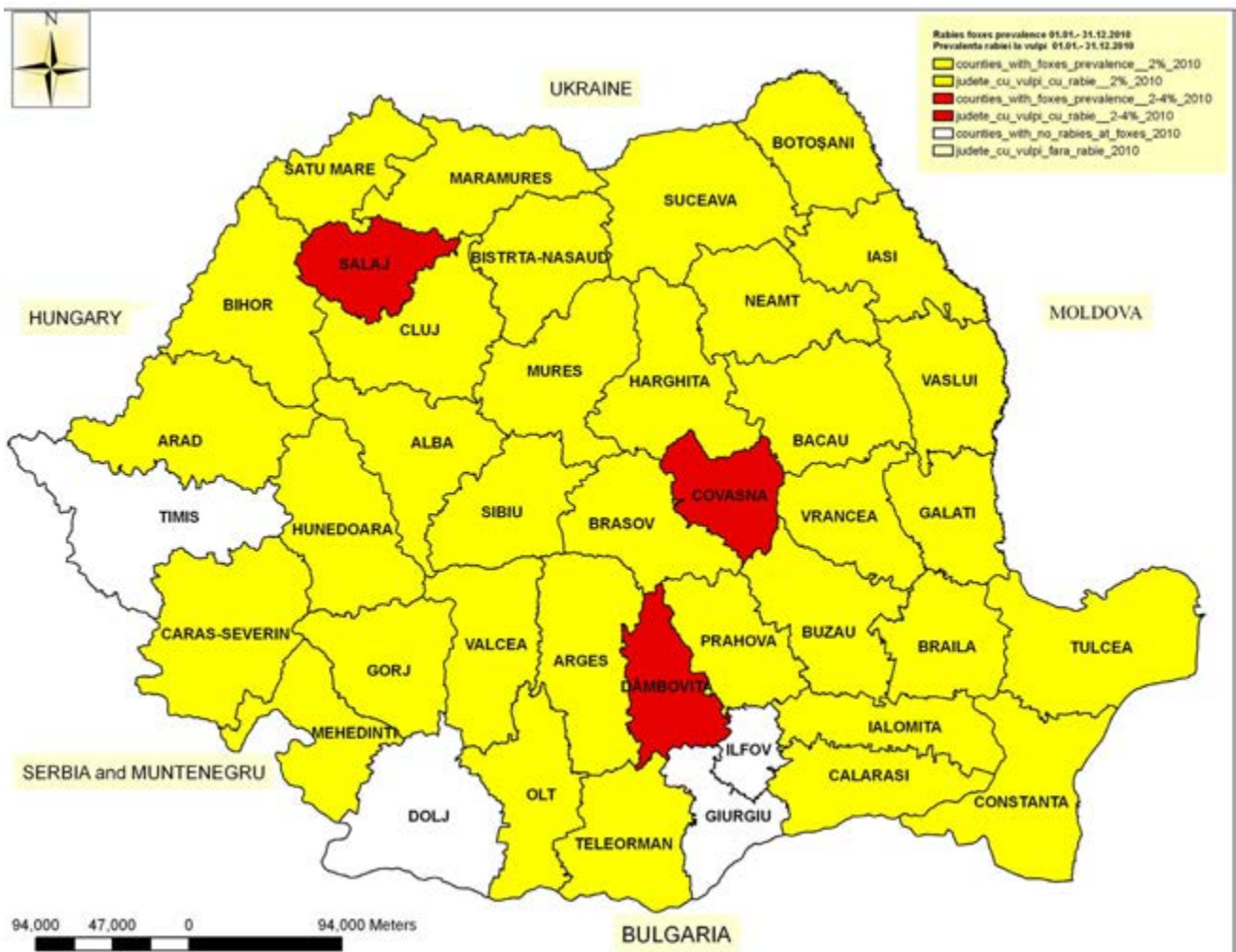


Diagram 3

### 3. Description of the programme

For 2012, the Programme of Monitoring, Control and Eradication of rabies will rule on the entire territory of Romania and it will be applied to the entire population of foxes.

Concerning the vaccination strategy adopted to the domestic animals, will be vaccinated dogs and cats from backyards and also emergency vaccination will be done only for domestic animals in the outbreaks.

To reducing the risk in wild populations, it will be considered also the wild dog populations in rural areas complied to fox vaccination program.

Its objectives will take into account that:

- rabies develops in Romania both in animal population wildlife, especially in foxes, wild dogs and also in domestic animals population;
- rabies develops endemically in foxes and other wild animals and occasionally in other animals;
- most cases of rabies in domestic animals have been recorded in dogs and cats. The situation is not casual if we consider that Romania has a very large number of stray dogs and cats;
- The Danube Delta, a unique biotope where wild animals live together with livestock, can be regionalized.

#### **The objectives of the programme will comprise:**

- **surveillance the prevalence of rabies in wild animal populations**
- **control of rabies in fox population in Romania**
- **monitoring of rabies in fox population in Romania**
- **vaccination effectiveness**

#### **Actions undertaken for the fulfillment of the objectives:**

- oral vaccination of wildlife in order to obtain an territory free of rabies;
- monitoring of evolution of rabies correlated with the plan for application of vaccination and the results obtained;
- control of the application of vaccination plans and evaluation of its effectiveness;
- collection of data, their proper registration, their statistic and informatics procession and their presentation in proper forms in order to be used in the practice of combating and eradication of rabies in Romania;
- compulsory vaccination of dogs and cats;
- identification and registration dogs and cats;
- control of the population of stray dogs and cats;
- monitoring movements of animals involved Regulation (EC) No 998/2003 on the animal health requirements applicable to the non-commercial movement of pet animals and amending Council Directive 92/65/EEC and Council Directive 92/65/EEC of 13 July 1992 laying down animal health requirements governing trade in and imports into the Community of animals, semen, ova and embryos not subject to animal health requirements laid down in specific Community rules

Oral vaccination of foxes will be carry out in two vaccination campaigns, in spring and autumn, by plane, 20 baits/ campaign/km<sup>2</sup>. Air distribution of baits will be adjusted with manual distribution, where the plane can not act In areas with significant surface water, the vaccination will be done manually.

After each campaign, 45 days later from baits administration, will be performed hunting for vaccine efficiency, shooting 4-8 foxes/campaign/100km<sup>2</sup>.

For monitoring, samples harvest from shooting foxes will be tested for post vaccination antibodies and tetracycline presence.

Rabies surveillance will be carrying out on samples from indicator animals (suspected, found dead or road kills).

#### **4. Measures provided in the submitted programme**

##### **4.1 Duration of the programme: 10 years**

First year: 2011

- Control
- Testing
- Vaccination

Last year: 2021

- Eradication
- Testing

##### **4.2 Organizing, surveillance and the role of all stakeholders involved in the programme**

The main institutions implicated in the application of the programme for control, monitoring and eradication of rabies are:

National Sanitary Veterinary and Food Safety Authority (NSVFSA), County Sanitary Veterinary and Food Safety Directorates (CSVFSA), Institute for Diagnosis and Animal Health (IDAH), National Administration of Forests, District Forest Ranges, Associations of Hunters and Fishers of Romania, Institute for Control of Biological Products and Medicines for Veterinary Use .

##### **National Sanitary Veterinary and Food Safety Authority**

The tasks of the central sanitary veterinary authority responsible are to supervise and coordinate the departments which implement the programme.

NSVSA is also responsible for assuring funds to cover the needs created by implementation of the programme.

At county level, responsible for the programme implementation are all the County Sanitary Veterinary and Food Safety Directorates.

NSVFSA, invested as Central Units for acquisition of services in view of foxes vaccination is responsible for organizing the tender and for monitoring and evaluation of vaccination efficacy, as well as the activity conducted by the society selected as winner of tender.

CSVFSD verify the transport and vaccine storage conditions, monitors the vaccine circulation within the territory, and controls the training of personnel in charge with vaccination.

##### **Institute for Diagnosis and Animal Health**

The main responsibilities are:

- Coordinate and administrate the testing capacity of the county laboratories, the training of personnel to apply the diagnosis methods;
- Coordinates the diagnostic activity for rabies;
- Draw up the epidemiological reports, based on the interpretation of the results regarding rabies;

- Being the National Reference Laboratory, cooperates with Community Reference Laboratory for rabies for typing and sub-typing of wild strain rabies viruses.

### **Institute for Control of Biological Products and Medicines for Veterinary Use**

The main responsibilities are:

- Authorizes, for commercialization, biological products used for immunization against rabies in Romania;
- Performs the quality control of all vaccine batches against rabies, accordingly with OIE Diagnostic Manual;
- Provides consultancy regarding biological products used for the immunization against rabies in Romania;

### **National Administration of Forests**

The main responsibilities are:

- Assures the maintenance of foxes population in reasonable limits within areas, by performing the seasonal hunting approved as a supplement to the already approved hunting quota; approve supplementary hunting quota outside the legal hunting season in the scope of sustaining the present Programme;
- Assuring, by the personnel from hunting ground, the achievement of sampling and transmission of the samples for accomplishing of laboratory surveillance for the diagnosis of rabies, according with the approved sampling programme and for the evaluation of post vaccinated immunization;
- Assures the functioning of the system for collecting, transport and neutralizing of cadavers.

National Administration of Forests estimates each year the fox population and establishes the annual the number of foxes proposed to be hunted (hunting quota).

### **Associations of Ranges, Hunters and Fishermen of Romania**

The main responsibilities are:

- Monitoring and evaluate the density of foxes population from Romania's hunting grounds;
- Monitoring and control the implementation of measures which are incumbent on the administrators of hunting grounds;
- Cooperates with CSVFSD for the implementation of the programme;

Associations of Rangers, Hunters and Fishermen of Romania organizes the hunting sessions following to the vaccination campaigns, assure the transport of the samples harvested by the personnel in charge with sampling at the level of CSFSD.

## **4.3 Descriptions and delimitation of geographical and administrative areas in which the programme is being implemented:**

The programme will rule on in all the country, taking into account the whole territory.

It will be taken into account the entire surface of approximately 237.000 km<sup>2</sup> in 2 campnies being distributed 20 vaccine-baits/km<sup>2</sup>. The surface covered by forests of the above mentioned a vaccination area is 62346 km<sup>2</sup>.

## Geographical delimitations by natural barriers in Romania

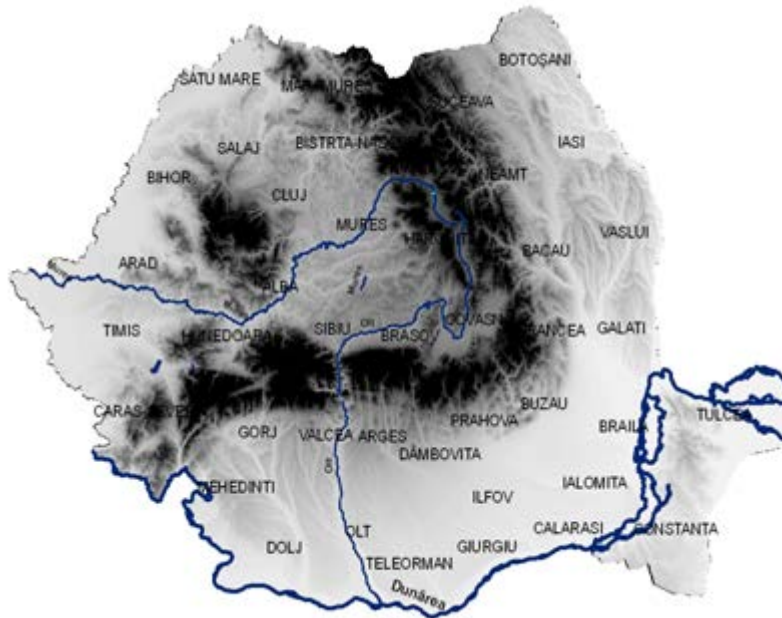


Diagram 5

-  ○ Carpathian Mountains Chain
-  ○ Rivers

### Rabies vaccination area for 2012

The vaccination area for 2012 will be the whole territory of the country, in 237.000 km<sup>2</sup> surface.



**Diagram no. 6**

#### **4.4 Description of the measures provided by this programme**

Rabies prophylaxis under legislative aspects in Romania is regulated by the following Orders and Laws:

- NSVFSA President Order No. 29/2008 for the approval of the sanitary veterinary norm regarding general measures for preventing and control of rabies in domestic and wild animals
- Government Decision No. 55/2008 for the approval of the programme for surveillance, control and eradication rabies in foxes

The Surveillance, control, and monitoring of domestic animals and wild animals for rabies makes the objective “The programme for the actions of surveillance, prevention and control of animal diseases, of those transmissible from animals to man, for protection of animals and environment” which is carried out yearly by the National Sanitary Veterinary and for Food Safety Authority; this programme is supplemented, everytime it is necessary, with epidemiological and risk analysis.

Accordingly with the above mentioned rules, in Romania, the vaccination and registration of domestic dogs and cats is compulsory.

Emergency vaccination of all domestic animals having contact with infected suspected animals is also compulsory.

##### **4.4.1 Disease notification**

Rabies is a notifiable disease in Romania, in accordance with the NSVFSA President Order No.79/2008.

The obligativity of disease notification comes to the free practice empowered practitioners which notify the official veterinarian about the rabies suspicions in the field. Rabies suspicion is notified from the field to SVFSD, and samples are sent to the county sanitary veterinary laboratory accredited and authorized for diagnosis.

The official vet responsible with animal health from county SVFSD, notifies the suspicion by a rapid communication mean to the director of Animal Health and Welfare Directorate from NSVFSA and also by using a notification report form, to NSVFSA all suspected cases of rabies.



Following to laboratory confirmation of rabies, the county SVFSD and of the Bucharest Municipality, will notify, using a notification report form, to NSVFSA all confirmed cases of rabies.

If rabies is confirmed in a domestic animal, the owner is also notified and a complete file is issued in view of applying the control measures, if necessary.

The situation concerning rabies cases is notified twice on a year to OIE and quarterly to the European Institute for Rabies Control.

#### **4.4.2. Target animals and animal population**

The target animals of this programme are the foxes. The population of the foxes for the year 2010 is estimated at 55906 animals (see Table no. 2 above).

#### **4.4.3. Identification of animals and registration of holdings - not applied**

#### **4.4.4. Qualifications of animals and herds - not applied**

#### **4.4.5. Rules on the movement of animals - not applied**

#### **4.4.6 Serological and virological tests used for the detection of rabies and the immune status in foxes before and after vaccination:**

The serological and **virological** tests used are in conformity with the standard manuals for the OIE diagnosis tests.

##### **i) Fluorescent antibody test**

The most widely used test for rabies diagnosis is the FAT, which is recommended by both WHO and OIE. This test may be used directly on a smear, and can also be used to confirm the presence of rabies antigen in cell culture or in brain tissue of mice that have been inoculated for diagnosis. The FAT gives reliable results on fresh specimens within a few hours in more than 95-99% of cases. The sensitivity of the FAT depends on the specimen (the degree of autolysis and how comprehensively the brain is sampled, on the type of lyssavirus and on the proficiency of the diagnostic staff. Sensitivity may be lower in samples from vaccinated animals due to localization of antigen, which is confined to the brainstem. For direct rabies diagnosis, smears prepared from a composite sample of brain tissue, which includes the brain stem, are fixed in high-grade cold acetone and then stained with a drop of specific conjugate. Anti-rabies fluorescent conjugates may be prepared in the laboratory. Those available commercially are either polyclonal conjugates specific to the entire virus or specific to the rabies nucleocapsid protein, or they may be prepared from a mix of different MAbs. In the FAT, the specific aggregates of nucleocapsid protein are identified by their fluorescence. The specificity and sensitivity of these anti-rabies fluorescent conjugates for locally predominant virus variants should be checked before use.

The FAT may be applied to glycerol-preserved specimens. If the specimen has been preserved in a formalin solution, the FAT may be used only after the specimen has been treated with a proteolytical enzyme. However, the FAT on formalin-fixed and digested samples is always less reliable and more cumbersome than when performed on fresh tissue.

##### **ii) Enzyme-linked immunosorbent assay**

Commercial kits are available for indirect ELISA that allow a qualitative detection of rabies antibodies in individual fox samples following vaccination. In accordance with the WHO recommendations, 0.5 IU per ml rabies antibodies is the minimum measurable antibody titer considered to represent a level of immunity that correlates with the ability to protect against rabies infection. The ELISA provides a rapid test that does not require handling of live rabies virus, to



determine if vaccinated foxes have sero-converted. Whereas the recommendations regarding the sampling fraction of foxes for the detection of antibodies is not provided in UE normative acts, 12900 animals have been proposed for examination in 2012 year.

**iii) Another test:**

**Tetracycline determination**

Tetracycline is a marker of bait uptake and provides a life-long marking of bones and teeth that is easily detected on post-mortem. It is innocuous for both target and non-target species and is very stable when incorporated into baits.

Determination of tetracycline uptake by direct U.V. microscopic examination of sections of bones and teeth provides an easy way of monitoring bait uptake and is especially useful when identifying other causes for vaccination failure.

**4.4.7 Vaccines used and vaccination schemes**

Live rabies vaccines used for oral vaccination of foxes should fulfill the requirements of the European Pharmacopoeia monographs as well as the efficacy and safety recommendations of the WHO. Vaccine titer at batch release should correspond to at least ten times the dose found to completely protect an experimental group (indicative 100% protective dose). The titer of the final vaccine in the bait should not fall below the indicative 100% protective dose following exposure to 25°C for seven days. Each vaccine batch should be tested and approved for titer and stability by an acknowledged quality control scheme according to OIE standards and WHO recommendations.

Laboratories involved in the monitoring and evaluation of rabies programme monitor the titer of all batches of rabies virus baits before and during release into the field.

The melting point of the bait casing should be above 40°C to ensure that the capsule of the vaccine is still covered if exposed to such temperatures in the field.

Vaccine producers should provide detailed information to the National Laboratories on the stability of baits to be used in the field.

The Community Reference Laboratory should perform additional tests or trials if required.

The use of tetracycline as a biomarker in the teeth and bones of foxes is recommended to evaluate bait-uptake in target species.

The vaccines against rabies which follow to be used in vaccination campaigns against rabies in foxes are presented as vaccine bites, administered by plane on the most important surface from the area established for vaccination, and manually, in zones where the administration by plane is not possible.

The used vaccines need to be immunogenic, harmless and produced for the main susceptible species at rabies, as well as to be used in most of the vaccination campaigns established during the year, no matter the weather conditions.

The oral vaccination of foxes is made by distributing by plane or by helicopter the vaccine baits (20 baits/km<sup>2</sup>), on smooth surfaces or in case of area where the access is burdened, and around the localities, is done manually (50 bites/km<sup>2</sup>), by the managers of the hunting founds, being assisted by the official vets. In areas with significant surface water, the vaccination will be done manually.

In order to be appropriate for use in Romania, the vaccines against rabies need to be authorized for commercialization in our country.

The authorization for commercialization is obtained in accordance with the NSVFSA Order no. 187/2007 regarding The Code of veterinary medical products, published in the Official Journal of Romania Part I, No. 804 bis/26.XI.2007 or in accordance with the Regulation 726/2004/EC for establishing the community procedures concerning authorization and surveillance of medicines for humans and for founding of an European Agency for medicines, published in J.O. Nr. L 136, 30.04.2004.

The authorization conditions for vaccine against rabies are:

- To contain live attenuated vaccine strains;
- To be intended for oral immunization of foxes;
- To be able to be distributed by plane/helicopter;

At delivery, every vaccine series need to be accompanied by the Official Analysis report, in accordance with the request of EDQM (European Directorate for Quality Medicine).

The number of vaccination campaigns, the vaccination scheme and the way in which vaccination is effectively done are described in the 3-rd chapter: “The description of the programme” and 7.3.2. “Data on the vaccination programme in foxes”

Responsible for the vaccination campaigns is General Sanitary Veterinary Directorate, at central level, and county sanitary veterinary directorates, at local level.

For the vaccination of livestock (dogs, cats and other domestic animal), the vaccine it is used in accordance with national legislation and Comunitary legislation.

Vaccination of the domestic carnivore (dogs and cats) – each animal must be vaccinated against rabies from the age of the three months with yearly revaccination according with the NSVFSA President Order No.29/2008 for the approval of the sanitary veterinary norm regarding general measures for preventing and control of rabies in domestic and wild animals and Commission Decision 94/275/EC on recognizing rabies vaccines.

Prophylactic vaccination of dogs and cats in backyards and dogs from the sheepfold with inactivated vaccine is made by organizing mass vaccination campaigns, annual autumn-winter period, followed by completing vaccination.

Vaccination of domestic animals in the outbreak is done according to the national legislation in force.

#### **4.4.8. Information and assessment on bio-security measures management and infrastructure) in place in the holdings involved- not applied**

#### **4.4.9. Measures in case of a positive result**

When a rabies cases is confirmed in domestic or wild animals, are applied specific control measures, in accordance with the NSVFSA President Order No. 29/2008.

For these cases is applied the following procedure:

##### **A. Measures applied in case of rabies confirmation in animals from a holding, locality, zone**

After rabies confirmation, the county SVFSD acts as follows:

- a) perform the epidemiological enquire ;
- b) establishes the protection and the surveillance zones;
- c) issues the control plan with deadlines and responsibilities;

The control measures in the protection zone include:

- drawing up the epidemiological maps;

- killing of carnivores which were bitten or scratched by sick animals, if they were not vaccinated against rabies, or if they have less than 21 days since first vaccination,
- isolation by the rest of the animals of the vaccinated carnivores which have been bitten or scratched by the sick animal;
- placement under observation of all animals from that holding for 14 days, beginning with the contact moment ;
- killing of all animals from that holding, in case when they manifest clinical signs in this period of time; animals which did not manifest clinical signs of rabies, are released from observation;
- inspection of the carnivores from the protection zone which have been bitten or scratched by the sick animal are made by the free practice empowered, for 14 days, and, if they don't show clinical signs are released from the observation;
- interdiction of animal movement for animal which were under observation.

The control measures in the surveillance zones include:

- a census for all dogs and cats;
- vaccination of dogs and cats with inactivated vaccine;
- surveillance and movement control of dogs and cats.

## **B. Measures applied in the hunting founds, in case when rabies is confirmed in wild animals**

When rabies is confirmed, the county SVFSD and that of Bucharest Municipality take the following measures:

- a) perform the epidemiological enquire ;
- b) establishes and declare the infected area ;
- c) Ask to the managers of the hunting founds to evaluate the wild animal population, especially of the foxes;
- d) released the control measures plan with deadlines and responsibilities;
- e) release and implement a vaccination programme for foxes ;
- f) ask for organization of hunting campaigns for foxes, without using hunting dogs ;
- g) order the banning of skinning wild animals killed or found dead.

### **4.4.10. Compensation scheme for owners of slaughtered and killed animals**

Rabies is included on the list of the disease for which the government assures the compensation of farmer's losses in case of appliance of the control measures

Compensation for the killing of infected animals and animals which represent sources of contamination and also compensation for animals killed or affected in some other way in the process of killing on the infected premises are covered in Government Decision (GD) No. 1214/2009 with subsequent amendments.

This GD is under modifying now, having regard that the compensation of losses for owner will be done in the future by NSVFSA founds, and not from Ministry of the Agriculture, Forestry and Rural Developments founds as so far.

Government Decision No. 1214/2009 specifies the beneficiaries of the compensation (under art. 4), the method of compensation and the source of the funds for disease control operations and describes the basis for this calculation (covered in art. 4 and Appendix no. 2).

Appendix no. 1 of Government Decision No. 1214/2009 presents the list of diseases for the eradication of which compensation payments are granted.

The compensation will be paid to the owner, by the market value, for the animals killed on suspicion, following, as well as for animal by-products and materials which have been seized and destroyed (direct expenses).

#### **4.4.11 Control of the implementations of the programme and reporting**

The control of implementing the programme is made by the NSVFSA by the Directorate for Checks and Border Inspection Post (BIP) Coordination, in accordance with the provisions of the National Programme for Checks, approved through NSVFSA President Order.

At the level of county SVFSD, the control is performed by sanitary veterinary official officers from the service for checks, in collaboration with the official veterinarian from animal health service and sanitary veterinary zonal office who draw up reports concerning the fulfillment of the programme. These reports about surveillance shall be sent towards the central veterinary authority and to the Institute for Diagnosis and Animal Health.

### **5. Benefits of the programme**

The effective completion of the programme for control and monitoring of rabies in Romania will reduce the spreading chances of rabies in wild and domestic animal population, eliminating the risk of rabies transmission to humans and allowing our country to grant the free of rabies status.

## 6. Data on the epidemiological evolution during the last five years

### 6.1. Evolution of the disease - not applied

### 6.2. Stratified data on surveillance and laboratory tests

All serological and virological tests are performed according to the diagnostic manual of the EU

#### Description of the used serological tests:

1. ELISA test for antibody detection.

#### Description of the used virological tests:

1. Direct Immunofluorescent

#### Other test

1. Histological test

### 6.2.1. Stratified data on surveillance and laboratory tests

**Years:** 2006-2010

Disease: Rabies

**Species :** Foxes

<b>Romania</b>	Serological tests		Virological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2006	Not applied	Not applied	829	203	151	78
2007	Not applied	Not applied	823	321	260	168
2008	17	2	964	951	871	550
2009	275	25	1173	404	518	248
2010	30	0	989	319	517	197

Years: 2006-2010

Desease: Rabies

Species : **Other wild animals**

<b>Romania</b>	Serological tests		Virological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2006	Not applied	Not applied	120	18	68	7
2007	Not applied	Not applied	58	10	34	5
2008	Not applied	Not applied	67	26	40	14
2009	Not applied	Not applied	48	17	25	10
2010	Not applied	Not applied	48	19	27	9

Years: 2006-2010

Desease: Rabies

Species : **Dogs**

<b>Romania</b>	Serological tests		Virological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2006	Not applied	Not applied	356	27	237	21
2007	Not applied	Not applied	269	47	200	26
2008	Not applied	Not applied	396	43	280	28
2009	Not applied	Not applied	287	38	194	19
2010	Not applied	Not applied	215	46	137	24

Years: 2006-2010

Desease: Rabies

Species : **Cats**

<b>Romania</b>	Serological tests		Virological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2006	Not applied	Not applied	96	19	63	14
2007	Not applied	Not applied	84	36	47	15
2008	Not applied	Not applied	157	60	86	30
2009	Not applied	Not applied	97	29	64	15
2010	Not applied	Not applied	67	25	41	14

Years: 2006-2010

Desease: Rabies

Species : **Other domestic animals**

<b>Romania</b>	Serological tests		Virological tests		Other tests	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2006	Not applied	Not applied	424	27	258	15
2007	Not applied	Not applied	430	49	333	34
2008	Not applied	Not applied	470	58	471	33
2009	Not applied	Not applied	353	48	287	21
2010	Not applied	Not applied	261	65	198	31

### 6.3. Data on infection (one row per year)

Years: 2006 – 2010

Disease: Rabies

Animal Species: **Domestic animals**

Romania <sup>(b)</sup>	Number of herds infected	Number of animals infected
2006	73	73
2007	132	132
2008	161	161
2009	93	115
2010	100	136

Years: 2006 – 2010

Disease: Rabies

Animal Species: **Foxes**

Romania <sup>(b)</sup>	Number of herds infected	Number of animals infected
2006	Not applied	203
2007	Not applied	321
2008	Not applied	951
2009	Not applied	404
2010	Not applied	319



#### 6.4. Data on the status of herds at the end of each year - not applied

#### 6.5. Data on vaccination programmes - not applied

#### 6.6. Data regarding the number of foxes in Romania

##### 6.6.1. Estimation of fox population: 2010

###### Estimation method:

Annually, the State Forestry Services of Romania, by specific methods, estimates the fox population and set up the hunting quota. The counting of foxes is carried out in winter and early spring by the identification of sets, direct observations on certain areas and holdings and blind running.

Hunting of foxes takes place during the whole year, but the main part takes place in the winter.

Year: 2010

Nr.	Counties	Hunting grounds(km <sup>2</sup> )	Foxes number
1	ALBA	5873	2649
2	ARAD	7431	1974
3	ARGES	6419	2054
4	BACAU	6125	818
5	BIHOR	7006	1719
6	BISTRITA-NASAUD	4969	1067
7	BRASOV	4491	1867
8	BRAILA	4630	476
9	BOTOSANI	4492	1812
10	BUZAU	5736	1141
11	CARAS-SEVERIN	8274	2002
12	CALARASI	4837	559
13	CLUJ	5994	2671
14	CONSTANTA	6583	376
15	COVASNA	3704	725
16	DAMBOVITA	3686	991

17	DOLJ	6931	1522
18	GALATI	4183	454
19	GIURGIU	3274	445
20	GORJ	4972	548
21	HARGHITA	5939	1562
22	HUNEDOARA	6764	2193
23	IALOMITA	4244	590
24	IASI	5188	1575
25	ILFOV	1577	273
26	MARAMURES	5857	1162
27	MEHEDINTI	4817	919
28	MURES	6398	3218
29	NEAMT	5359	1638
30	OLT	4920	784
31	PRAHOVA	4112	1215
32	SALAJ	3541	876
33	SATU-MARE	3978	1470
34	SIBIU	5217	1815
35	SUCEAVA	7862	3229
36	TELEORMAN	5631	819
37	TIMIS	8272	2777
38	TULCEA	5987	1001
39	VASLUI	4776	1310
40	VALCEA	5292	985
41	VRANCEA	4543	625
	<b>TOTAL</b>	<b>219.884</b>	<b>55.906</b>

Table no. 2

## 6.6.2. Monitoring of wildlife

Years: 2006 – 2010

Disease: rabies

Animal Species: **Foxes**

Description of the used serological tests:

2. ELISA test for antibody detection.

Description of the used virological tests:

3. Direct Immunofluorescent

Alte teste

3. Tetracycline detection

All serological and virological tests are performed according to the diagnostic manual of the EU

Romania	Serological tests (ELISA)		Virological tests (FAT)		Other tests (T.T.C)	
	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples	Number of samples tested	Number of positive samples
2006	Not applied	Not applied	829	203	Not applied	Not applied
2007	Not applied	Not applied	823	321	Not applied	Not applied
2008	17	2	964	951	20	3
2009	275	25	1173	404	275	18
2010	30	0	989	319	30	0

## 6.6.3 Data on the vaccination programme in foxes

Year: 2006-2010

Disease: Rabies

Animal Species: **Foxes**

In Romania a complete vaccination by plane distribution of foxes was never done, the only way of vaccination so far being by manually distribution of bites at den.

In the year 2010 the National Authority for Sanitary Veterinary and Food Safety has issued "Public procurement tender documentation of rabies vaccine baits in the form of vaccine and its distribution related services" that was posted in the electronic procurement system.

For the public purchase of antirabies baits and airway distribution, the tender process established one winner for each procedure.

There has been formulated one complaint and presented to the National Council for Solving Complaints; the court of law should pronounced its decision (accept or reject the complaint), for this reason Romania could not fit the right period attributed for the vaccination against Rabies.

## 7. Objectives

### 7.1. Targets related to testing

#### 7.1.1. Target on diagnostic test:

Region :	Type of test:	Target population:	Type of sample:	objective:	Number of planned tests
41 counties	1. F.A.T	Foxes	brain	Monitoring of rabies virus in the indicator animals	14935
	2. E.L.I.S.A (antibody level)	Foxes	Liquid thoracic and blood serum	Monitoring of post vaccinated antibody	12900
	3. Detection tetracycline test (T.T.C)	Foxes	bones and teeth (mandible)	Monitoring of the tetracycline marker	12900
<b>Total</b>					<b>14935</b>

**Disease: Rabies**

**Animal species: foxes**

#### Number of testes on counties

No.	County	Virological Tests		Serological tests		Others	
		1.F.A.T.		2. E.L.I.S.A (antibody level)		3. U.V (tetracycline marker)	
		Sample no.	Positive cases	Sample no.	Positive cases	Sample no.	Positive cases
1	ALBA	550		500		500	
2	ARAD	500		450		450	
3	ARGES	500		450		450	
4	BACAU	250		200		200	
5	BIHOR	500		450		450	
6	BISTRITA-NASAUD	460		400		400	
7	BOTOSANI	480		450		450	
8	BRAILA	170		130		130	
9	BRASOV	500		450		450	
10	BUZAU	300		250		250	
11	CARAS-SEVERIN	470		400		400	
12	CALARASI	180		150		150	
13	CLUJ	500		450		450	
14	COSTANTA	350		300		300	
15	COVASNA	200		180		180	

16	DAMBOVITA	350		200		200	
17	DOLJ	320		300		300	
18	GALATI	150		130		130	
19	GIURGIU	150		130		130	
20	GORJ	200		170		170	
21	HARGHITA	455		400		400	
22	HUNEDOARA	530		500		500	
23	IALOMITA	200		170		170	
24	IASI	350		300		300	
25	ILFOV	80		50		50	
26	MARAMURES	565		500		500	
27	MEHEDINTI	400		350		350	
28	MURES	570		500		500	
29	NEAMT	360		300		300	
30	OLT	250		200		200	
31	PRAHOVA	250		200		200	
32	SATU-MARE	360		310		310	
33	SALAJ	250		200		200	
34	SIBIU	500		450		450	
35	SUCEAVA	680		600		600	
36	TELEORMAN	250		200		200	
37	TIMIS	600		550		550	
38	TULCEA	280		230		230	
39	VASLUI	410		350		350	
40	VALCEA	260		200		200	
41	VRANCEA	255		200		200	
	<b>TOTAL</b>	<b>14935</b>		<b>12900</b>		<b>12900</b>	

**Disease:** Rabies

**Animal species: Other wild animals**

<b>Region :</b>	<b>Type of test:</b>	<b>Target population:</b>	<b>Type of sample:</b>	<b>objective:</b>	<b>Number of planned tests</b>
<b>Romania</b>	F.A.T.	Other wild animals	brain	Monitoring of rabies virus	300
<b>TOTAL</b>					<b>300</b>

**Disease:** Rabies

**Animal species: Other domestic animals**

<b>Region :</b>	<b>Type of test:</b>	<b>Target population:</b>	<b>Type of sample:</b>	<b>objective:</b>	<b>Number of planned tests</b>
<b>Romania</b>	1. F.A.T.	Dogs	brain	Monitoring of rabies virus	400
		Cats	brain	Monitoring of rabies virus	175
		Other domestic animals	brain	Monitoring of rabies virus	425
<b>Total</b>					<b>1000</b>

### 7.1.2. Targets on testing herds and animals- not applied

### 7.2. Targets on qualification of herds and animals- not applied

### 7.3. Targets on vaccination or treatment

#### 7.3.1. Targets on vaccination or treatment - not applied

#### 7.3.2 Data on the vaccination programme in foxes

Year: 2012

Disease: Rabies

##### Vaccination by aerial distribution

Nr.	Counties	Km <sup>2</sup>	Aerial distribution		
			Number of doses (baits)/km <sup>2</sup>	Number of campaigns	Total number of doses (baits) /county
1	ALBA	5873	20	2	234.880
2	ARAD	7431	20	2	297.240
3	ARGES	6419	20	2	256.760
4	BACAU	6125	20	2	244.520
5	BIHOR	7006	20	2	280.200
6	BISTRITA-NASAUD	4969	20	2	198.720
7	BRASOV	4491	20	2	179.640
8	BRAILA	4630	20	2	185.200
9	BOTOSANI	4492	20	2	203.960
10	BUZAU	5736	20	2	229.440
11	CARAS-SEVERIN	8274	20	2	330.960
12	CALARASI	4837	20	2	193.480
13	CLUJ	5994	20	2	239.760
14	CONSTANTA	6583	20	2	263.320
15	COVASNA	3704	20	2	148.160
16	DAMBOVITA	3686	20	2	147.400

17	DOLJ	6931	20	2	277.240
18	GALATI	4183	20	2	167.320
19	GIURGIU	3274	20	2	170.960
20	GORJ	4972	20	2	198.880
21	HARGHITA	5939	20	2	237.560
22	HUNEDOARA	6764	20	2	270.560
23	IALOMITA	4244	20	2	169.760
24	IASI	5188	20	2	207.520
25	ILFOV	1577	20	2	63.080
26	MARAMURES	5857	20	2	234.280
27	MEHEDINTI	4817	20	2	192.680
28	MURES	6398	20	2	255.920
29	NEAMT	5359	20	2	214.360
30	OLT	4920	20	2	196.800
31	PRAHOVA	4112	20	2	164.480
32	SALAJ	3541	20	2	159.120
33	SATU-MARE	3978	20	2	141.640
34	SIBIU	5217	20	2	208.680
35	SUCEAVA	7862	20	2	314.480
36	TELEORMAN	5631	20	2	225.200
37	TIMIS	8272	20	2	330.880
38	TULCEA	5987	20	2	239.480
39	VASLUI	4776	20	2	211.680
40	VALCEA	5292	20	2	191.040
41	VRANCEA	4543	20	2	181.720
	<b>TOTAL</b>	<b>219.884</b>	<b>20</b>	<b>2</b>	<b>8.860.000</b>

### Vaccination by manual distribution

No	Counties	Km <sup>2</sup>	Manual distribution		
			Number of doses (baits)/km <sup>2</sup>	Number of campaigns	Total number of doses (baits) /county
1	ALBA	5873	25	2	3.114
2	ARAD	7431	25	2	3.940
3	ARGES	6419	25	2	3.403
4	BACAU	6125	25	2	3.242
5	BIHOR	7006	25	2	3.715
6	BISTRITA-NASAUD	4969	25	2	2.635
7	BRASOV	4491	25	2	2.382
8	BRAILA	4630	25	2	2.455
9	BOTOSANI	4492	25	2	2.704
10	BUZAU	5736	25	2	3.042
11	CARAS-SEVERIN	8274	25	2	4.388
12	CALARASI	4837	25	2	2.565
13	CLUJ	5994	25	2	3.179
14	CONSTANTA	6583	25	2	3.491
15	COVASNA	3704	25	2	1.964
16	DAMBOVITA	3686	25	2	1.954
17	DOLJ	6931	25	2	3.676
18	GALATI	4183	25	2	2.218
19	GIURGIU	3274	25	2	2.267
20	GORJ	4972	25	2	2.637
21	HARGHITA	5939	25	2	3.150
22	HUNEDOARA	6764	25	2	3.587
23	IALOMITA	4244	25	2	2.251



24	IASI	5188	25	2	2.751
25	ILFOV	1577	25	2	836
26	MARAMURES	5857	25	2	3.106
27	MEHEDINTI	4817	25	2	2.555
28	MURES	6398	25	2	3.393
29	NEAMT	5359	25	2	2.842
30	OLT	4920	25	2	2.609
31	PRAHOVA	4112	25	2	2.181
32	SALAJ	3541	25	2	2.110
33	SATU-MARE	3978	25	2	1.878
34	SIBIU	5217	25	2	2.767
35	SUCEAVA	7862	25	2	4.169
36	TELEORMAN	5631	25	2	2.986
37	TIMIS	8272	25	2	4.387
38	TULCEA	5987	25	2	3.175
39	VASLUI	4776	25	2	2.805
40	VALCEA	5292	25	2	2.532
41	VRANCEA	4543	25	2	2.409
	<b>TOTAL</b>	<b>219.884</b>	<b>25</b>	<b>2</b>	<b>117.450</b>

The manually distribution is made around localities (25 momeli/km<sup>2</sup>), by the managers of the hunting areas with the official veterinarian.

## 8. Detailed assessment of programme's costs:

Costs related to the following measures:	Task books	Number of doses (pieces of bait)/sample	Unitary cost in EURO	Total amount in EURO	Community finances required (yes/no)
1. Tests					
1.1. Cost of analyses	FAT	16235	20	324700	yes
	ELISA	12900	12	154800	yes
	T.T.C	12900	3.6	46460	yes
1.2. Cost of wild animals sampled		14935	12	179220	yes
1.3. Other costs					
2. Vaccination					
2.1. Buying of baits		8.977.450	0.30	2693235	yes
2.2. Distribution costs	manual	117.450 doses/50000 km <sup>2</sup>	0.35	41107.5	yes
	aerial	8.860.000 doses/219884 km <sup>2</sup>	0.35	3076500	yes
2.3. Vaccination of livestock					
cattle	Administration of rabies vaccine	3000	1.30	3900	yes
	Parenteral vaccine costs	3100	0.7	2170	yes
equine	Administration of rabies vaccine	2150	1.30	2795	yes
	Parenteral vaccine costs	2200	0.7	1540	yes
Sheep/goats	Administration of rabies vaccine	15000	0.7	10500	yes
	Parenteral vaccine costs	15200	0.7	10640	yes
pigs	Administration of rabies vaccine	2000	2.45	4900	yes
	Parenteral vaccine costs	2150	0.7	1505	yes
2.3. Administrative costs				50000	yes

2.4.Control costs				50000	yes
2.5.Storage costs				10000	yes
3. Sacrificiation and destruction					
3.1.Compensation of animal				30000	yes
3.2.Sample transport costs				15000	yes
3.3.Distruction expenses				20000	yes
3.4.Losses in case of slaughtering					
4. Cleaning and disinfection				30000	yes
5.Remuneration					
6. Disposable materials and special equipments				20000	yes
7. Other costs					
<b>Total</b>				<b>6778972.5</b>	<b>yes</b>