

## ***Legislative and institutional framework for the protection of native (autochthonous) breeds in Republic of Croatia***

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The protection of Croatian native breeds and varieties is covered by many Institutions and Acts.

*The Ministry of Agriculture, Fishery and Rural development* addresses the issue through several responsible units: Department for Veterinary Science; Department of Agriculture; Department for Agricultural Policy, EU and International Relations; Department for Sustainable Rural Development and Direction for SAPARD/IPARD programme, Department for Market and Structural Support in Agriculture, Fishery and Rural Development and Department for Inspectional Affairs.

*The Ministry of Environmental Protection, Physical Planning and Construction* governs the same issues through the Directorate for Atmosphere and Waste Management, Directorate for Environmental Assessment and Industrial Pollution, Directorate for the European Union, Directorate for International Cooperation and Sustainable Development, Directorate for Physical Planning, Inspectional Affairs etc. In 2002 the Ministry also developed the National Environmental Protection Strategy (Official Gazette No.46/2002).

In October 2002 the *State Institute for Nature Protection* was set up by the Government Decree, as the main institution responsible for specialized nature protection related activities in Croatia. The Institute represents the central expert body which collects and processes data on nature and all the factors affecting nature, in a systematic and coordinated manner. This data serves as a basis for creating and planning nature protection policy.

The Government has also founded the *Croatian Environment Agency* and the *Environmental Protection and Energy Efficiency Fund* which, within the scope of their activities, provide support to programmes dealing with protection of native breeds and varieties, and protection of rural and traditionally anthropogenized areas.

*Scientific and expert institutions* are also involved in nature protection by conducting research and gathering data for scientific analysis. These, for example, include Faculty of Science,

Faculty of Agriculture, Faculty of Veterinary Medicine, Faculty of Forestry, Croatian Agriculture Agency, the Croatian Centre for Horse breeding – State Stud Lipik, Croatian Centre for Livestock Reproduction and others.

Scientific and education institutions have significant function in implementation of conservation programmes for native breeds. Scientific institutions significantly participate in design and development of the conservation programs, while education institutions in higher degree are integrated in processes of education of specialized groups (breeders) and general public. Their tasks and activities are completed and overlapped with other forms of activities from other sectors, and in that way, scientific institutions contribute to better efficiency of conservation programmes. Scientific institutions carry out various activities:

- inventorying, characterization and design of breed standard;
- definition of breeds on level of phenotype and genetic structures;
- critical analysis of correlations between breeds, breeders, environment and consumers;
- design of breeding programs, mating plan and connection *in situ* and *ex situ* programs;
- implementations of new scientific knowledge in area of conservative strategy,
- participation in activities of monitoring and designing action (crisis) plans ;
- promotions of breeds ;
- connection of stakeholders on conservation activities on national, regional and global level.

Importance of integration of scientific institutions in programs of conservation of native breeds has been confirmed in the Croatia through many examples. Through activities in inventorying and characterization of native breeds, scientific institutions are included in initiation of conservation programs of almost all native breeds. Implementation of systematically measurement resulted in clear determination of breed standard (on level of phenotype - morphometry, productivity) as well as their genetic structure. In that way, their genetic value became visible, and acquired starting point for monitoring of conservation programs efficiency. Observations originated through inventorying are integrated in conservation plans as well in the model of monitoring efficiency. Scientific institutions through experience on national, regional and global level connect different interest subjects, especially when regarding native transboundary breeds. Scientific institutions are responsible for development and integration of new knowledge in conservation programmes.

Educational institutions are included in conservation programs of native and protected breeds through education of different interest categories (younger and older population, breeders etc). Our experience indicates the need of building public attitude about importance of the conservation of native breeds. We need to permanently inform our school children about value and importance of native breeds through various information and educative contents (food production, national heritage, permanent care of rural area, etc.). General public and breeders need to know basic information about requirements and care methods of native genotypes, about specific breed characteristic, traditional production systems, and especially their impact on environment. Therefore, basic missions of educational institutions in programs for conservation of farm genetic resources are:

- informing the general public about values and the importance of conservation of native breeds,
- education of farmers regarding implementation of conservation programs of native breeds.

In addition, in Croatia there are about 200 nongovernmental organisations that are active in the field of nature and environmental protection, a third of which are registered in Zagreb. A whole range of these organisations are specialised in breeding specific native breeds. Also, there are many individuals who collect and breed native forms of domestic animals as well as old taxa of fruit-trees, vegetables and grains.

*Breeding organizations* (associations, unions) actively participate in breeding selection work, representing the interests of the breeders of native (autochthonous) and protected breeds of domestic animals. They participate in establishing and implementing the breeder's programmes and action plans, cooperate with state administration and public institutions, suggest research programmes, promote the breed, develop economic utilization programmes, and cooperate with similar organizations on national and international level. They designate competent authorities, head of the breeding programme, regular inspection commissions, selection and assessment of the heads at shows and manifestations. When all conditions are met, breeding organizations keep herd-books and assist in updating the central database run by the Croatian Agricultural Agency, or, when it comes to horses and donkeys, the Croatian Centre for Horse Breeding- State Stud Farm Lipik.

There are currently 31 breeding organizations in the Register of Breeders of Breedable Animals in the Republic of Croatia, among which there are most of autochthonous and protected breeds of domestic animals.

Also some *Public Institutions and NGOs* developed some specific programmes which are most desirable in the wider context of protection.

*BED (Brod Ecological Society)*, in cooperation with the Public Institution for the Management of Protected Natural Values in the Area of the Brodsko-posavska County, developed a project concerning the protection and improvement of protected landscape of Gajina (the protected landscape in the eastern part of the County Brodsko-posavska in the Sava river flood area). The project includes the purchase of native breeds of Slavonian podolian cattle, Posavac horse and black Slavonian pig, which is currently under way. These animals will be used to start the breeding process, maintain traditional way of grazing and exert positive influence on the landscape in terms of maintaining biological biodiversity and eliminating invasive species. It has also been planned to include local population in order to support economic development and provide conditions for rural tourism.

*The Nature Park Lonjsko polje* – have purchased a herd of podolian cattle from the Centre for Reproduction aiming to help preserve this threatened native animal breed. They have also recognized the cattle breed's important role in preventing the spread of *Amorpha (Amorpha fruticosa)*. Within their educational programme titled "Autochthonous breeds in the Lonjsko polje Nature Park", they promote the Posavac horse in a specially designed educational leaflet, as well as the Turopolje pig and the Posavina pointer. In agreement with breeders, there are many herds of the Posavac horse grazing in the park. There is also a parent flock of the Turopolje pig which dwells in the park area. In agreement with interested breeders, it is possible to stipulate a contract to borrow pigs to start a new breeding line and offspring. The agro-environmental study of the area has also been prepared.

*The Nature Park Kopački rit*, in cooperation with ARK Nature, started a project which includes the purchase of Slavonian Sarmatian podolian cattle and Posavac horses, aiming to preserve the Danube area landscape by grazing. In order to form parent herds, it is planned to purchase 24 individuals per breed. The project also includes a set of activities related to sustainable development. These examples represent just a small segment of needs and activities which should be carried out in the entire territory of Croatia in order to create basic and solid conditions for the conservation of native breeds of domestic animals. The issues that still remain unsolved include mountain pastures in highland Croatia, island pastures, and other landscapes and ecosystems rich in biodiversity our country is famous for.

Regulations in force in the Republic of Croatia that have an impact on the preservation and protection of the autochthonous breeds of domestic animals are:

- *Act on Ratification of the Convention on Biological Diversity* (OG- International Treaties 6/96) by which the Convention on Biological Diversity signed at the UN Conference on Environment and Development in Rio de Janeiro on June 1992 was adopted.
- *Livestock Act* (OG 70/97, 36/98, 156/03, 132/06) which lays down the rules regarding the rearing and production of breedable animals, impregnating of domestic animals, trade with breedable animals, zoo hygienic conditions in keeping the domestic animals, establishment and implementation of breedable animals and other issues important for efficiency and livestock promotion.
- *Veterinary Act* (OG 41/07, 155/08) which lays down the rules regarding the protection of animal health, implementation of veterinary public health measures, improvement of animal reproduction, veterinary environment protection, official controls and inspectional supervision in the field of veterinary.
- *Animal Protection Act* (OG 135/06) which lays down the responsibilities, obligations and duties of natural and legal persons for the protection of animals, which includes the protection of their lives, health and welfare; treatment of animals; conditions to be met regarding the protection of animals while keeping them, breeding them, transporting them, during experiments, slaughter and killing of animals, retaining them in zoological gardens, in circuses, shows and animal competitions, while selling of pets and treatment of abandoned and lost animals.
- *Food Act* (OG 46/07, 155/08) which lays down the foundation for ensuring the high level of protection of human health and consumer interests, including the traditional products, ensuring the efficient functioning of the market and procedures supporting the decision making regarding the health regularity of food and animal feed.
- *Act on Designation of Origin, on Geographical Indications and Traditional Specialities Guaranteed of Agricultural Products and Foodstuffs* (OG 84/08, 75/09, 107/09) which lays down the rules regarding the protection of the designation of origin and of the geographical indications of agricultural products and foodstuffs on the national level, and the area of application regarding the designation of origin and geographical indications.
- *Nature Protection Act* (OG 70/05, 139/08) which lays down the system of protection and conservation of nature and its values, where nature, in terms of the present Act, means overall biological and landscape diversity.
- *Forest Act* (OG 140/05, 82/06, 129/08) which lays down the rules regarding the cultivation, protection, utilization and management of forest and forest lands as natural resources in order to maintain the biological diversity and to insure the economic sustainability, social responsibility and ecological acceptability.
- *Strategy and Action Plan for the Protection of Biological and Landscape Diversity of the Republic of Croatia* (OG 81/99, 143/08) which is the basis for the environment protection, which determines long term goals and guidelines to conserve the biological and landscape diversity of protected species, and the manner of its implementation in accordance to the overall economical, social and cultural development of the Republic of Croatia.
- *Agriculture Act* (OG 149/09) which lays down the goals and agricultural policy measures, beneficiaries, activities of agricultural holding, sustainable development of agriculture, institutional support, administrative monitoring and reporting in agriculture, administrative and inspectional supervision.

- *Act on State Support in Agriculture and Rural Development* (OG 83/09, 153/09) which lays down the types of state support in agriculture and rural development, conditions to be met and state support beneficiaries.
- *Agricultural Land Act* (OG 152/08, 21/10) which lays down the rules regarding protection, utilization and change of allocation of agricultural land, disposing of agricultural land being owned by the Republic of Croatia.
- *Genetically Modified Organisms Act* (OG 70/05, 137/09) which lays down the rules of procedure with the GMOs, transboundary transfer of GMO products containing or originating from GMO.
- *Ordinance on Recognition Procedure of New Breeds, Strains and Hybrids* (OG 164/04) which lays down the rules of approving and testing of new breeds, strains and hybrids of domestic animals, the manner of application for the recognition of new breeds, strains and hybrids and responsibilities of applicants.
- *List of Autochthonous and Protected Breeds and Strains of Domestic Animals and their necessity Number* (OG 127/98, 73/03, 39/06, 126/07, 70/09) which defines autochthonous and protected breeds and strains of domestic animals originating in the Republic of Croatia, including:

<b>Species</b>	<b>Breed</b>
Cattle	Slavonian Syrmian podolian cattle
	Istrian cattle
	"Busha" cattle
Horse	Croatian Posavac
	Croatian cold blood horse
	Međimurje horse
	Lipizzaner
Donkey	Istrian donkey
	Littoral Dinaric donkey
	North Adriatic donkey
Sheep	Tzigai sheep
	Cres island sheep
	Dalmatian "pramenka"
	Ruda (Dubrovnik) sheep
	Istrian sheep
	Krk island sheep
	Lika "pramenka" sheep
	Pag island sheep
	Rab island sheep
Goat	Croatian spotted goat
	Croatian white goat
Pig	Black Slavonian pig
	Turopolje pig
Poultry	Zagorje turkey
	Croatian hen

Compared to conventional breeds, varieties and hybrids, the native breeds of domestic animals cannot be economically profitable and competitive due to their production characteristics. Keeping native breeds is, therefore, subsidized through government incentive programmes. In this way, the state has been directly stimulating livestock breeders, for a number of years now, to keep native breeds.

The beginning of native and protected breed's payments dates from 1994. First beneficiaries of government subsidies were Istrian cattle breeders for Boskarin oxes (103 cows and 8 bulls). Amount of payments for breeding valid cattle was about 1300 DEM.

Since 1996 and 1997 all other native and protected breeds were included in support system program. During last 10 years payments varied as much as 100%. As an example, for Istrian cattle, support was 7000 KN (950€) in period 1997-2000, while since 2001 its 3000 KN (400€). After that period support remains stable and unchanged till last two years.

The total amount of support for native and protected breeds for two recent years was 25 million KN (€ 3.5 million) therefore the amount of support shows significant increase. Increasing payments by 50% for adult valid breeding of native and protected animals and domestic races animals whose effective population size is less than 100 animals, probably will contribute to higher valorisation of breeding quality in future. In the same period all breeds record a constant increase of the total number of animals as well as increase of the number of farmers, as result of constant and certain funding.

#### **Current support for native and protected breeds in Croatia**

<i><b>PAYMENTS FOR NATIVE BREEDS PER HEAD/BEAK YEAR 2008</b></i>							
	<b>CATTLE</b>	<b>HORSE</b>	<b>PIG</b>	<b>GOAT/ SHEEP</b>	<b>DONKEY</b>	<b>HEN</b>	<b>TURKEY</b>
<b>PER ANIMAL</b>	400 €	280 €	100 €	47 €	140 €	8 €	20 €

<i><b>PAYMENTS FOR NATIVE BREEDS PER YEARS</b></i>					
<b>YEAR</b>	<i><b>2004</b></i>	<i><b>2005</b></i>	<i><b>2006</b></i>	<i><b>2007</b></i>	<i><b>2008</b></i>
<b>PAYMENT</b>	500.000 €	155.000 €	1.850.000 €	3.480.000 €	3.480.000 €

However, when it comes to a safe and long-term conservation of gene reserves, this type of assistance to conservation efforts proves to be both insufficient and inefficient. In addition, with Croatia's accession to the EU the mode of providing financial support for keeping native breeds will change significantly.

Since obvious endless chain of mutual cause-consequence connections, gaps and necessity for cooperation between different sectors (which is also one of the conclusions of the first *Conference on Native Breeds and Varieties as part of natural and cultural heritage with international participation* held in November 2007 in Šibenik organised by State Institute for Nature Protection), the Ministry of Agriculture, Fishery and Rural development during 2009 established *National Committee for native breeds* with representatives of responsible ministries, public, scientific and professional institutions. During 2009 Committee drafted the *National Programme for the Protection of autochthonous - native and endangered breeds of domestic animals in the Republic of Croatia*. National Programme has been accepted by the Government of the Republic of Croatia in March 2010. Programme includes analysis and brief review of the current condition; settle the guidelines for future activities and coordinate the work of interdisciplinary experts, scientists and relevant institutions. Programme, above other tasks, proscribes development of the Management plans for critical endangered native breeds. Nowadays we are in progress with development of the Donkeys and Međimurje Horse Management Plans.

The obligation of our society is developing programs for research and conservation of native breeds, and constant implementation as well. Republic of Croatia streams in positive direction; hopefully we will have better results.