Natural and cultural grazing in the Danube Delta

Fieldtrip on natural grazing to the Danube – Delta in Romania

May 21 – 29 2006

1st draft
Cover:
Fig 1. A shepherd of the village of Sfantu Gheorghe accompanies in early morning the cows of the villagers to the semi-wooded common grazing grounds in the dunes near the Black Sea. At night the animals return home on their own to be milked.
foto Renee Meissner
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1 Introduction

In may 2006 a fieldtrip was made to the Romanian Danube Delta, which resulted in The Vision for the Danube Delta, a natural gateway to Europe. Subtitle of the vision is : Ecology and Economy in Harmony. It deals with seaside and delta systems, hydrology. During the field trip, an investigation about grazing was made at the same time. Grazing, both natural and cultural has always been of great economic value to the inhabitants. Goal is to develop grazing methods that will be in favour to both nature and its diversity as to the people who have to deal with modern times and changes in their daily life. This paper tells about the present situation and gives ideas for future developments. Modelsites are indicated.

2 Methodology of the fieldtrip

By boat the delta was crossed during a week in may 2006. The exceptional flood of last spring just started to go down again. Overnight where in small villages. Discussions, meetings and interviews with officials, local people and tourist entrepreneurs, together with many impressions where the ingredients of the investigation. The group consisted of Willem Overmars, consultant on wetland systems and landscape architect, Geert Overmars, photographer, Orieta Hulea, of WWF - DCP, Renée Meissner, grazing expert and the boat crew.

The trip was mandated by WWF International Danube Carpathian Programme

3 Mission observations

The first impression is that many parts of the delta are too wet for grazing by domestic animals like cattle and horses. Even not by the primitive and self-sustaining breeds. But this does not mean that grazing has no role in the ecology of the delta. Between the many swamps and marshes are old and new dunes like dry sandy islands. Here we find villages and since historic times, agriculture was practised in an old fashioned, low-density and sustainable ways. These methods work out as semi natural grazing. But mondial economic developments are dangerous to this systems and already the negative impacts for nature are visible. For example the semi wild horses of Letea forest are totally left without number regulations. Overgrazing lies in wait. Action is needed to prevent too rigorous measures. Natural grazing in the dunes will have a cultural side This has been so in history and will be in future. There are other small grazing possibilities on the inner banks and dykes, mostly on places with settlements.
The old system of trancehumance between Moldavia and the Romanian delta and to the European cities, could be restored. And last but not least introduction of new species, both domesticated and wild, to the marshes have to be considered Beaver, otter, elk and water buffalo. Here the big polders that are to be restored, come in sight.

Fig. 3. Marine and fluvial plains in the Danube delta. This is, more or less, the area that is being grazed. Source: Geomorphological map of the Danube Delta, DDNI/Riza. Ukrainian part added in less detail.

Fig. 4. Cow in the dunes, Sfintu Gheorghe.
4 Sfintu Gheorghe

The village of Sfintu Gheorghe is situated at the mouth of the Sf. Gheorphes branch, on the edge of Grindul Saraturile (a complex of maritime levees) and the new dunes.

This pittoresk village turned out to have an outstanding horse minded population as cultural heritage. The village has only sand roads and transport is by horse carriage or by boat. Young men are riding on horseback without saddle. Luggage of visitors and post is brought by horse cart. It gives an impression of being in European cowboy country.

The horses are of a small, tough type, like celtic pony's. They are also used to drive the cattle. Young animals of both species, horses and cattle, grow up half-wild or semi wild in the surrounding common grounds.

Cattle is of the old breed Sura the Stepa mixed with Bruna the Maramures. (figs 9 and 10)

There are 700 inhabitants and 7000 horses, the amount of cattle is less. Animals of both species graze the beaches, the coastal flats and the Sacalin ridge, daily from 6 to 6, without shepherd. They return home by themselves to be milked. They have to move many kilometers and pass a deep canal by swimming on their way home. Young and meat animals stay in the field. People have great respect to old horses. If they are too old to work, they are left in nature to die. They never eat horse meat. Sometimes they help horses die, if they are suffering. The word they use for such killing is sacrifice. The breeds are continuously adapted by natural selection. Both cattle and horses live in natural groups.

Fig. 6. Ecotourism in Sf. Gheorghe. Photo Geert Overmars
Conclusion:
The very genius of the local culture can be starting point to develop eco tourism. No roads, no cars, only horse transport, horse riding in surrounding nature, beach life amidst cattle, awareness of the people, about their culture, their nature and their authentic breeds. This should result in products from herds and nature to be sold. Managing of the semi wild herds means decreasing the numbers of animals. To defend overgrazing. Loss of income will be compensated by tourism. Monitoring the impact on nature is advisable. It will upgrade the old herding system to modern insights. The system of semi natural grazing seems to be in harmony already is very important to emphasize this to the local inhabitants, before they loose their unknown treasure.

The surrounding Grindul Saraturile seemed to be used by forestry. This relatively large surface would give the opportunity to start a large semi-natural grazing project.
Fig 9. Sura the Stepa. Source: Marleen Felius, Rundvee, rassen der wereld. Doetinchem 1996

Fig 10. Bruna de Maramures. Source: Marleen Felius, Rundvee, rassen der wereld. Doetinchem 1996
5 Letea and Rosetti

Letea and Rosetti are villages in the famous old forested dunes by the same name: Letea forest. For description of the forest read the background document 2. Total strictly protected area 2500 ha, varied forest and grass land, with the old forest of 500 ha is the core area, owned by the forestry.

Fig. 11. Grindul Letea.
Gently undulating landscape with alternately natural grasslands and old forest.

Common grazing in the surrounding nature of the villages is still practised. But social developments have already resulted in changes. Cattle, mostly the breed Sura the Stepa and some Bruna de Maramures are kept by all farmers. (figs 8 and 10) They have more or less the same herding system as in Sfintu Gheorghe, animals can choose by themselves if they return home for the night or stay in the forest. Cows often give birth in the forest and turn back home with the calf, half a year later. This is very much respected. Cattle that comes home in the evening are collected on several places in the village. Thus they form natural groups or clans. Each group has some of unrelated bulls, which corresponds exactly with natural systems. The gathering of the herd early in the morning is a cheerful social event for the inhabitants. A shepherd brings the cattle to the forest, where it is left alone.

In former days, people had horses to work for them in the fields and for transport. Young animals and the surplus was grazing in the forests like the cattle does. This made the densities in harmony with the needs of the people and the ecology of the forest. But people changed from horses to tractors and horses were less needed than before. Grazing the forests costs some money. The result is that nobody claims to be the owner of the horses any more and they are left behind. They live there as feral horses, in natural social groups. Their numbers grew by the years and now there are about 1000. The vulnerable dunes with their vegetation is considered to be in danger by overgrazing and by treading. The forestry wants to get rid of them.
Fig 12. Letea on an map of 1771. Source: University Library, Leiden NL.

These horses are of a different breed than the close by Sanfu Gheorghe breed. Bigger, not riding but working horses. Nonius type. They are very valuable as they are adapted to this place, became feral and developed natural social behaviour. It should be a shame to remove the herds or to decrease the numbers in an unnatural way. This shall disturb the natural behaviour and use of home ranges. There seems to be a company hired to do so next year.

Fig 13. Letea on a map of 1778, “Stelle fur die Heerden.” Source: Österreichische Nationalbibliothek.

It is remarkable that in these villages people are less horse minded, but instead are dedicated cattle owners. There are also 1000 head of cattle, owned by 120 people. Some facts: There are hardly veterinarian problems. Very few losses, mostly due to bull fights. Ages are up to 20 years. A cow costs €300,00 First calf at the age of 2 to 3 years.

Grazing on the common grounds has an old tradition. On maps of 171 and 1778 we can find the place of round ups and corrals (figs 12 and 13)

Action.
Start monitoring of the unique grazing. Advise the forestry and the company how to decrease numbers if needed. (management plan) Inform about short term possibilities to sell the horses of this old breed alive. Organise tourism activities and improve the reachability of the place. Change excursions from tractor to horse.
Fig. 14. Natural social group of feral horses in Letea Forest. Photo Geert Overmars
6 Other possible grazing areas

6.1 Kilia Vecche

Kilia Veche has an old tradition of small scale mixed agriculture. There used to be a flourishing local market of the products. The place is easy to reach by boat and there is a large agricultural hinterland. For the whole Danube Delta it should be advisable to develop a blend for natural eco products. Meatproducts, milk products, cheese, fruits, jams, honey, can be marketed to own people and to tourists. Kilia could be a place to center the activities.

Fig. 15. A farmers’ couple brings home made cheese to the local market in Kilia Vecche.
6.2 Riverbanks and hill slopes in the Ukraine

Banks, dykes and outer forelands in combination with grazing on the slopes of the plateaus. At the edges of the delta, we find very accessible grasslands. In fact these are the utmost endings of the Budzak plateau. High waters will not be dangerous to grazing animals as they can move to higher places. There are reforestations in this area, where grazing will not be accepted without proper management. But grazing and meatproduction can be seen as reverence to old historic practises. In combination with grazing alongside the Danube upstream, the surfaces can cover big stretches. Also cooperation with Ukrainian products from the Reni-Ismail and Limans sites will become feasible. Even Moldavian natural meat production can be added. Producing natural meat in big quantities will favour marketing possibilities. In fact, at Tataru island in the model site feral cattle is introduced already, and the Izmail alluvial forest project will follow soon.

6.3. Kiliya Outer Delta

In the Kiliya outer Delta, a group of cattle is already feral for some 40 years, living in the dunes at the very coast of the Black Sea.

Fig 17. Dead feral cow in the Kiliya Outer Delta
6.4 **Inner riverbanks, dykes (and salinated polders)**

Grazing varies here from very small scale to medium big scale management. Breeds used are mostly mixes of productive cattle breed, kept under poor conditions. The habitats are not ideal for these breeds. As grazing with the old adapted breeds will be practised and respected, people can switch over to these breeds. Especially if marketing of the quality products give better proceeds.

*fig. 18. Cows on a low dyke near St. Gheorghe. Photo Geert Overmars*
7. Importance of natural grazing in ecosystems

7.1 About mosaics, differentiation and biodiversity

Where plants are growing, they are eaten by a multitude of animals, from small aphids to, in our climate, animals as big as cattle, horses and elks. The plant eaters not only feed themselves with plants. They exercise a profound influence on the landscape. They break up monotonous forests into elaborate mosaics of open spaces, dark woodlands and shrubby areas, with a multitude of soft gradients and sudden transitions from open to closed, from shady to exposed, from warm to cold, from moist to dry, from safe to dangerous. These mosaics are the home for many more species than the ones that would inhabit closed forests or treeless open meadows. So, natural grazing forms the basis for a differentiation of the natural habitats in general, and to a larger biodiversity.

7.2 About large herbivores

Large herbivores are indigenous all over Europe. Some of them, like the elk, are hunted to extinction in most parts of the continent, except for the north. Locally, overhunting caused extinction of deer. Cows and horses are extinct in their wild forms, but are overwhelmingly present in a multitude of domesticated forms. In the totality of the genes of the domesticated forms the wild ancestors survive. Apart from their landscape-forming influence on the vegetation, the very fact that they belong to the original megafauna of our continent means, that they do have a right to populate the plains and mountains of Europe. They do belong to nature.

Experiments with sturdy breeds of domesticated cattle and horses, show, that they survive easily in the wild. In the Danube delta, the cattle in the Kiliya outer delta, and the horses in Letea forest survive well. Beautiful to observe is the return to their natural social structure within a few years. Horses with a group of mares with a leading mare, and one stallion, and cows in female grandmother-mother-daughter groups.

7.3 About grazing in the Danube Delta

The Danube Delta consists to a very large degree of marshlands, swamps and lakes, where large herbivores cannot survive. The area, however, is completely covered by a maze of riverine and maritime levees, and dunes. (fig 3). Some times low and narrow, in other places wide and large. Everywhere in this maze, these sparse dry surfaces are used for low-density grazing by domesticated horses and cattle. “low-density” means that there are so few animals, that they are not capable of destroying the landscape by eating all trees and shrubs. Over grazing, as in high-input agriculture, will result in the collapse of the ecological mosaic.
In the delta, grazing can be used in three ways:

1. Wild animals.
Roe deer and Dama dama and wild boar still are present in the delta. Deer, beaver and elk could be reintroduced. A precious thing is, that in the delta wild coyotes, their predator, still survives. (See: “A Vision for the Danube Delta, Ukraine”, 2002)

2. Feral animals
In several places in the delta, animals have escaped (cows in the Kiliya delta) or are left alone (Horses in Letea Forest). This spontaneous return to a natural state should be valued and studied, and managed.

3. Domesticated animals
The agricultural use of cattle and horses in the delta is still on a low-density level. (Earlier attempts to introduce high-density cattle farming are abandoned) It has a place deep in the history and the culture of the population. This is a treasure as well, and can be the basis for both the maintenance of a beautiful mosaic-landscape on the dry places in the delta, and for income for the inhabitants.
Most of the villages in the delta are still in the pre-motorised phase, and a living cultural tradition of using horses and cows on common grounds is still in existence.
8Local authentic breeds

8.1 Cattle:
By lack of wild species, natural grazing can best be done by the old authentic local breeds. They have adapted to the habitat since long times. People are mostly proud on their own cultural heritage. And even the breeds themselves need to be rescued from extinction. Not only because of the cultural aspect but even because they developed qualities that are important for modern breeds as well. Such as resistance against diseases. These breeds are used in the remote places where the cattle have to survive and be productive on poor grounds with often rough vegetations and few management. Old cattle breeds in Romania that are still kept in this region are Bruna de Maramures, Sura de Stepa (figs. 9 and 10) and Dobrogea red cattle. The breeds originated long ago by inbreeding with different breeds and developed to very much adapted strong and homogenous breeds. Most of the herds in the delta were more or less mixed with modern breeds and mutual. The herds needs a program to restore the old pure bred animals. The Sura the Stepa is the most pure of the three. They are one branch of the big related family of podolian grey cattle. See the working paper on natural grazing in the Ukraine.

8.1 Horses
Three different types of horses were found. It is recommended to do a survey on more details about local names and descriptions.

fig 19. Horse from Sfintu Ghorghe.
The Sfintu Gheorghu – horses had different colours, were of a very typical riding horse type, small, 1.30 to 1.35. They even had traits of lateral gaits which reverts to an old riding tradition which still exists in Mongolia. This type has resemblances to the hucul horses.

Fig. 20. Horses in Letea Forest. Foto: Geert Overmars

The Letea horses are all blanck or bay, without white spots. Size is about 1.45 to 1.50. Strong, dual purpose horses, very much resembling the old hungarian breeds.

A third type is found around the villages and is of the all purpose nag type found around the whole middle european countries. Some individuals had Posavina horse traits.

For more details, see the paper on natural grazing in the Ukraine.

9. Waterbuffalo (bubalus arnee bubalusb)

9.1 Geographic range and history of the species.

Wild waterbuffalo is an ungulate which has his origins in India, Bangladesh, Nepal, Thailand, Bhutan and Vietnam. Wild populations are very scarce by now. Domestication however started 5000 years ago and is now widespread all over the world. In several places the species became feral again. And even feral herds that lived semi wild for generations, were redomesticated successfully to become of economic value. This story shows how difficult wild, feral, domesticated and hybrids can be distinguished. This is both the result of their docile character and the ability of the species to adapt to different conditions.

Domesticated animals arrived in North Africa and the Middle East in 600 a.d.. From there they arrived with crusaders in Europe in the Middle Ages In these days herds were kept in north western France and in Cornwall. And in many countries where they still live today. In Bulgaria, Hungary, Italy, Romania, Turkey they have lived since many centuries. They used to be the poor man's tractor. They were kept either for milking or for meat production. In Iraq they even formed a closed symbioses with the local people, the so called Marsh Arabs. Since the last decades they are introduced in nature reserves to restore biodiversity in wetlands were cattle can not live. For example in Greece near Kirkini Lake and in England in the Chippenham Fens. They can tolerate both low and high temperatures and low and high altitudes, like in Georgia and Azerbajian. In Romania and Bulgaria, many of them are kept in the mountains.

Fig.22. Water Buffalos in the Danube Delta, St. Gheorghe Branch, 1969. Source:

9.2 Breeds.

Due to genetic isolated populations, different domestic breeds developed. The most wide spread of them is the river buffalo that is found more in the west. The Hungarian variety is of the riverbreed. They have 50 chromosomes, as the swamp buffalo has 48. Besides this, there are many local breeds that are specially adapted to their environment. If introduction for semi wild or natural grazing is wanted, man should take care to look for the suitable breed.

9.3 Exterior features and characteristics.

The riverbreed is black or gray with slightly curled horns. Height and weight differs depending the breed but varies between 250 up to 600 kg and 1.50 to 1.70. Maximum age is 25 years.
Hides are tough to resist insects and hoofs are wide to move on wetlands. They are good swimmers. Their character is very docile and easy to manage, but they can easily become upset and stressed. They need fresh water and swamps or mud pools to wallow. They are susceptible to the same diseases as cattle. They also have a social behaviour that is comparable with cattle. Although their herd structure is more cohesive. They live in maternal groups from 10 to 20 animals, and in periods of the year these groups collect up to 100. Males live in bachelor herds of about 10 members. Home ranges differ depending the food availability. But one animal to 30 to 50 ha seems to be an average for yearround living without artificial feeding and .Being ruminants they live on grasses, aquatic vegetation, herbs and leaves of alluvial trees Adult animals eat an average of 25 kg of dry matter each day

9.4 Ecosystem impact.

By grazing they will open reed beds and grasslands which will diverse the vegetation and the wild fauna. By treating the ground and wallowing they will create patches of variabel habitat for insects. By swimming they make canals that can be used by waterfowl and water mammals. (like otter?) They will spread seeds in their skins. Their excrements will fertilize locally which will profit flora. Overgrazing is a real danger and great attention must be payed to. It should have an important role in a management plan if introduction is considered.

9.5 Economic Importance.

There are many product to yield. Meat, milkproducts like mozzarella, hides, horns, leather. Meat is very tender and with low cholesterol. Milk has more protein and less water than cows milk. Not the least product is the attraction that buffalo has on tourists. Managing is easy because of their docile characters. Experiments with waterbuffalo could be done in one of the salinated polders.
10 Wild species

Grazing by wild species should be by species that belongs to the ecosystem. Reintroductions can be considered after detailed studies. Attention should be taken if new species have realistic chances to migrate in natural ways once the habitats are restored. Species to study include beaver, Deer, Roe deer, Dama dama, otter, elk, coyote. (See" A Vision on the Danube Delta, Ukraine", 2002)

11 Human dimensions

Natural grazing has to be a profit for both nature and economics. Making nature more complete, and diverse will attract more visitors. Breeding animals in a way that the products bring prosperity to the local people will enlarge the awareness to nature and its value. Classic farming has no economic future on the small scale as is necessary in the Danube Delta Therefore alternatives have to be defined. Conservation of old breeds combined with natural grazing and implemented in tourist attractions is such an alternative. Managing waterbuffalo in places that were not profitable before is another chance. Developing a brand and a market for sustainable produced products is the combining innovation.

Fig. 23. The Sfintu Gheorghe’s branch, with grazed slopes, and in the background partly reforested hills. Chances for a model site ?
12 Conclusions and Recommendations

for ecological and economical regional development by grazing

- Conservation of old breeds and rural agricultural system have to be done in co-operation with specialized institutes. It will add to international recognition.

- Development of a special brand for sustainable produced regional products.

- The region should cover the whole delta, including Ukraine and Moldova.

- Marketing of the meat can even be produced in Danube riverrine grazing grounds outside the delta. This will rever to the old trance humances in the Budzak and Dobrogena plateaus. But also to the great trancehumances of the podolian cattle that was raised in the Danube stroomgebied and it side rivers and than brought to the slaughterhouses in the cities in Europe. See the paper on natural grazing in the Ukran Danube Delta.

- Developing a chain or cooperation for small business by local people to attract vistors and tourists. The name can be the same as the one for the product brand. Think about small starting grants, brochures and english lessons. Grazing should be a key attraction.

- Start a model site experiment with waterbuffalo.

- Start modelsites in Rosetti-Letea Forest and in Sfintu Gheorghe.