

## WETLAND RESTORATION IN DANUBE VALLEY, CETATE – DABULENI SECTOR

**MIHAELA TRICULESCU**

Universitatea de Vest din Timișoara, Romania,  
mihaela\_triculescu@yahoo.com

**Key words:** wetland, aquatic ecosystem, Danube Valley

### ABSTRACT

*The great variation from last century, especially rapid industrial and rural development and population growth, has had a negative impact on wetlands development. In this context, wetlands have diminished enormously, with disastrous consequences for the local communities and an enormous loss of biodiversity. Wetlands restoration is an essential instrument for future improvements of degraded wetlands and it should become an integrated element of water management asking by Water Framework Directive 2000/60/EEC. Danube Green Corridor is the area most affected by hydro technical works for flood defenses that have reduced the surface areas of marshes and swamps for Danube floodplain.*

### INTRODUCTION

According to the Convention from Ramsar 1971, where Romania also joined, the wetlands represent “*areas with swamps, lakes, accumulated natural or artificial waters, permanent or temporary, where the water is stagnant or running, fresh, brackish or salt, including also the marine water which are not deeper than 6 m.*”

On international level, the water resources and the areas of wetlands is rapidly shrinking, and thus many of the aquatic environments are being damaged. Protecting these areas is highly important, taking into consideration the complex role of the wetlands, objectified by the following functions:

- Keeping the hydrogen balance of the rivers, adjusting the humidity from the soil and reducing the erosion;
- Maintaining the biodiversity of the aquatic ecosystems, the living place of many plants and animals species;
- Controlling the quality of the water, through chemical purification and through decreasing the content of organic substances and nutrients;
- Attenuating the floods and reducing the floods' effects;
- Modifying the local micro-climate;
- Supplying freshwater for the local communities;
- Important role in education, research and recreation.

#### 1. The current status of the wetlands

If in the first document analyzed there were 349 natural swamps and lakes on the territory of the Administration of Water Basin Jiu (30964 ha), nowadays there are registered only 79 (4837,4 ha). This is due mostly to the poor strategy of the waters management. The main idea was initially creating as much arable land as possible, and

this had been done through massive deforestation, modifying the rivers' course and drying the swamps and lakes. All these measures were aimed to lower the danger of floods, to project, execute and exploiting the hydraulic constructions, and also other fields of water management, using especially technocrat methods, often neglecting the legit requirements of environmental protection.

The effects were disastrous for the aquatic flora and fauna, for the hydrological and climatic balance of the affected areas. In Oltenia, the phenomenon of aridity and desertification is very well known in the region from the south of Dolj (the moving dunes from the zone Dabuleni-Calarasi), the decrease in the number of birds that live or transit the floodplain of the Danube, and regarding the hydrological aspect, the decrease of the average level of the groundwater or chemical degradation by increasing the concentration of nitrates and nitrites over the limits admitted by *The Law of drinking water*, the decrease of the water flow in the riverbeds, a higher risk of accidental pollution. All these effects have a negative influence on the current politic for the management of the waters. Therefore, since the increase of the international activity for balancing the economical and social objectives, on one side, and the environmental protection on the other, the ecological approach of the problem has become a priority. From the same category we can mention the large international activity for protecting and conserving the wetlands as natural or semi-natural habitats, having various functions.

## **2. The important wetlands in researched area**

The most important river sections with wetlands from the Hydrographic Space Jiu-Danube are:

- The sectors Vârciorova-Gura Văii and Ostrovul Corbului- Hinova on the Danube
- The river estuaries Cetate-Maglavit
- The Danube meadow between Ciuperceni and Rast
- The rivers Desnatui and Terpezita upstream Fantanele
- The river Balasan upstream Bailesti
- The sector Rovinari-Turceni on Jiu
- The sector Bratovoiesti-Zaval
- The lakes Preajba-Facai
- The area of Giormane-Prunet

The total area of wetlands in the areal Jiu-Danube is nowadays of 4837,4 ha, around 0,3% of the hydrographic territory administrated by us. The Water Framework Directive 2000/60/EEC gives special attention to maintaining and reconstructing the protected areas, which is why they have been included in the register of protected waters. This document is regarding 24 protected areas for environments and species for which the water is an important factor, out of which 18 are named in the Law No. 5/2000 related to approval of the Landscaping Plan of the national territory - 3<sup>rd</sup> section, and the rest are areas about to be proposed in a governmental decision. All the protected areas from the register will be water bodies which will benefit from a special monitoring, will have developed management plan regarding the protection of the habitats and species and

efficient management of the water resources according to the European politic of “sustainable development”.

### **3. Projects regarding the restoration of wetlands in the Danube meadow, Cetatate-Dabuleni sector**

The problem of environmental rehabilitation in the wetlands is thus a priority regarding the modern approach of water management. In this context have been also subscribed our two proposed projects. We are speaking about:

**Restoring and maintaining the wetlands in the Danube meadow, on the sector Ghidici – Jiu** - a project proposed after the requirement of the European Integration Ministry, using money from the funds of the PHARE program, having a total estimated budget of 20 millions of euro. The second project is **The study for restoring and maintaining the wetlands from the sector Ciuperceni-Desa**, which is part of the program Matra for joining UE and offers assistance to the projects regarding the environment, supported by the Netherlands (estimated budget: 350000 euro). The purpose of the projects is to restore the habitats from the meadow of the lower sector of the Danube and connecting them with the protected areas already existing. The following aspects are important, from a technical point of view: removing the sediments from the lakes and swamps, that is a greater depth and volume of water, reducing the nutrients and the toxic materials, preventing a large amount of aquatic plants and populations. These measures will finally lead to the diminution of the eutrophication phenomenon. The rehabilitation projects are for the wetlands of the upper sector, and their success depends not only on establishing aquatic ecosystems, because they ensure a habitat for various species of plants and animals, but also on the reserve of groundwater, reduction of erosion, of the disastrous effect of the floods, of the soil drought etc.

Such projects can succeed only by the collaboration of all the necessary factors: district councils, regional development agencies, school inspectorates, research groups, environmental agencies, NGOs and eventhe general public.

### **REFERENCES**

1. BADEA L., GHENOVICI A. – *Județul Dolj*, Editura Academiei RSR, București, 1974
2. BADEA DANIELA LIANA, „*Evaluarea impactului corpurilor de apă puternic modificate asupra ecosistemelor acvatice pentru râul Jiu, sectorul Târgu Jiu-Craiova*”, teză de doctorat, Petroșani, 2012
3. BANDRABUR T., FERU M., OPRAN C. – *Cercetări geologice și hidrologice in regiunea dunăreană dintre Jiu și Călmățui, studii tehnico-economice*, seria E, nr 6, București, 1963
4. BREZEANU GHE., SIMION-GRUIȚA A. – *Limnologie generală*, Editura AGA, București, 2002
5. BUDEANU C., CĂLINESCU E. – *Elemente de ecologie umană*, Editura Științifică și Enciclopedică, București, 1982
6. COTEȚ PETRE – *Câmpia Olteniei*, Editura Științifică, București, 1957
7. COTEȚ PETRE – *Geomorfologia României*, Editura Tehnică, București, 1973
8. DIACONU C., LĂZĂRESCU D. – *Hidrologia*, Editura Didactică și Pedagogică, București, 1965

8. GAVA TIANA AURELIA, ȘERBAN MARIUS  
SORIN, „*Aprecieriasupraelementelorbiologice de calitatepentruFluviulDunarea*” ,  
Universitatea " Politehnică " Timisoara Facultatea De Hidrotehnică, 2007
9. GÂȘTESCU PETRE – *Dicționar de limnologie*, Editura HGA, București, 2000
10. GIURMA ION – *Colmatarea lacurilor de acumulare*, Editura HGA, București, 1997
11. IONESCU ȘTEFAN – *Impactul amenajărilor hidrotehnice asupra mediului*, Editura HGA,  
București, 2001
12. NAUM T., GRIGORE M. – *Geomorfologie*, Editura Didactică și Pedagogică, București,  
1974
13. POSEA GR., POPESCU N., IELENICZ M. – *Relieful României*, Editura Științifică,  
București, 1974
14. SAVIN CONSTANTIN – *Râurile din Oltenia \* Fenomene Hidrologice de risc  
excepțional*, Editura Sitech, Craiova, 2004
15. ȘERBAN P., STĂNESCU V. AR., ROMAN P. – *Hidrologie dinamică*, Editura Tehnică,  
București, 1989