Wetland restoration in Ciobarciu, Romania

Year of issue

2025

Summary

The short term project objectives were to create 250 ha of wetland by raising the water level of the embanked area with a regulating water outlet structure, creation of a variety of habitats -from dry land to spots with deep water- by digging and opening up of old river meanders that had been filled up.

The project is a good experience in the field of ecological restoration, involving purchase of land, participatory planning and co-operation with other organizations, including NGO’s.

The project also had long term objectives related to the creation of a network of wetlands, integration and nature and water policies, the implementation of European directives and the strengthening environmental NGOs and education. The project was implemented by a Romanian regional water authority with the support of Dutch partners.

The Ciobarciu project was evaluated at the end of the project by the project team and by a Romanian University, who interviewed 55 inhabitants of villages where the (previous) owners lived. After a period of five years, the project was evaluated again.

Photo Gallery



Location

47.0488889, 27.8597222

Project

NWRM

National ID

Romania_01

Sector

Hydromorphology

Installation Date

2006

Implementation status

Completed

Contact

Imola Koszta, REC

Overview

Location of the project

Valley of the Prut River; former floodplain of the Jijia River the most important tributary of the Prut River;4 flood protection polders of around 250 ha between the villages Costuleni and Prisecani.

Country

Romania

NUTS2 Code

Nord-Est

Sponge measures implemented in the case study

Re-meandering

Floodplain restoration and management

Wetland restoration and management

Objectives

Create ~250 ha of wetland in four polders by (i) raising water levels with a regulating outlet, (ii) re-opening infilled meanders, and (iii) excavating to create a habitat mosaic from dry ground to deep water. First flooding occurred October 2006.
Restore flow connectivity to the Old Jijia and reconnect floodplain habitats; works length noted as ~5,500 m in project summaries.
Design parameters included ponds with ~0.5–1 m water depth in two units and staged drawdown over summer; one unit can receive Prut water during floods.
Long-term aims: build a network of wetlands, integrate nature & water policies, support EU Birds/Habitats/WFD implementation, and strengthen NGO/education roles.

Involved partners

Authority type	Authority name	Authority role	Comments	Authority responsibility
Regional / sub-national water authority	Apele Romane (Prut Directorate)	Implementation	—	Responsible
Research institute / University	Institute for Inland Water Management and Waste Water Treatment (RIZA)	Monitoring	national institue	Supporting
Regional / sub-national water authority	Regional Water Board Hunze and Aa†™s	—	—	—
NGO	Het Drentse Landschap (NGO for nature management)	Other	—	Responsible

Documents

cs-ro-01-final_version.pdf (881.83 KB)

Site Information

Climate Zone

Cool temperate dry

Precipitation

550.00 mm

Temperature (°C)

9.20 °C

Evapotranspiration

650.00 mm

Runoff

82.90 mm

Runoff coefficient

0.15

Elevation range

31

Slope range

0-1%

Vegetation class

Grassland (Stipa spp.)

WFD Ecological status

Moderate

WFD Chemical status

Good

Water quality status

Ramsar RIS lists pH 7.5–8.6 and dissolved oxygen 3.43–12.31 mg/L within the site.

Design and Implementation

Project scale

Micro

Project scale specifications

This is a site-specific restoration on the Old Jijia near Ciobarciu/Costuleni (Iași County), creating ~250 ha of wetlands by reopening infilled meanders and managing levels via a regulating outlet/hydraulic node—i.e., a localised hydromorphological intervention rather than basin-wide management.

Project area

250 ha

Principles

To develop ecological restoration measures which can lead to a win-win situation, profitable not only for nature, but also for the population in the area and what is socially acceptable.

Factor constraints

Technical conditions, from which the most important is the availability of water for the wetland.
Social conditions, including the acceptance of the project by the people and authorities in the area and the willingness of the about 425 landowners to sell their land.

Favourable preconditions

The site had high potentials for ecological restoration due to the possibilities to restore water flow in the Old Jijia, the absence of roads and
buildings and the decline of agriculture. Plus it had a low economic value.

Financing

Total cost

388000.00 €

Costs investment

388000.00 €

Costs investment information

1)restoration of Old Jijia (topographic study, cleaning of the river bed, reconstruction of the Chiperesti Bridge, cleaning the streamed of the river-15km, management plan of the Chiperesti inlet) ;
2) development Restoration Plan Ciobarciu wetland (evaluation of the land in the project area; inventory of landowners and agreement, acquisition of land, field works: channel 1, breach in the dikes between comparts 1 and II and II and III);
3) stakeholder involvement, communication and participation at village level as well as at county level and beyond

Costs land acquisition

180.00

Costs land acquisition unit

€/ha

Costs land acquisition information

Evaluation price of land done in October 2003; 150 EUR/ha (Prisaceni) and 170 EUR/ha (Costuleni); During the purchase 1 EUR = 3.3-3.5 lei RON)

Financing authorities

Authority name	Type of funding	Comments	Financing share
PIN-MATRA	Other	Dutch governmental fund to protect and rehabilitate areas for nature in Eastern European countries of € 254.141	66%
Apele Romane	Sub-national funds	22,900 €	6%
RIZA	Other	87,100 €	22 %
Het Drentse Landscha	Private funds	23,712 €	6 %

Compensations

No

Policy and Governance

Policy description

Prior to the execution of the hydrotechnical works, the common floodplain of Jijia and Prut was flooded in the spring, being transformed into a lake, which was used by migrating birds for resting and feeding. In summer, the water level was lower, but there still remained many wet areas in the lower spots.
In order to prevent flooding and to extend agricultural surfaces, the common floodplain of Prut and Jijia was embanked. Jijia river course was deviated by digging a channel to the Prut at Chiperesti. The last 56 km of the Jijia River (Old Jijia), which is parallel to the Prut, has been cut-off and it can be supplied with water from the Jijia by the hydrotechnical knot at Chiperesti when needed. Otherwise, the old Jijia is only supplied from its own river basin by four small tributaries with intermittent flow. In the floodplain an irrigation and drainage system has been developed, which, however, was never finished completely. In the same area two fishing ponds were built which now have been abandoned for financial reasons (Osoi and Gorban fishing ponds). The land from the floodplain was intensively used as cropland. Starting with the political changes from 1989, the agricultural activity in this area has been reduced pastures took the place of the crops. The irrigation system was no longer in use and the drainage system worked only partially. Agriculture in this former wetland area now suffers from lack of water and locally the soil is getting brackish.

Land ownership

Land purchase from ~400 landowners. Of the intended 250 ha, 60% was purchased from local landowners and 15% was secured via long-lease, while 25% remained in private hands (upstream parcels).

Policy targets

Improved Biodiversity

Oher Societal Benefits

Groundwater Recharge

Runoff control

Policy pressure

Directive	Relevant pressure
WFD identified pressure	4.1.2 Physical alteration of channel/bed/riparian area/shore of water body for agriculture
WFD identified pressure	4.2.2 Dams, barriers and locks for flood protection
Floods Directive identified pressure	Natural Exceedence

Policy impact

Directive	Relevant impact
WFD identified pressure	Altered habitats due to morphological changes
WFD identified pressure	Altered habitats due to hydrological changes
Floods Directive identified pressure	Waterbody status

Requirement directive

Requirement directive	Specification
WFD-achievement of good ecological status	Mitigation of physical/hydrological alterations and flow diversions of the river
Floods Directive-mitigating Flood Risk	Room for the Rivers
The Birds and Habitat Directives	Habitats Directive and Bird’s Directive

Policy challenges requirements

RBMP of Danube River District RBMP of the Prut-Barlad

Part of a wider plan

Yes

Wider plan

Wider plan type	Wider plan focus	Name	Comments
Catchment-based	Water	A œstring of pearls a concept for ecological restoration	and Environment and Biodiversity

Public consultation

Yes

Consultation activities

Activity stage	Activity type	Key issues	Comments
—	Setting up of an Advisory Committe	7 members	there was 1 meeting, following which Romanian project team fowund that working bilaterally with the committee members was more effective
Implementation phase	Personal visits to the landowners	information on the benefits of the restoration and agreement on land purchase	400+
Other	Information to the local people (meetings with villagers, posters, articles, media campaign, colouring contest in the school)	—	Design of the area, implementation of the plan and management of the area

Has contractual arrangements

Yes

Contractual arrangements

Name
Memorandum of Understanding (MoU) between the governments of Romania and the Netherlands (renewed in 2000)

Name
MOU ecological reconstruction signed: - County council - Environmental Prot. Insp. - Romanian Waters - Romanian Ornithological Soc. - Romanian Scouts
Agreement with almost all land owners for selling the land (12 oppose)

Impacts and Monitoring

Monitoring System

Monitoring requirements

Monitoring implemented at Ramsar scale covers water regime, water quality and birds, with avifauna surveys at Ciobarciu led by Al. I. Cuza University.

Monitoring parameters

Birds and fauna evolution: a program begun in spring 2007 (C. Gache, Al. I. Cuza University) documented >100 bird species in 2007–2008 and highlighted sensitivity to water-level oscillations.
“water regime monitoring” and “water quality” monitoring are implemented.

Maintenance

Maintenance requirements

Maintenance of the hydraulic facilities on annual basis and management of water flow is done by Apele Romane, having the ownership of the land.

Impact Assessment Methodology

Performance impact assessment method

Laboratory

Performance impact estimation information

Field observations during two summers, 2007-2008. Birds monitoring: transect method, observation from fixed point, male sounds counting and band counting (for waders and aquatic birds)

Socio-economic Impacts

Direct benefits information

Public access and recreational opportunities increased; the site offers educational and scientific uses and is recognised locally for these functions.
Increased possibility of non-comercial fishing Increased possibilities for horticulture along the Old Jijia Increased natural values (more birds and animals) Increased underground water.

Ancillary benefits information

Increased agriculture/horticulture along the Old Jijia
Increased tourism, leading to potential economical benefits originating from the interest of investors

Biophysical impacts: Hydrology

Information on retained water

Old Jijia can be fed from the Jijia via the Chiperești hydrotechnical node; the site comprises four ponds (two with 0.5–1 m depth) and a reach ~5.5 km long directly affected by works. First flooding: Oct 2006.

Biophysical impacts: Biodiversity

Improved biodiversity

Yes

Information on improved biodiversity

Contributed to the quality improvement of an important migratory route for waterbirds.
1 year after the flooding :
During field observations different aquatic and terrestrial invertebrates groups, amphibians, reptiles and some small mammals were observed.
Birds : 105 species recorded in 2007–2008, including 29 Annex I Birds Directive and 19 in the Romanian Red Book; site used heavily during migration, with initial breeding noted for several waterbirds/terns.
Fishes : 8 fish species observed about one year after flooding.

Negative episode (2008). The water-level drop from outlet failure disrupted the 2008 breeding season; caused the wetland to nearly dry, with severe impacts on birds.

Biophysical impacts: Others

Ecosystem impact climate regulation

No information available

Information on ecosystem impact climate regulation

no information available

Lessons Learned

Key lessons

Participatory planning and close co-operation with NGOs and local authorities were decisive. Co-design with communities and partners smoothed land transactions, built trust, and made implementation workable for a multi-owner landscape.

Where land purchase is unavoidable, map ownership early and plan time and budget for transactions. Ciobarciu mixed purchases with long leases; this reduced conflict but added administrative complexity that needs managing from the outset.

Increased water availability is a tangible livelihood gain. Continuous flow in the Old Jijia enabled kitchen-garden irrigation (and even some larger parcels), livestock watering, non-commercial fishing, and reed use—benefits that help keep local support.

The functional wetland strengthened an international migratory route for waterbirds. Monitoring confirmed high bird richness soon after flooding, but also showed sensitivity to water-level fluctuations—success depends on stable spring–early summer levels.

Operations and maintenance are critical. The 2008 drawdown caused by an outlet malfunction disrupted the breeding season; clear operating rules, reliable structures, and seasonal targets (keeping adequate water through at least May–mid-July) are essential.

Monitoring should be built in and shared. Universities in Iași joined planning, monitoring, and evaluation, creating local capacity and a feedback loop for adaptive management (birds, water regime, water quality).

The project contributed to the development and implementation of sound nature and water policy. Embedding the site within wider Jijia floodplain planning and protected-area frameworks helps sustain outcomes and facilitates future reconnection works.

Financing remains a constraint. Even strong early results can stall without long-term budgets for O&M, monitoring, and follow-up works; replication requires predictable funding and institutional commitment.

Barriers

Barrier type	Barrier role	Comments
Lacking financing sources	Main barrier	Situation after 5 years showed that there were no funds for creating other wetlands, and the Ciobarciu wetland had not been functioning for two years due to construction works (e.g. beginning of June 2008 the water was lost through the outlet junction Ciobarciu). The absence of water in this period had been a disaster for the biodiversity of the area.
Market failures	Main barrier	Administrative difficulties in the process of land purchase, due to "fuzzy property" issues. (At the end 75% of the intended 250 ha wetland was either purchased (60%) from the local landowners or was leased with a long-lease contract (15%). 25% cannot be bought.

Drivers

Driver type	Driver role	Comments
Balancing different objectives	Main driver	To develop ecological restoration measures which can lead to a win-win situation, profitable not only for nature, but also for the population in the area and what is socially acceptable

Success factors

Success factor type	Success factor role	Comments
Financing possibilities	Main factor	Without funding from the PIN-MATRA program. the project would have been financially not feasible. If no subsidy would have been received, Apele Romane would have tried to restore water flow in the Old Jijia, but the Costuleni Wetland Project would have not been carried out.Situation after 5 years showed that there were no funds for creating other wetlands.
Attitude of decision makers	Main factor	The mayors have been very much involved, both in the meetings and also in bilateral visits. They also participated in the Advisory Committee meeting.
Public participation	Main factor	local people have been invovled in different ways and at different stages
Existing staff and consultant knowledge	Secondary factor	personal motivation and dedication of all the team members contributed to the success

Success factor type	Success factor role	Comments
Communication activities	Secondary factor	—

Transferability

The project results and relations developed were used as input for other projects and for new project proposals in the framework of the Dutch-Romanian collaboration.
Conditions :
Technical conditions (e.g. availability of water for the wetland),
Social conditions (acceptance of the project by the people and the authorities);
Organisation conditions (willingness of authorities, sufficient capacity available for implementation, an organization capable to manage the wetland in the future)
Financial conditions (for the purchase of land, planning of the project and implementation of the works)

Basin characteristics influence

Quietness and openness of large parts of the floodplains and the absence of roads and buildings.

Sources

Sources

Ciobarciu Wetland Project website

Restoring Europe's Rivers - Case Study Ciobarciu Wetland Project

A String of Pearls: Towards Restoration of Wetland Values in the Prut Basin

The Costuleni Wetland Project Plan

Pilot info

Evaluation report Ciobarciu Wetland

Ciobarciu Wetland Pilot Project on ecological Reconstruction

ECRR Addressing practitioners

How to facilitate the transfer of wtaer management knowledge Lessons from Dutch-Romanian project experiences for project implementers, advisors and financers

Transferring Water Management Knwoledge How actors, interaction and context influence the effectiveness of Dutch-funded project in Romania

Rivers by Design

Ecological Restoration Project "Ciobarciu-Costuleni" (Iasi-Romania): Monitoring of the Birds' Fauna Evolution

CONFERENCE "ECOLOGICALNETWORKS" Introduction to experiences and approaches

River Basin Management Plan Prut-Barlad

Ciobarciu Wetland Project

Plan de Management Prut-Bârlad 2022-2027

Strategia APSFR Volumul II – 11-A036F Prut (APSFR Risc Mediu / Ridicat)

Reconectare și restaurare luncă inundabilă, remeandrare curs de apă Jijia – Axa 5

Ramsar Information Sheet – Romania: Jijia–Iași Wetlands (Site no. 2422)

Strategia de Dezvoltare Locală a comunei Costuleni, județul Iași 2021–2027

Ecological Restoration Project “Ciobarciu–Costuleni” (Iasi – Romania): Monitoring of the Birds’ Fauna Evolution