

## RESTORATION OF DEGRADED WETLANDS THROUGH THE CONSTRUCTION OF A NATIONAL PARK

*By safeguarding the ecological heritage of the Changyuan River, the resilience capacity of the local ecosystem is improved*

### OVERVIEW

- Organization data:
  - ✓ Name: **Changyuan River National Wetlands Park Management Committee**
  - ✓ Organization type: **Local government**
  - ✓ Year of foundation: **2012**
- Beneficiaries : **19 villages and 6948 households concerned**
- Donors and financing: **Agence Française de Développement - €30 million (50% of the total amount)**
- Location: **Qixian, Jinzhong county, Shanxi province, China**
- Beginning date: **January of 2015**
- Motivations: **To restore the good ecological status of the wetlands of the Changyuan River, its biological richness and to restore its hydrological functioning**



### CONTEXT AND ACTION

**Summary** | River, which flows from southeast to northwest through diverse landscapes and ecosystems (mountains, forests, plains and urban environments) over 30 km. Changyuan River National Park covers an area of 948 hectares, including 460 hectares of wetlands, and is located between 800 and 1000 meters above sea level.

In recent decades, the riverbed has been particularly degraded, leading to the disappearance of most wetlands and its bed for more than 11 km. The river sand has been used by the glass industry, which is very well known in the city of Qixian. This river is of both ecological and cultural importance to the region. Its location in the large loess plains of central China, where wetlands are scarce, makes it a particularly important place from the point of view of biodiversity. This is why it was essential to restore the permanent river bed and the associated wetlands in order to allow the return of protected species, including some emblematic and threatened species, such as the black stork, golden eagle or mandarin duck.

The management committee of the Shanxi Changyuan River National Wetland Park and the Agence Française de Développement (AFD) have embarked on the river renaturalization and a sustainable management of its ecosystems. They relied on the technical expertise of Phytorestore, a company specializing in the treatment of pollution by plant, and landscaping design. By combining the creation of 2 protected areas, the reintroduction of local flora and the conservation of species and their habitats, the biological richness of the river has gradually been recovered. Ecotourism has also been developed to enhance the natural heritage.



**Local challenges |**

- Low rainfall throughout the province, with alternating dry and heavy rainfall;
- Unreasonable use of water resources due to socio-economic development, leading to degradation of rivers and their riparian zones, including the removal of sand from the river;
- Human pressures on wetlands in the Changyan River: degraded natural functions, disturbed hydrological regime, pollution in riverside communities.

**Local responses |**

- Development of an integrated approach to the management of the Changyan River: establishment of a county-wide management institution;
- Restoration of wetlands and protection of species and their habitats through the creation of a Provincial Forest Reserve and a National Wetland Park;
- Raising public awareness of wetland protection: interactive hiking, ecotourism ... ;
- Wastewater, waste and energy management: methanizer powered by local biomass and filter gardens for the phyto-pollutant purification.

**BENEFITS**

**Environmental |** By restoring the integrity of the wetland ecosystem of the Changyan River, this project improves the ecosystem services provided by these wetlands and the diversity of fauna, flora and habitats. Monitoring data show that by May 2019, the number of wild bird species in the wetland park had increased from 163 at the beginning of the project to 218. Better management of dams and restoration of the riverbed will save 2 million m<sup>3</sup> of water per year.

**Social |** The living conditions of the local populations are improved thanks to the sanitation solutions provided and the restored link with the river. This project offers an opportunity for cultural dissemination as part of the political promotion of the Chinese concept of "ecological civilization".

**Economic |** By developing ecotourism and other forms of alternative employment, this project improves the monetary security of local residents. 2,000 people were offered jobs.

**SUCCESS FACTORS**

- Involvement of local government in wetland protection and ecological restoration;
- Cooperation between departments;
- Bottom-up and top-down communication for better consideration of all stakeholders;
- Strong French involvement from feasibility to acceptance of the work.

**OBSTACLES**

- Climatic conditions: heavy rainfall in summer and long periods of drought, degrading soils where plantations have been difficult;
- Waiting for bed repair for the reintroduction of plant species;
- Adaptation of international solutions to local contexts.



*«Our mission is to improve landscape design with plants to reconcile Nature with the city and factories.»*

**Phytorestore**

## ▪ Contact:

- ✓ Name: **Feiqi WANG**
- ✓ Status: **Project manager**
- ✓ E-mail: **qxlyjsdb@163.com**

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