

PROMOTING ADAPTATION TO CHANGING COASTS

Saône Valley, Thomas DROUET, Cdl.



Saône Valley, Thomas DROUET, Cdl, June 2022



Reconnecting the river to its floodplain, Otter Valley, EDPHCT

PROMOTING ADAPTATION TO CHANGING COASTS

Promoting Adaptation to Changing Coasts (PACCo) (www.pacco-interreg.com) is a cross-border initiative financially supported by the Interreg VA France (Channel) England programme. Its aim is to demonstrate that it is possible to work with stakeholders in estuarine regions to deliver a range of benefits for people and the environment by adapting pre-emptively to climate change. It has a total value of €27 with €18m coming from the European Regional Development Fund (ERDF).

The project focuses on two pilot sites:

The lower Otter Valley, East Devon, England (www.lowerotterrestorationproject.co.uk)

and the Saône Valley in Normandy, France (basse-saane-2050.com).



Otter Valley, EDPHCT



Wall newspaper, Saône Valley, Kendal Archer, EDPHCT

SUMMARY OF PACCo WORK ACHIEVEMENTS FOR EACH SITE

Otter Valley



2 bridges **built**



1 cricket club **relocated**



1 old tip **protected from erosion**



3.7km public footpath **raised/enhanced**



1 road **raised from flooding**



5km of river and tributary **reconnected to their floodplain**



55 hectares of intertidal habitat **created**



70,000+ tonnes – the amount of carbon **potentially stored**



4,700+ adults **reached through talks and site visits**



2,100+ children/young people **reached in educational talks and site visits**



2+ national/regional TV programmes **broadcast about the project**

Saâne Valley



1 municipal **campsite relocated**



50 hectares of intertidal habitat **created**



800 pupils **reached through presentations, forums or site visits**



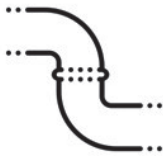
1 wastewater treatment plant **created**



1 river **reconnected to its floodplain**



3 **summer exhibitions**



30km of sewage networks **created and nearly 1500 homes connected**



14 million people **engaged via national and regional TV channels**



20 site visits **with elected representatives, experts, technical staff, funders and national and local press**

Infographic by Carolyn Petersen, EDPHCT. Icon source: <https://icons8.com/>

Infographic by Carolyn Petersen, EDPHCT. Icon source: <https://icons8.com/>

Learning

The primary PACCo output is a guide to encourage climate change adaptation at more sites. This guide captures all of the learning derived from the implementation of the two projects including:

How can you assess the risks of climate change to heavily modified coastal valleys?

How do you convert multiple problems related to infrastructure into multiple benefits?

How should you engage when delivering landscape change?

How do you monitor environmental risks and benefits?

How can you measure the socio-economic benefits of adaptation?

The guide can be found at the PACCo website:
www.pacco-interreg.com/

PACCo Guide Structure



Top tips

The project's lessons learnt can be summarised into the following top tips:

- Identify suitable funders, landowners and partners at an early stage.
- Understand your funders', landowners' and partners' requirements.
- Ensure you know what the key constraints are.
- Know your site's history to shape its future design.
- Take a natural capital approach to articulate options and benefits of adaptation (recognising that there are other benefits of early adaptation).
- Nurture your partnership throughout as it is the foundation for project success.
- Bring your community with you through effective engagement.
- Communicate consistently and effectively using a wide range of approaches.
- Involve local communities from the earliest stage, engage effectively and be receptive to local views.
- Be realistic about project phasing, especially if there are multiple dependencies.
- Habitat and protected species constraints may impact on project timescales and cost.
- Do not under-estimate the amount of time it might take to gain landowner agreement and to put legal agreements in place.
- Use the project as an opportunity to engage the next generation.
- Conduct a detailed site wide ground investigation and surveys of species present on site.
- Show foresight and accommodate future engineering projects.
- Be vigilant to continually changing climatic and ground conditions (working in flood plains can be very challenging).
- Maintain and improve visitor infrastructure during and post-construction.
- Anticipate problems and resolve them collectively.
- Plan monitoring of project outcomes in advance and secure budget for it.
- Think about the project's legacy when developing signage and infrastructure.

Engagement

The PACCo Guide includes an overview of the engagement undertaken on both sides of the Channel and presents an idealised approach based on lessons learnt. In summary the engagement process should:

- Empower stakeholders and communities in the development process, particularly those who are most likely to be affected or are living in the vicinity;
- Ensure representation of all interests including political or statutory bodies, landowners, landscape users, and local communities;
- Promote dialogue and understanding related to addressing the uncertainties of climate change and its impacts;
- Engender trust through transparent, honest, and open engagement, working closely with communities and demonstrating inclusivity;
- Seek to make the complexity of adaptation schemes accessible to different audiences by sharing information through multiple methods.

Measuring socio-economic benefits

There is a need to understand the costs and multiple benefits that can be achieved through the restoration or creation of inter-tidal habitats. Analysing these can help build the business case for adaptation schemes by demonstrating value for money.

Natural capital assessments are a useful method for assessing changes in ecosystem service provision when changes to a landscape are made. These can be rapid and qualitative in nature, or quantitative and more involved, including the use of financial valuations. The PACCo Protocol, which is covered in the guide, demonstrates how such assessments may be undertaken and gives practical examples of both. For example, in addition to enabling £350 million of flood defence benefit to society through the provision of compensatory habitat, a natural capital evaluation of LORP demonstrates a 50% higher value (£35 million) when measured over 60 years than a baseline figure where no adaptation action is taken (£23.6 million). Of the benefits that can be monetised, those relating to the welfare value of recreational, physical health benefits, water quality and carbon sequestration related benefits are of the greatest value.



The carbon value of inter-tidal habitats

Prior to restoration, 55 hectares of agricultural land was estimated at storing 1,300 tonnes of CO₂e with 43 tonnes sequestered annually. A detailed carbon study undertaken as part of LORP anticipates that with the restoration of inter-tidal habit, storage capacity will increase to between 8,000 and 20,000 tonnes of CO₂e over a 44-72 year period.

Design and construction

The PACCO Guide provides a comprehensive evaluation of the history of modifications of two river valleys, how these modifications are at risk from climate change and how these risks can be reduced or eliminated. This includes detailed accounts of the risks, issues, design principles and mitigation related to the adaptation of a range of infrastructure including: the relocation of a cricket pitch; footpaths and a footbridge; a public highway; a historical landfill site; flood embankments; water treatment works; a campsite relocation; floodplain restoration.

Works Case Study: Soléa – the future of wastewater treatment plant in the Saône Valley

At present, many of the 4,000+ homes associated with the lower Saône Valley do not have mains sewage, which reduces the water quality of the valley. This issue is exacerbated by the increased intensity of rainfall associated with climate change. Under PACCo, an additional 750 homes will be connected to a new wastewater treatment plant with two failing sewage treatment facilities decommissioned. This work has involved laying 28.5km of new pipes.

Monitoring and evaluation

The PACCo Guide provides direction on how climate adaptation schemes should monitor and evaluate environmental benefits. This includes:

- The collection and collation of information during **project development** to inform project design;
- Monitoring of the environment during **construction and delivery** to ensure that the project is legally compliant with environmental legislation, the Environment Statement and any related specified planning conditions;
- Monitoring of environmental change during the **legacy phase** caused by the delivery of the scheme into the future.



For more information contact:

UK Contact:
Environment Agency
Manley House
Kestrel Way
Exeter
EX2 7LQ

Tel: +44 2030 25238

For more information contact:

France Contact:
Conservatoire du littoral
Citis – Le Pentacle BP81,
5, Avenue de Tsukuba,
14203 Hérouville Saint Clair
CEDEX

Tel: +33 2 31 15 03 69

Email: lydia.burgess-gamble@environment-agency.gov.uk
www.pacco-interreg.com

Project partners



Other project partners and contractors

Agence de l'eau Seine-Normandie
Région Normandie
Conseil Départemental de la Seine-Maritime
Syndicat Mixte des Bassins Versants Saône Vienne Scie
ABPMer
L'Agence Nature
Bridget Beer PR

University of Exeter
Jacobs
Kier
KOR Communications
Lisode
Manchester Metropolitan University
Natural Capital Solutions