



Assessing and quantifying the economic and social benefits that can be derived from adaptive management of estuarine sites: Developing Protocols, Methodologies and Analysis

Background

Promoting Adaptation to Changing Coasts (PACCo) is a cross-border initiative financially supported by the Interreg V A France (Channel) England programme. The broad aim of PACCo 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.

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 (<http://www.conservatoire-du-littoral.fr/117-projets-de-territoire.htm>). The ecological functionalities of these two estuarine locations are currently negatively impacted by historical human modifications with their current societal value threatened by climate change. Two territorial projects are currently in progress to implement managed realignment schemes demonstrating nature-based solutions to adapt the Otter and Saône territories to climate change. The projects will recreate 100ha of inter-tidal and wetland habitat, enhance ecosystem services and bring socio-economic benefits to the two focus sites. The PACCo project is an opportunity to demonstrate the value of this approach and create a transferable model for sustainable management of coastal and estuarine areas that can be used by other projects and show how multiple problems can be addressed to create multiple benefits.

This initiative is the first time that the benefits of proactive coastal intervention have been demonstrated on this scale at two sites in different countries, giving greater international visibility. The intention is to use this increased profile to promote PACCo's transferable model to an extensive stakeholder network to influence policy makers at national and EU level and enable climate change adaptation at more sites. Solutions will be collated as a 'one stop shop' model and by adopting this model, benefits and savings can also be achieved at up to 70 other estuarine sites. Key benefits anticipated include: the costs of repair and replacement of existing flood defences is avoided; increased socio-economic benefits from increased tourism; public health cost savings; and increased natural capital value of the restored wetland habitat, with greatly increased ecosystem services.

Contract Scope

To devise a methodology for identifying, assessing and quantifying the economic and social benefits that can be derived from adaptive management of estuarine sites. The methodology will be developed and integrated into the PACCo model and must be relevant and deliverable across a broad range of sites, using the two project sites as reference real life examples. The methodology will provide the basis for comparable socio-economic valuations across a range of estuarine sites including the Lower Otter and Saône valleys. Assessments will be done now and up to ten years after the PACCo project has been completed. It will include qualitative and quantitative valuations. The methodology will require identifying categories of key end users and stakeholders and must be relevant to and reflect the socio-economic paradigms of France and England.

Outputs will include:

- **A report to justify the methodological choices** for the socio-economic benefits valuation of the managed realignment of the two sites. The socio-economic benefits may need to be evaluated differently, according to local differences. This report, to be delivered prior to the protocol, will also include the scope of the study, a list of stakeholders, potential benefits, and how risks and benefits will be evaluated.
- **A standardised protocol for providing socio-economic baselines and qualitative and quantitative valuations.** This will highlight the impact of modifications and the value of nature-based adaptation solutions to climate change in estuarine areas across Transitional Coastal Waters (TCWs) on both sides of the Channel. These are to be developed with reference to the real-life examples of the project's two target sites but designed to be relevant across a broader range of sites. This protocol should include identifying the range of risks and benefits for the two sites and describe the ecosystem services concerned. The methodology will include quantitative and qualitative approaches. **Protocol to be delivered by March 2021. The protocol must be produced in English and French.**
- **In the UK only**, upon completion of the protocol to the satisfaction of project partners and the funding body, the protocol will be followed to establish: 1) quantitative and qualitative socio-economic baseline in the Otter Valley (spring/summer 2021), and 2) subsequent short-term changes resulting from project delivery (autumn 2022). It is anticipated that further surveys following the same protocols (which would include possible new stakeholders and uses) will be undertaken after five years (2026) and ten years (2031), although their execution will be outside of the current project scope. **Baseline report to be delivered by September 2021. The second survey to be delivered by December 2022. A separate contractor will be undertaking the surveys in the Saône valley following the same protocol with this contract led by French partners. Regular exchanges between the two contractors are strongly encouraged.**
- **A Final report** compiling baseline (2021), subsequent (2022) survey data and analysis from both the Otter and Saône Valleys. Data from the Saône Valley will be supplied by another contractor. The report will include recommendations for further surveys (due to the time needed for the habitats to reach the balance and climate change

adaptation issues). **To be delivered by March 2023. The final report must be produced in English and French.**

The project programme has an aspiration of supporting higher education and early career development in academia. Bids that are able to incorporate clear elements of learning through (for example) the involvement of one or more Masters students or similar are strongly encouraged. The financing of higher education components (if included) should be clearly separated within the proposed budget.

Protocols and methodologies must be relevant and scalable across a broad range of geographic socio-economic circumstances and include detailed contextual background on key consultees, as well as explaining the key socio-economic benefits considered and how these will be measured. **To ensure that protocols are relevant to and reflect the different socio-economic paradigms of France and England the contract work will be advised by a socio-economic steering committee with the membership the responsibility of the project partners.** Project partners will need to be consulted in the development of the protocols. The contractor will suggest a first draft of a list for key stakeholders to consult and issues to include that will be completed with the project partners and steering committee.

Once the methodology is completed, an essential part of the work is capturing 1) how the sites are currently used and perceived by all identified users on both sites, 2) the impacts of climate change on the functionalities identified as relevant for the valuation, 3) the costs (including those for maintaining, repairing and protecting existing structures) and the benefits of inaction and of adapting to climate change.

The contractor will work with project partners through technical meetings and through communication with the socio-economic steering committee to evaluate and provide feedback on draft protocols/methodologies and assist with consultee selection. Once completed, the protocol/methodology will be disseminated as a key part of the PACCo model through project partners networks, key stakeholders and public authorities covering 70 other estuaries in the France-Channel-England area.

Key supporting/referencing work from recent related Interreg or valuation projects

LiCCo developed best practice for engaging coastal communities enabling them to understand the predicted impacts of climate change. Partners have used LiCCo engagement techniques over the last 3 years to work with PACCo pilot site stakeholders (<http://www.licco.eu/>)

DEFRA has published a guide on valuation of ecosystem services and the North Devon Biosphere Project (Oct 2018) has documented the value of recreating intertidal habitats and how to maximise ecosystem service and recreational benefits through managed realignment. PACCo will utilise this work to communicate a greater understanding of the potential benefits.

The LIFE “Adapto” project showcases innovative flexible coastline management and can inform the PACCo model for adaptive estuary management. The outputs of PACCo will directly inform the activities on three Adapto sites with dissemination at national and international levels.

The Environment Agency has successfully delivered a large managed realignment and habitat adaptation project at Steart in Somerset. The lessons from Steart will guide the removal of sea defences and the creation of intertidal habitat.

INTERREG IVB-Project TIDE. PACCo can capitalise on their toolbox for estuarine integrated management, monetary valuation of ecosystem services and their template analysis for conflicting uses and synergies.

Interreg North Sea Region Project IMMENSE. PACCo is able to adapt an estuary management quality improvement measure from IMMENSE using transnational knowledge to increase stakeholder support and learn from cooperation activities.

The project partners will provide all the relevant information they hold on the history and use of the sites, and will make available any studies/reports related to them.

Client Team

The client team will consist of:

- Dr. Sam Bridgewater, Head of Wildlife and Conservation, East Devon Pebblebed Heaths Conservation Trust, UK (**lead**)
- Mr. Mike Williams, Flood and Coastal Risk Management Advisor, Environment Agency, UK
- Mr Régis Leymarie, Syndicat mixte littoral normand (Conservatoire du littoral)

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Key Partner Profiles

Environment Agency. The Environment Agency (EA) is responsible for the protection and management of rivers, lakes and TCWs to six miles offshore in England. Its role is to balance the needs of the environment with the needs of those that use it. The EA works to address risks and opportunities posed by a changing climate through the Government's Climate Ready Programme. It has major roles and experience in managing the impacts of climate change through responsibilities for the water and wetland environment and as an adviser in the land-use planning system. The Environment Agency is in a unique position to help advise others on adaptation, and to work on behalf of others to understand the evidence and tools needed to make well informed decisions. Limiting climate change and adapting to its impacts is a corporate priority. The organisation works with many organisations on climate adaptation and produces the national risk assessment and adaptation programme under the Climate Change Act. It works with Defra, the Met Office and other public bodies to develop climate change predictions for the UK. The UK Climate Prediction published in November 2018 provides the most up to date and authoritative assessment of how the UK climate is expected to change. As Lead Partner within PACCo the EA will be involved in all Work packages.

East Devon Pebblebed Heaths Conservation Trust (EDPHCT) Created in 2006, EDPHCT manages the habitat and visitors of the Otter Estuary (33 ha; 200K visitors/year) and the East Devon Pebblebed Heaths (1,000 ha; 1.9 million visitors/year). EDPHCT is widely

respected as a leader in environmental management and manages one of the UK's most important wildlife conservation sites. In 2015 EDPHCT gained an award from Natural England for professionalism in site management. The organisation has delivered significant capital works programmes including infrastructure for conservation grazing on the heaths (2014) and the restoration of a Scheduled Ancient Monument (2017). In PACCo EDPCT will be working across all work packages and leading on Technical Work Package 2. It will use its knowledge and experience of working with local organisations and communities to deliver habitat creation (including monitoring and evaluation) and to facilitate socio-economic adaptation to environmental change e.g. improving visitor, recreation and business facilities and delivering education programmes.

Syndicat Mixte Littoral Normand (Conservatoire du littoral) (Cdl) Acting with various partners, the Cdl is involved in studies and action programmes, in favour of a sustainable management of coastlines contributing to the adaptation to climate change (at European level, including as part of Branch, Leonardo and LiCCo). In France, the Cdl launched Adapto, a programme to showcase innovative approaches to an integrated management of the coastline. Experimental solutions are currently under way at some ten sites representing the range of coastal territories across France. (More at: <http://www.conservatoire-du-littoral.fr/38-changement-climatique.htm>). In Normandy, following on from the LiCCo project, the Cdl supports the territory's stakeholders working on operational strategies to adapt to the climate change. A program of actions and flood prevention is currently being implemented in the Sienne River; a management plan for the Val de Saire zone is entering its implementation stage; and operations to dismantle the Orne estuary polders are under way. Since 2012, the Cdl facilitates and coordinates the lower Saône valley territorial project in conjunction with local stakeholders, State departments, local Authorities and users involved in the project. The Cdl is the principal PACCo French partner, in charge of coordination and administrative monitoring of the Interreg project. The Cdl will be involved in all WPs, especially the management and communication ones. It will take part in all exchanges organised to monitor PACCo, its implementation as well as its dissemination across the whole FCE area (communication about the experience, best practices and the implementation methods for management adapted to coastal change to contribute to the improvement of the quality of transitional waters).

Tender bid

Please quote for the work as defined by the contract scope above and taking account of the details in the project description. Within the tender please explain how you would: 1) approach the work providing a timetable of activities, explaining the key-steps); communicate with project partners through meetings and the steering committee to ensure successful delivery of the outputs. Bilingual preparatory documents would be required one week before and the minutes transmitted one week later, 2) provide a breakdown of all delivery costs against the component parts, clearly separating out support of/involvement of higher education (e.g. Masters students) if included, 3) provide background of past experience of undertaking work of a similar nature. Tenders will be judged on quality of submission, experience of contractors and value for money.

Deadline for tender submissions 11th January 2021. Successful contractor should be able to begin work from January 2021.

Payment schedule and terms

Term payments to be negotiated with the successful contractor before the start of the contract, and to be paid on submission of invoices. Normal terms are 30 days after invoicing.