

## Impact Objectives

- Undertake an integrated futures exercise to explore the potential future opportunities for a sustainable 'Blue' economy
- Deliver a 'Blue Futures toolkit' for a blue growth focused manifesto

# An integrated approach to a sustainable future

*Drs Trevor Tolhurst, Irene Lorenzoni and Sophie Day share their work developing an integrated approach to delivering a sustainable economy, environment and society across land, coast and sea in East Anglia*



*Clockwise from top left:  
Dr Trevor Tolhurst,  
Dr Irene Lorenzoni  
and Dr Sophie Day*

### What were the key drivers behind establishing the Blue Opportunities from the Future (Blue Futures) project?

**TT:** We recognised that terrestrial, coastal and marine environments were often dealt with in isolation and that if we could work to better connect across these environments, we could better leverage the 'Blue' (marine) economy to open up opportunities for delivering a strong and sustainable future economy, environment and society across the land, coast and sea.

**SD:** Planning processes tend to work to relatively short-term timescales, bound to some extent by sectoral interests, and

are subject to increasingly tight budgetary constraints and specific geographical boundaries. Delivering sustainable development in practice is a challenge; Blue Futures aims to take a holistic approach with a long-term view (to 100 years and beyond), which understands the influence and legacy of past and present decisions and investments as well as future change upon future circumstances.

**TT:** A key driver was our desire to better utilise academic research and work with non-academic partners to co-produce research that is relevant to users; generating information that will drive innovation and forward thinking in the delivery of future sustainable management and growth.

### The project focusses on delivering sustainability across land, coast and sea. How do you integrate this work with other agencies involved?

**TT:** It is critical to make connections between projects, knowledge and people, developing and growing personal interactions is vital. Knowing there is a large grouping of individuals and organisations with allied interests in the Marine Knowledge Exchange Network (M-KEN)

is a great help. When something comes up that requires outside input there is invariably someone who is willing and able to contribute. We regularly meet and work with our project partners to ensure our work and outputs meet their needs.

**IL:** It is important to consider the political changes affecting land, coast and marine management and how those may present opportunities for operationalising sustainability. This project is mindful of these aspects and is actively taking these into account as work progresses, through regular discussions with our project partners, and multiple stakeholders with whom we have liaised through events and their participation in this project.

### The project uses integrated pathways thinking in strategic planning for a sustainable future, looking to the future in the context of opportunity amongst change. What are the challenges and advantages of such an approach?

**SD:** Our research suggests that integrative approaches are key in delivering actual sustainable development. Academic research can offer huge value to the practice of future planning when conducted in close



partnership with those on the front line of delivery, with great mutual learning and potential for relationship building to inform future study.

**TT:** As we have worked on the project it has become clearer just how much the project could potentially investigate. We could never cover everything in a small project like this, so the approach we have taken is to try and keep our work as encompassing as possible and let the most important themes emerge naturally.

**SD:** There is a significant challenge in practicing 'true' sustainability. As a society, we need to balance social, environmental and economic interests more comprehensively. This project is exploring potential pathways to achieve this, by generating shared aspirations for a sustainable future and attempting to understand better the steps that might be taken over various timescales that set us on a trajectory to achieving those aspirations.

**Can you share more about the suite of methods tailored to futures thinking you are developing, such as a future pathways card sorting exercise and the M-KEN database to create a futures 'toolkit'?**

**SD:** We have developed a suite of innovative methods to help the project team and our participants open our minds to potential long-term areas of sustainable 'blue' economic opportunity; linking terrestrial, coastal and off-shore activity. The suite of methods aims to cascade an extremely broad collection of ideas about future

*The Blue Futures Project is a bold innovation which aims to deliver marine and coastal practitioners with a sustainability toolkit and associated knowledge base*

aspirations and opportunities for the region towards a core set of ambitions. The methods include: hind- and forecasting; looking back to learn about the events, activities and management practices that have influenced the present; and, looking forward to anticipate potential future change and where our decisions may carry a strong legacy. Scenario development and visioning; opening our minds to a range of possible futures and identifying how we would like the future to look and how this may be achieved. A card-sorting exercise enables the geographical placement and prioritisation of long-term sustainability targets and pathway opportunities for their delivery.

**TT:** Knowledge exchange is important for delivering progress, a lot of science is still held by scientific journals behind paywalls and a large amount of knowledge, such as third sector projects and activity, is simply not generally available outside the organisation doing the work. This results in a lot of wasted effort, repetition of things that have already been done and even working at cross-purposes. To address this, we are developing an online database of relevant research, knowledge and activities. The methods and database will be combined into a 'Blue Futures toolkit' for

our partners and stakeholders, which can be more widely applied to help deliver sustainable growth.

**IL:** Reflecting on pathways for a sustainable future, and the options, choices and opportunities within these, has enabled our partners, project participants and us to consider the interconnectedness among options and aspirations, and ways in which these could be actioned. It has also exposed potential barriers, leading to considerations of how these may play out in different futures and be addressed in relation to the future envisaged.

**The project is framed within inevitable future environmental, social and political shifts due to climate change. Can you expand on how you consider these within the potential futures you are exploring?**

**IL:** We decided to use scenarios as a means to enable project participants to consider a wide range of possible changes and futures. These were developed in consultation with our project partners and selected experts, by reflecting on existing literature and studies applying scenarios. We defined four scenarios for the Anglian region a hundred years from now, on the basis of geographical scale of events and climate change.

# Blue opportunities for the land-coast-sea

*The Blue Futures project seeks to create a fresh integrated approach to terrestrial, coastal and marine management; developing and applying tools to identify desirable futures and possible pathways to these to support decision making*

The Natural Environment Research Council funded Blue Opportunities from the Future (Blue Futures) project (2016-2018) is being led by researchers from the University of East Anglia (School of Environmental Sciences and the Marine Knowledge Exchange Network), in partnership with the Environment Agency, New Anglia Local Enterprise Partnership (NALEP), Coastal Partnership East, the Royal Society for the Protection of Birds (RSPB), Orbis Energy, Centre for Environment, Fisheries and Aquaculture Science (Cefas) and environmental consultancy Blue Ltd.

The Blue Futures project is supported by the Marine Knowledge Exchange Network (M-KEN). The M-KEN is a national cross-sectoral network comprising over 400 organisations from academia, industry, local government and policy, brought together in a joint venture to consider the management of marine and coastal areas, and the links to land-based resources, through networking events, workshops and information exchange.

Blue Futures Principal Investigator Dr Trevor Tolhurst, who is the Director of Coastal Science at M-KEN, explains that they have developed a dedicated and rapidly growing network of cross-sector marine stakeholders with mutually beneficial aims. 'The recognition that an outcome designed for one area must be to the benefit of all using it – both mankind and nature, is the crux of the project and it is hoped that by integrating the broad needs of the agencies involved, a holistic approach will be established,' says Tolhurst.

## EXPANDING MARINE KNOWLEDGE

The M-KEN is a network led by Dr Martin Johnson, who sees the Blue Futures project as just the start of a wider initiative to understand how we can benefit from our coastal and marine environments, whilst nurturing both the wildlife and industries that exist there. 'Blue futures is about bringing practitioners, academics, industry, policymakers and communities together

to begin the process of mapping out a mutually beneficial future for East Anglia, maximising the environmental, social and economic benefits from our natural systems on land and out to sea.'

Blue Ltd is an aquatic and environmental management consultancy based in Norwich, and key partner in the design and delivery of M-KEN and Blue Futures. Blue Ltd's Director, Katherine Kennedy is a climate change adaptation expert with a focus on coastal and marine systems, who has worked internationally on such challenges. Her role in Blue Futures includes leading on scenario design and workshop facilitation. 'Blue Futures offers a great opportunity to link up thinking across different sectors and between commercial, social and environmental interests,' says Kennedy.

## CONNECTED WORK PACKAGES

'The Blue Futures Project is a bold innovation which aims to deliver marine and coastal practitioners with a toolkit and associated knowledge base, with NERC science at its core,' explains Dr Sophie Day, Senior Research Associate and Project Team member. She says that this study takes East Anglia as its test case, but its concept and methodology are 'fully transferable' to other regions in the UK and worldwide. Four key packages of work make up this project. The first comprises the setting up of the project, including generation of a database of the current relevant data, and the building of a network of stakeholders. Following this, the team developed scenarios for the future of the region, within which potential future opportunities were identified. The outputs from this work are used to create cards for a sorting exercise to identify possible pathways to these future opportunities. Finally, the team are developing a Blue Futures toolkit, which will provide guidance on methods and processes for embedding further considerations about strategic decision making on future sustainability in users operations.

## Project Insights

### FUNDING

Natural Environment Research Council

### PARTNERS

University of East Anglia • Blue Ltd • Royal Society for the Protection of Birds • Coastal Partnership East • Orbis Energy • Environment Agency • New Anglia Local Enterprise Partnership • CEFAS

### PROJECT TEAM

Dr Trevor Tolhurst – Principal Investigator, Director of Coastal Science, MKEN • Dr Irene Lorenzoni – Co-Investigator, Director of Social Science, MKEN • Dr Martin Johnson – Co-Investigator, Director, MKEN • Dr Sophie Day - Senior Research Associate • Katherine Kennedy – Director, Blue Ltd

### CONTACT

**Trevor Tolhurst**  
Principal Investigator

T: +44 1603593124  
E: [t.tolhurst@uea.ac.uk](mailto:t.tolhurst@uea.ac.uk)  
W: <https://www.uea.ac.uk/mken/blue-futures>

