

Cleaner Seas

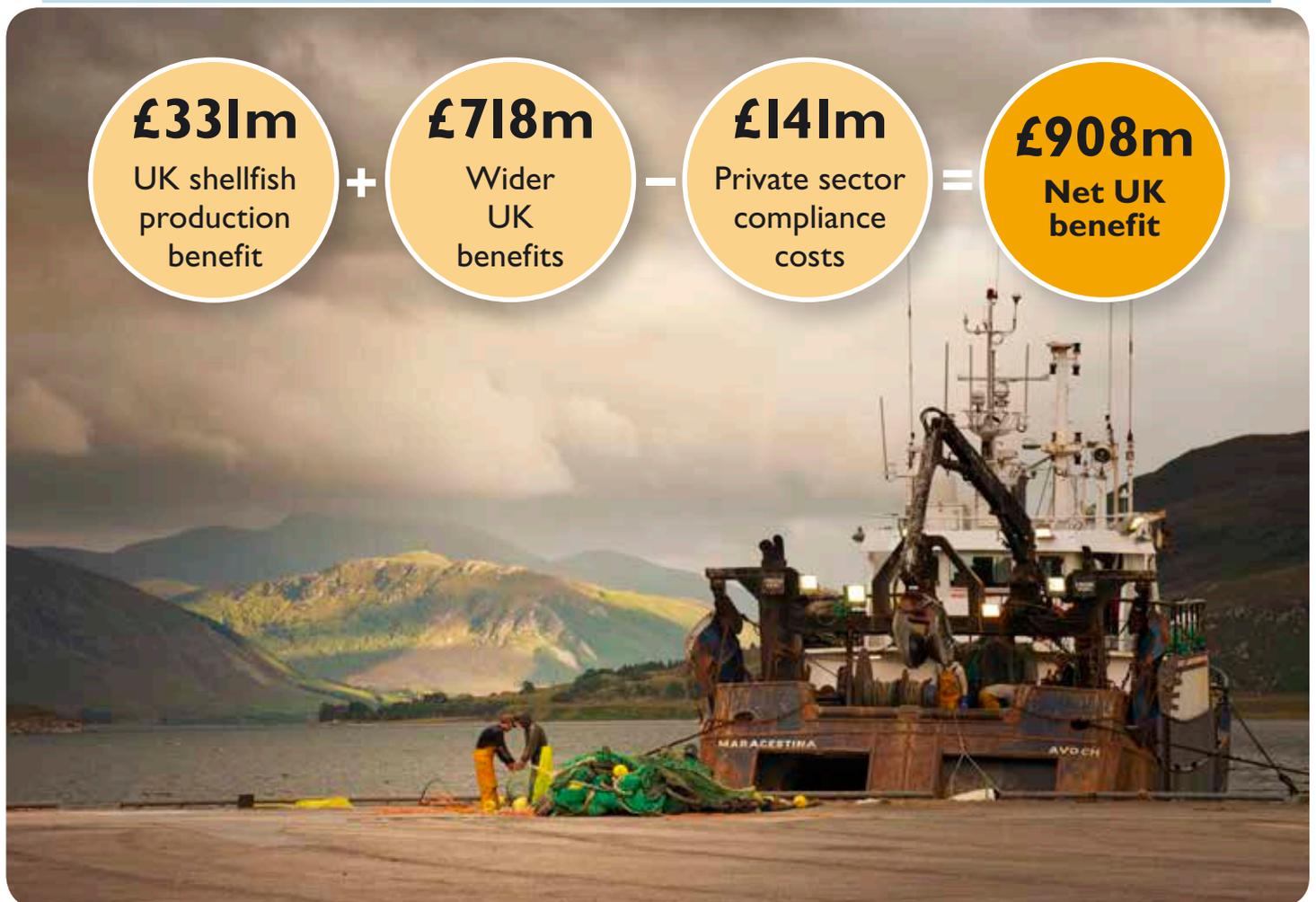
From ban to benefits – NERC science boosts UK economic growth by reducing pollution

The UK's seas are an important source of food, through both fishing and fish-farming, with families spending £6.3bn on seafood in 2015. Yet the seas face many pressures. One case is the use of anti-fouling agents by the shipping and boating industry. These agents prevent organisms such as barnacles and algae attaching to vessel hulls, so improving fuel efficiency and cutting maintenance costs. Before 1987, the use of Tributyltin (TBT) and similar anti-fouling chemicals caused severe harm to shellfish and other marine life.

Decades of research at the NERC-funded Marine Biological Association and Plymouth Marine Laboratory, among others, made a fundamental contribution to the UK successfully banning these harmful pollutants. Ground-breaking studies of their negative effects and crucial UK-specific insights opened the way to evidence-based regulation, which accelerated the recovery of damaged ecosystems.

Investment

NERC funding on TBT-related research has totalled an estimated £3.9m since 1981.



Martin McCarthy/istockphoto.com

£4m
approx. NERC
investment
1981-2015



Alan Lagadu/istockphoto.com

Impact

Based on NERC science, TBT was banned for small vessels in 1987, which was extended to all vessels in 2008. NERC-commissioned analysis by Deloitte estimated that these bans generated a net £908m in environmental, social and economic benefits up to 2014, with between £173m and £236m specifically attributable to NERC science. The £908m net figure includes:

- **£331m benefit to the UK shellfish industry and its supply chain** between 1987 and 2014. The banned chemicals seriously compromised the health and therefore the profitability of UK shellfisheries. Regulating their use triggered a surge in shellfish production, 60% of which takes place in Scotland, Wales and Northern Ireland.
- **£718m in wider UK benefits** over the analysis period. The bans enabled many marine species to recover, with the following benefits:
 - o £168m of value for anglers and divers from the species and habitats previously damaged by anti-fouling contamination.
 - o £550m of value from recycling of nutrients by species that were previously damaged by contamination, supporting the marine environment and the benefits that it generates.
- **Total compliance costs of £141m** over the entire period. Although the bans initially led to extra costs for ship operators, they also stimulated innovation that led to more effective, longer-lasting anti-foulants.