

# AQUACROSS Case Study 8: Ecosystem-based solutions to solve sectoral conflicts on the path to sustainable development in the Faial–Pico Channel, Azores

## Summary for Local Stakeholders

The interdisciplinary research project [AQUACROSS](#)<sup>1</sup> supports European efforts to protect biodiversity in Europe’s lakes, rivers, coasts and oceans. These aquatic ecosystems provide numerous economic and societal benefits to Europe – but they are at risk of irreversible damage from human activities. To counter this and to support achievement of the EU Biodiversity Strategy to 2020 targets, AQUACROSS has developed practical guidance on identifying threats to biodiversity, understanding links between ecosystems and the services they provide, data management, modelling and scenario development, and policy analysis, which fit together as parts of the integrated AQUACROSS Assessment Framework for ecosystem-based management of aquatic ecosystems<sup>2</sup>. We have developed, tested, and applied this research in eight case studies across Europe to solve local biodiversity challenges. This brief summarises our work in **Case Study 8: The Azores**, and makes recommendations for local policy.

### Balancing biodiversity, fishing, and tourism in the Faial–Pico Channel, Azores

The Faial–Pico Channel is a richly biodiverse Marine Protected Area (MPA), covering 240km<sup>2</sup> of North Atlantic coast and ocean between Faial and Pico islands, in the Azores, an EU Outermost Region. Despite a 30 year history of increasing international, Azorean, and local protection for the area, biodiversity in the MPA continues to decline. That decline is in part due to numerous human activities at place in the Channel that place pressure on the ecosystem, especially fishing and swiftly increasing tourist numbers. Locals



Figure 1: The Faial Pico Channel, Azores (Credit: Ben Boteler)

value the Channel’s biodiversity but they have different objectives on how it should be managed. Managing the Channel is further complicated by the many decision-makers involved: the Faial and Pico Island Nature Parks, the Azores Regional Directorate for the Environment, the Azores Regional Directorate for Sea Affairs (DRAM), and the Regional Directorate for Fisheries are all involved in trying to meet local (i.e. Faial and Pico Island), Azorean, Portuguese, and EU policy targets.

**Our aim:** to collaborate with local stakeholders and policy-makers and apply the AQUACROSS Assessment Framework to develop measures that protect the long-run sustainability of the Faial–Pico Channel ecosystem whilst balancing the objectives of fishers, tourism operators, and other local stakeholders.

<sup>1</sup> AQUACROSS (Knowledge, Assessment, and Management for AQUAtic Biodiversity and Ecosystem Services aCROSS EU policies), 2015-2018, has received funding from the European Union’s Horizon 2020 Programme for Research, Technological Development and Demonstration under Grant Agreement no. 642317. More information: [aquacross.eu](http://aquacross.eu)

<sup>2</sup> All AQUACROSS guidance and outputs are freely available online at <https://aquacross.eu/outputs>

### Step one: identify policy objectives, synergies, and conflicts

We assessed local environment, fishing, and tourism policies to understand how they affect biodiversity in the Channel. While local policy already targets sustainability, together with local policy-makers and stakeholders, we identified three priorities for improvement:

- **Coordinate:** build closer links between Directorates
- **Integrate:** manage the Channel as one ecosystem – including social and ecological aspects
- **Monitor and adapt:** monitor biodiversity in the Channel to support policy

### Step two: understand stakeholder objectives

While local stakeholders have a few different priorities for the Channel, a key conclusion of our work is that they agree on more than they disagree; they share the following key objectives:

- The long-term **resilience** and **sustainability** of the Faial–Pico Channel
- **Monitoring** and **compliance**
- **Ongoing participatory management** of the Channel, with representative stakeholder input
- **Simplified management** that considers every sector’s wants and needs, and clear communication.

### Step three: understand the social–ecological system

Biodiversity in the Faial–Pico Channel is affected by the society that surrounds it: human activities like fishing and tourism place pressures on the Channel. These pressures affect the ecosystem’s health and its ability to deliver valuable ecosystem services, such as fish and recreational experiences, which drive human activities and responses. Together with stakeholders, we aimed to understand this system and all of its complex interactions, so that we could identify effective ways to sustainably protect the ecosystem and improve outcomes for the local community. Based on research, expert and stakeholder input, Figure 2 summarises the key social and ecological elements and links in the Channel.

### Local stakeholders and AQUACROSS: Co-creating solutions

Local stakeholder participation and engagement was central to the AQUACROSS project. As well as through ongoing interviews, meetings, and feedback, stakeholders – including recreational and commercial fishers, diving operators, environmental NGOs, scientists, and representatives of all relevant Regional Directorates – identified issues, shared their views, and provided input and feedback at two workshops:

*Stakeholder workshop 1 – Horta – 3<sup>rd</sup> of October, 2017:* 31 local stakeholders discussed the current and future management of the Faial–Pico Channel MPA, and how science and local knowledge can support policy – read the [summary and conclusions](#).

*Stakeholder workshop 2 – Horta – 23<sup>rd</sup> of May, 2018:* 18 local stakeholders collaborated on a concrete plan for stakeholder-based management of the Faial–Pico Channel MPA, and prioritised and developed measures to managed the Channel – read the [summary and conclusions](#).

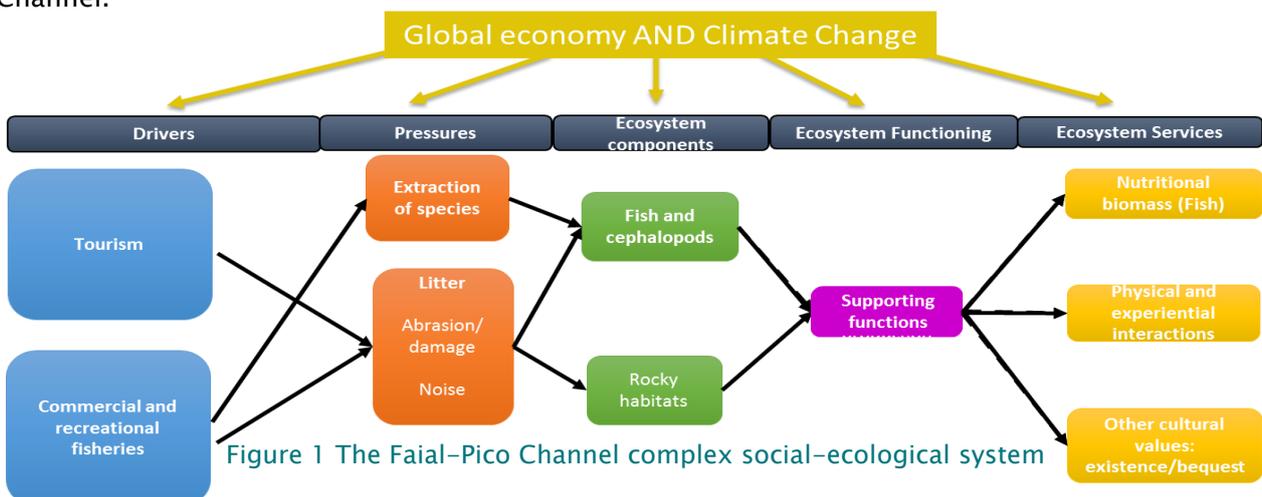


Figure 1 The Faial–Pico Channel complex social–ecological system

#### Step 4: identify future challenges (2018–2050)

Azorean stakeholders and policy-makers want to ensure that the Faial–Pico Channel is healthy and resilient in the future. To plan for the future, we drew on our understanding of policy and stakeholder objectives and priorities, the Faial–Pico Channel, and stakeholder expertise to identify what 2018–2050 is likely to bring to the Channel:

- **Climate change** will impact all sectors, increasing variability and uncertainty.
- The **global economy** will continue to drive ongoing – but fluctuating – growth.
- **Tourism** will continue to grow economically – with more visitors, income, and infrastructure.
- These changes mean **marine biodiversity** will be under increasing pressure in Faial–Pico Channel.
- **Commercial fisheries** and **recreational fishing** will remain central to local life, but sensitive to

#### Local policy solutions evaluated

1. **Increased scientific monitoring of biodiversity**
2. **Increased stakeholder participation through a Stakeholder Advisory Group** consisting of representatives of all sectors.
3. **Integrate and coordinate Channel management** through a Marine Protected Area management plan and policy coordination group.
4. **Clear communication and enforcement of existing regulations** – e.g. through simple information panels and surveillance cameras
5. **Implement a sustainability tax** – either a tourism tax or diving fee.

uncertain trends in fish stocks and biodiversity

Overall, we concluded that all stakeholders depend on a sustainable and resilient ecosystem. Given the large uncertainties and unknowns, stakeholders and policy-makers need to be adaptive – employing regular monitoring, evaluation, and if necessary, management changes.

#### Step 5: identify and evaluate a plan

With stakeholders, our final step was to prioritise, develop, and evaluate measures and policy instruments to improve Channel management of biodiversity (*see blue box*).

Our evaluation showed that the suggested local policy recommendations should positively impact the sustainability of the ecological side of the Faial–Pico Channel social–ecological system. The recommendations also target the sustainability of the social system, aiming to transform social and governance settings by increasing knowledge, stakeholder participation, and policy coordination and integration – all which supports the ongoing sustainability and resilience of the Faial–Pico Channel.

#### Conclusions and next steps

Local Azores policy-makers are already operationalising this work as they develop new management plans for the Faial–Pico Channel and other Azores Marine Protected Areas. AQUACROSS is also exploiting these Azorean lessons internationally. Effective and equitable management of Marine Protected Areas is important worldwide, and the Azores experience demonstrates that local stakeholders support effective and equitable management by clearly identifying challenges and priorities, co-creating solutions, providing low-cost knowledge and expertise, and through ongoing monitoring, enforcement, and evaluation of the impact of management.

#### Final local policy recommendations

- **Continue to increase stakeholder participation:** stakeholders want to contribute to management; a representative Stakeholder Advisory Group would increase equity, transparency, reduce conflict between stakeholders, and support adaptive management.
- **Integrate and coordinate Channel management:** manage the Channel as one ecosystem, and coordinate sectoral policy objectives and enforcement to increase alignment, effectiveness, and efficiency.
- **Adaptive management for an uncertain future:** increased monitoring and regular evaluation and revision of Channel management (with stakeholders) will enable adaptive management that adjusts to new information and future challenges.