

Co-funding SARF projects

What is SARF?

The Scottish Aquaculture Research Forum (SARF) supports applied research and development (R&D), together with education and dissemination of project results, to encourage the sustainable development of aquaculture in Scotland.

SARF is an independent Limited Company (SC267177) and Registered Charity (SC035745) established in 2004, as one of the key priorities of the Strategic Framework for Scottish Aquaculture.

Who is involved?

SARF Member organisations include Central and Local Government, Regulators, Industry bodies and NGO's. Each of SARF's 17 Member organisations nominates a Director to the SARF Board. Seafish has been a Member organisation from the outset.

SARF commissions research that is strategic. While primarily a Scotland-focused organisation, much of the research can be applied or implemented anywhere in the UK, thereby benefiting the seafood industry as a whole.

How does SARF allocate its funds?

SARF Members are requested to submit their research requirements annually. The SARF Board prioritises these requirements and issues a call for proposals in selected project areas. All R&D proposals are subject to internal and independent external peer review and the SARF Board takes these

reviews into account when deciding whether or not a proposal should be supported.

Outputs from SARF research projects have and will be used to directly inform environmental, food hygiene and planning regulation. Some projects have led to changes in fish husbandry and welfare practices. Many projects are designed to deliver strategic management tools that will make a contribution to more objective, efficient and effective aquaculture regulation and development.

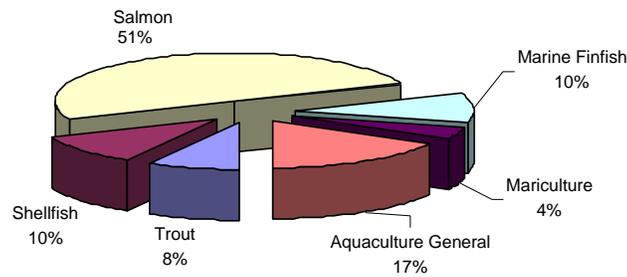
What funding has been allocated?

Between 2005 and 2009, SARF has allocated £1.86 million to 39 projects with a total cost of £3.24 million (i.e. 57% of total project costs). The split between each sector can be seen in Figure 1.

Seafish has been one of the key funding organisations, providing £50k per year from 2004 to 2008. SARF core income from its Member organisations has been around £400k per year so this gives a multiplier of around 8:1 on the Seafish contribution per annum. Taking into account the additional 2:1 multiplier against projects funded (see above), this has been excellent value for money. What should also not be forgotten is the additional income and 'in kind' support from the Scottish aquaculture sector for specific projects which increases this multiplier even more.

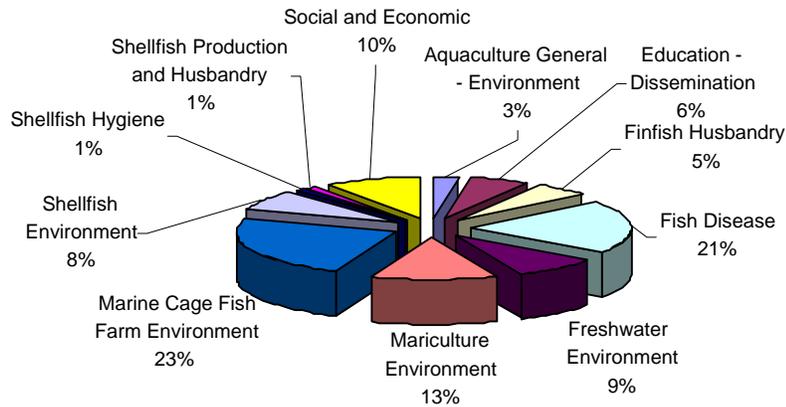
How funding is allocated

Figure 1 - Percentage Total Project Cost by Main Sector



Since its inception, SARF has made a significant contribution to applied R&D designed to improve our understanding of the environmental impacts of aquaculture (Figure 2). The proportion of SARF funding committed to work in this area is three times that made at the UK level.

Figure 2 - Percentage Total Project Cost by Category



Education and dissemination of research results

Results of research projects are freely available on the SARF website (<http://www.sarf.org.uk>). Many of the project results also appear in peer-reviewed publications in scientific journals.

In association with the Royal Society of Edinburgh and the Norwegian Society of Science and Letters, SARF has organised an International Symposium – Scottish Aquaculture: A sustainable future (Edinburgh, April 2009).

How does SARF R&D meet Seafish's strategic themes?

Responsible sourcing:

The co-sponsored R&D helps to ensure that aquaculture practices meet strict legislative, environmental requirements, are sustainable and have minimal impact on the environment. Maintaining and improving fish health and welfare is both a moral obligation and fundamental to sustaining a commercially competitive industry. SARF also supports important pivotal work on feed sustainability.

Cost reduction:

Developing and improving production methods is integral to the sustainability of aquaculture. Our understanding of many aspects of the life cycles and optimal culture conditions required for commercial production of some existing and emerging aquaculture species is lacking. Through targeted research, SARF projects are addressing some key production bottlenecks, have looked specifically at issues related to waste reduction within the industry, and carried out work that should reduce the cost of regulatory compliance.

Sales revenue:

SARF has a commitment to the socioeconomic aspects of the R&D it supports. This helps to protect revenue generated from coastal communities where aquaculture can be the major industry. For example, good water quality underpins the viability and reputation of the shellfish cultivation sector. SARF has worked closely with both industry and regulators, such as Food Standards Agency Scotland (FSAS), to find pragmatic and cost effective ways of addressing shellfish hygiene problems. Through work on improving survival in the early life stages of marine finfish, SARF has helped to improve the viability of this sector and its future prospects for expansion as demand increases. Some SARF projects are also involved in the development of novel technologies which may improve the sales revenue of the production sector as well as being generators of revenue in their own right.

SARF R&D supporting shellfish and marine finfish sectors

This list provides examples of the research that has been commissioned and that is most appropriate to marine aquaculture. Further details and reports of these and all the other projects commissioned by SARF can be found on the website (<http://www.sarf.org.uk>).

Projects addressing environmental & socioeconomic aspects

- Site optimisation for aquaculture operations.
- Developing GIS-based tool to assist planning aquaculture developments.
- Coastal assimilative capacity for amalgamating fish farm chemicals/organic pollutants.

- Review of environmental quality standards for use in assimilative capacity model development.
- The development of modelling techniques to improve predictions of assimilative capacity of water bodies utilised for marine caged fish farming.
- Further development of assimilative capacity and carrying capacity models for water bodies utilised for marine bivalve and caged fish farming.
- Assessment of novel species risk to biodiversity (discussed within the Scottish Biodiversity Implementation Plans.)
- Assessment of appropriate thresholds for the potential triggers for Environmental Impact Assessments (EIA) for shellfish farms.
- A systematic assessment of the environmental impact of Scottish shellfish farms, including benthos, water column and relevant special interactions.
- Detailed review of current status and future options for strategic waste management and minimisation in aquaculture –
- Socio-economic assessment of potential impacts of new and amended legislation on cultivation of fish and shellfish species of current commercial importance.
- Development and delivery of a proposal for re-establishment, on a pilot scale, of a native oyster population in Scotland.

Acknowledgement

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Projects on technological improvements

- Cod broodstock nutrition, - the role of essential fatty acids ie arachadonic acid.
- Vaccine performance/efficacy in gadoids measured by cell mediated immune responses.
- Stock management strategies to optimise growth potential - on-growing of marine finfish.
- Improving understanding of species specific requirements for marine finfish cultivation.

Projects protecting reputation

- Development of practical but meaningful welfare indices for cod on-growing.
- Identification of sources of faecal pollution in Scottish coastal waters to help clarify causes of recent deterioration in the quality of Shellfish Harvesting waters (to be associated with the EU REDRISK Project).
- Consumer attitudes to feed sustainability.

Widespread benefits to the seafood sector

SARF is now established as a key body within the scheme of UK-research funding and is the only one specifically focused on the aquaculture industry. Close working relationships have been developed with other strategic research funding bodies in the UK to help ensure that effort is co-ordinated. In addition to providing applied research outputs, SARF projects have also proven valuable in bringing together key stakeholders and helping to forge a common understanding of technically difficult and politically and commercially sensitive issues.

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supporting the seafood industry for a sustainable, profitable future