

# POLICY BRIEF

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## The future of fish production in recirculation aquaculture systems in Germany

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In Germany, there is a small but enthusiastic and committed group of fish producers in recirculation aquaculture systems (RAS). This is reflected in the production volume, which doubled between 2012 and 2016, while the number of plants increased by only 10%. Despite this increase, production levels in Germany are very low by international standards. There is, therefore, great potential for further production, as RAS facilitate the production of high-quality proteins for human consumption in a way that is sustainable in both environmental and animal welfare terms. Currently, most of the enterprises in Germany are still pioneers in the field of intensive fish production. The authorisation of new plants is stagnating, with many subsidised innovative plants encountering difficulties or failing. The main reasons for this are bureaucratic, especially a complex authorisation process and very tough legal regulations and standards, as well as plant technology, economic efficiency and marketing.

This policy brief has been developed from research conducted as part of the H2020-funded project, Sufisa (Sustainable finance for sustainable agriculture and fisheries). Its main focus has been to access the perspectives of the fish farmers themselves, together with a range of stakeholders who have a direct interest in the aquaculture sector in Germany. To that end a series of interviews, focus groups and workshops were conducted between January 2016 and October 2018. Further details are available from the main project website: <http://www.sufisa.eu/>.

This research is based on work done in Northern Germany, but is likely to resonate in other areas of Germany that have recirculation aquaculture production. It refers to the objectives and strategies of the National Strategy Plan for Aquaculture - based on the Commission's Strategic Guidelines for the Sustainable Development of Aquaculture in the EU - and the aquaculture strategy of the German agricultural research alliance (DAFA). The following key messages are intended to draw attention to the main issues that have arisen from the research and which have potential policy implications for the future viability of the RAS sector in Germany.



<https://hnee.de/SUFISA>



This policy brief is the result of research conducted as part of the EC-funded SUFISA project (Sustainable finance for sustainable agriculture and fisheries), H2020 Grant Agreement 635577. The responsibility for the information and views set out in this policy brief lies entirely with the authors.

## Key messages

- Fish farmers emphasize that there is still a lot of ignorance and misperception about modern aquaculture at all levels. This has major implications. First, that a lack of technical knowledge on the part of authorities hampers and impedes authorisation procedures, as well as the handling of regulations and standards. As a result, in most regions hardly any new plants are being approved. For existing plants, this primarily causes additional costs and leads to a lack of scope for intensification and expansion. A lack of understanding of the key issues by many authorities also leads to personal preferences playing an overly important role in the decision-making process, rather than scientific findings or political guidelines. Second, the general perception of RAS amongst consumers in Germany is rather negative. As such, changing consumer perceptions and increasing sales is one of the major challenges for both existing and new RAS plants. Thus, knowledge transfer and broadening understanding of RAS is essential at all levels, if the sector is to develop to its potential. This requires a comprehensive awareness-raising strategy that includes all of those involved: practitioners, advisors, investors, administrators, researchers as well as food processors, retailers and consumers.
- Political solutions are needed in order to improve the framework conditions of local RAS fish producers in Germany. While on the one hand there are growing business opportunities related to an increased consumer willingness to buy local food; on the other, aspiring RAS producers are constrained by the need for high levels of capital investment in both technology and consolidation. RAS production is also resource intensive in terms of factor costs, especially highly qualified staff, energy and fodder, prompting some in the industry to suggest that there should be financial support to aid expansion of RAS production in Germany (such as through an exemption from the renewable energy (EEG) levy).
- While much has been done for the technical development of RAS plants, it is apparent that there are no off-the-shelf solutions. In this respect, it is crucial for the success of the sector that the development of the plant is matched to the specific RAS, as well as to the species of fish being produced. This requires a coordinated network of scientists, plant constructors, plant operators and consultants.
- In Germany, RAS production is strongly regulated, with producers having to justify themselves to authorities at a variety of levels (regional and county); furthermore, requirements and support vary greatly between administrative areas, leading to inconsistent cost structures and consequently to competitive disadvantages and frustration among both producers and investors. Moreover, the current subsidy policy prevents cooperation across federal states. Similarly, at European level, where although fisheries policy guidelines apply throughout Europe, their implementation varies from country to country. This tendency is also evident at a global level, where in many cases fish farmers in Europe have to comply with tougher environmental, animal welfare and social standards than those outside Europe, resulting in unequal competition. Policy is needed to harmonise production practices within Germany, the EU and globally in order to better support regionally produced high-quality fish from RAS.
- It is important in terms of policy to consider RAS as being integral to a sustainable food system, and to support it accordingly. There is clear evidence that RAS production can contribute to a sustainable food system (e.g. through reducing the pressure on sensitive marine ecosystems, reducing CO<sub>2</sub> emissions due to shorter transportation distances), dependent on the choice of technology (modern bio-filters, low fresh water requirement), the choice of fodder (GMO-free, free of toxins, from sustainable and local agriculture) and the use of renewable energy.