Food security

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1. Goals

- To shed light on the potential of aquaculture to augment food security in different regions of the EU.
- To provide arguments on when aquaculture adds value to society and provides a service to the environment.
- To formulate joint advice from NGOs and industry on why and when licenses and space for aquaculture should be given priority, in light of these arguments.

2. Rationale

Food security refers to food production and input supply chain within the EU in a volume adequate to support our survival in times of crisis. It includes food safety, nutrition, and affordable food. Food security is achieved when production and input supply are distributed over all the regions in all member states to minimize transport dependence, to spread knowledge on how to produce, and to distribute risk. Aquaculture in the EU now provides 10% of the seafood consumption and has a key role in increasing food security and reaching this goal, both directly through farming for production of seafood for consumption and indirectly through restocking wild populations that can serve as food stock. To realize this, increasing sustainable primary production and obtaining licenses and access to space must be much easier.

Perspectives on why aquaculture plays a key role in food security:

1. The food supply system and consumers' preferences
2. Animal welfare
3. Environmental protection
4. Investments, jobs, and taxes
5. Food security and income

A. The food supply system and consumers' preferences

Food has traditionally been captured or harvested from a natural ecosystem, and nature has a fantastic way of providing us with a variety of food. We are accustomed to having a lengthy menu from land and from the sea.

Consumer preferences are dependent on tradition, taste, nutrition, and awareness—concerns for society, the environment, and animal welfare, but also, of course, the cost. When the natural ecosystem provides us with what we need at a low cost, we do not farm.

When supply is insufficient and the cost of harvesting gets too high, we begin to manipulate the ecosystem and farming begins. In doing so, we may cause an imbalance in the natural ecosystem which then affects other parts of the ecosystem. We can allow that for a long time without noticing, for example when it happens under the surface of the water in the aquatic environment. Today, because we have begun to notice the effects of agriculture on our bodies of water, we are obliged to take action for biodiversity and incorporate all sorts of aquaculture into the total food supply system. How do we manage nutrients in a phase between agriculture and aquaculture to optimize food output? The aquaculture we need should be in a regional balance with agriculture in a way that the total system provides a variety of food that can satisfy the food security of populations without negatively affecting biodiversity in the environment.

The EU can contribute significantly more to the global food supply—as a first step, by striving for a higher degree of self-reliance and decreasing our dependence on food that can be needed in other parts of the world. Throughout history, many examples of starvation have occurred in Europe, and we have never been more dependent on imports than we are now, especially in aquatic products. Europe's previous famines were caused by reliance on non-resilient local production and global supply chains that were cut off by war and plagues.

Of the EU land area, 40% is used for agriculture in some form. For aquaculture, only a very small part of the suitable ponds, lakes, and sea areas are dedicated to this activity. Current agriculture production uses an excess of nutrients in relation to the nutrients contained in the harvested products; the rest is loaded into nature and finally ends up in EU waterbodies, where it adds to the historical debt. This indicates that we could produce more food without increasing the nutrient load using species that provide ecosystem services by absorbing surplus nutrients. Aquaculture can harvest the nutrients of the sea or freshwater without adding excess nutrients to them. The various menus of products produced in aquaculture can, in a proficient way, circulate the nutrients that have been lost from agriculture to the EU waterbodies and in this way contribute to food security while fulfilling an ecosystem service. If we consider aquaculture in a magnitude that returns the nutrients lost from agriculture back from the sea and freshwater, we will have a diverse menu that clearly represents for the consumer not only a circular economy but also circular gastronomy.

Aquaculture, like other forms of animal farming, contributes most to food security by contributing to protein supply. Aquatic species lower down on the food chain increase ecological efficiency, and further benefits are achieved with extensive or semi-intensive forms of aquaculture. For example, when farming macro-algae, rope-mussels, and pond-fed carp in polyculture, food is obtained from the natural environment that would otherwise be unavailable to people.

Fed aquaculture can better contribute to food security by using feeds that are not human-edible and that pose no risks to biodiversity and animal welfare. Further development of alternative feeds, which do not use ingredients that could be directly consumed by humans (i.e. soya or fishmeal and oil from wild-caught food grade fish) is needed. Examples include shellfish, macro-algae, micro-algae, bacterial protein, insects, and an even greater use of trimmings as a source of fishmeal and fish oil. Aquaculture products should be labelled and certified with information that consumers understand and can choose from. This is further described in the MAC Advice on Consumer Information.

Consumers are used to a variety of food, and, through the current food supply system, society is gaining greater ability to choose. The economy and jobs are balancing on the current situation. Any change must move slowly so as not to get out of hand. Slowly, we can change and make our way towards a more sustainable goal with food production shifting towards a system that fits the productive potential of our water and land and away from the market demands of consumers who see little or no connection between the food they purchase and the production impacts inside the EU, and even less impact from all the imported products from around the globe.

An ecosystem in balance can deliver many products; the higher up the trophic ladder, the fewer kilos of it can be taxed. At the bottom of the food chain, a lot more can be used for human consumption without jeopardising the balance of biodiversity. The most efficient way to feed the population with edible protein would therefore be to encourage people to eat more plant foods, which can include products from seaweed and micro-algae. This is a vital priority for food security. Other fairly low trophic species include filter feeders and bivalves that harvest the natural phytoplankton near the base of the food chain.

Consumers' habits of choosing dishes do not change overnight. To get more flexibility, we can consider the possibility of using low trophic species for feeding other animals. We lose some efficiency, but we gain more choices for a balanced diet with long-chain fatty acids and get back the diversity on the table to satisfy the consumer who is not willing to immediately give up grandmother's recipes. By doing so, we gain time to try to change consumers' interest towards being more eco-friendly and eating directly the low trophic menu, and we retain the ability to start the long process of bringing nutrients from the

sea or freshwater back to the table. Another benefit, for the consumer who still wants to eat as he always has, would be having not only imported products to choose from but products produced with high EU traceability and controllable standards.

Some consumers can eat low trophic aquaculture species like filter feeders, but the more fish that are farmed with low trophic aquaculture species as feed, the larger the production of this feed and the less will be the reliance on highly refined feed ingredients. The larger the production, the larger the economy, and the more people involved in developing the business, the more likely it is that sufficient supply will be provided to the farmers. This production inside the EU renders higher food security and an increased focus on serving our fish farms with feed produced from extensive aquaculture.

Licenses and access to space for sustainable primary production that promotes local biodiversity should be prioritized for all aquaculture that is extensive, semi-intensive, or fed by feed that does not compete with humans for food. Such production provides ecosystem services (for example, in absorbing excess nutrients) and thereby contributes to a higher degree of food security and self-reliance.

B. Animal welfare

EU food production aspires to higher animal welfare goals in relation to many other parts of the world from which imported food originates. While this is ethically sound and can be promoted in marketing, better animal welfare also leads to more robust animals that may be less vulnerable to disease, directly adding to food security and predictable profit.

However, to be able to use animal welfare when promoting aquaculture in marketing, the EU must take steps to ensure that it has truly become a world leader in animal welfare and is continuously improving standards in aquaculture at all stages, including rearing, transport, and slaughter. The effect on global animal welfare in production will be greater if an EU industry, using increased knowledge of practical implementation on the farms, can show profit while adhering to the highest standards of animal welfare. To maximise global animal welfare, the EU production’s high standards focusing on results should be promoted.

Licenses and access to space for primary production aquaculture should be given priority to substitute imported seafood with EU production that shows documented high standards of animal welfare.

C. Environmental protection

The overall aim for EU environmental politics must be to leave a society to the next generation with the big issues of environmental problems solved, without causing increased health and environmental problems beyond the EU's borders.

This is in accordance with the European 'Green Deal' which aims for a circular economy and an end to the importation of products that do not meet EU environmental standards.

Licenses, access to space, and simplified procedures should be given priority for primary production aquaculture to substitute imported seafood with EU production that shows documented high standards of environmental protection and provision of ecosystem services.

D. Investments, jobs, and taxes

Investments in aquaculture are for the long term, as the types of aquaculture that comply with sustainability standards do not offer a quick return on investment. Secure and long-lasting licenses are essential to attract investors to new aquaculture.

Many jobs could be created inside the EU with increased aquaculture production, jobs that are now performed in other parts of the world. Workers' rights, protections, and working conditions inside the EU are high in comparison to many of the world's regions where imported food originates.

Tax revenue is essential to run the society. Companies pay taxes on employees and on profit. To ensure the best conditions for companies to survive and develop in accordance with challenges, they must have predictable profits. Profit that contributes to society by taxation in good times can be a buffer for the company's survival in hard times. Companies who are primary producers become competitive and pay more taxes when they could spend more time producing and less time occupied by administrative burdens.

Primary production aquaculture that needs investors, pays taxes, creates new jobs in the EU, and at the same time increases the global welfare of workers, in addition to the priorities mentioned above, should be given priority for long-term licenses and simplified procedures.

E. Food security and income

The 'Farm to Fork' strategy points out that the income of primary producers of food in the EU lags behind compared to average overall workers' income in the EU. This, in combination with the fact that many small farmers do not even declare income for persons in the family doing production work, constitutes a threat to food security. If all labour hours used by especially small producers in primary production, paid and unpaid, are divided by the net income, the hourly salary can be much lower than minimum salaries in effect in the EU. This means that they are likely to change jobs if opportunity appears. Thus it must be taken into account that the income for primary producers has implications for food security.

Below are references to the Green Deal (GD), the 'Farm to Fork' strategy (F2F) and the European Parliament's report on sustainable aquaculture (A8-0186/2018) (EP).

- The GD recognises the need to maintain supply security and competitiveness.
- The EU's goals are to reduce the environmental and climate footprint of the EU food system and strengthen its resilience, ensuring food security in the face of climate change and loss of biodiversity (F2F)
- To ensure food security, nutrition, and public health—making sure that everyone has access to sufficient, nutritious, sustainable food that upholds high standards of safety and quality, plant health, and animal health and welfare, while meeting dietary needs and food preferences (F2F)
- The Commission will assess the resilience of the food system and develop a contingency plan for ensuring food supply and food security to be put in place in times of crisis (F2F).
- Available data show a growing gap—estimated at 8 million tonnes—between the level of consumption of seafood in the EU and the volume of captures from fisheries; sustainable aquaculture can contribute to ensuring long-term food and nutrition security, and to the overall objective of filling the gap between consumption and production of seafood in the EU (EP).
- Freshwater aquaculture is still an insufficiently explored opportunity for improving food security and developing rural areas (EP).
- The Commission recognises the potential of aquaculture to contribute to food and nutrition security for EU citizens (EP).
- Appropriate spatial planning should take into account all sectors (holistic approach),

sustainability issues, and food security (EP).

- Environmental sustainability must go hand in hand with social and economic sustainability, and due consideration needs to be given to the current and potential contribution of aquaculture to food security in the Union (EP);
- And—most importantly—aquaculture has a fundamental role to play in our society: it should contribute to the preservation of the food production potential on a sustainable basis throughout the Union to guarantee long-term food security, as well as growth and employment for Union citizens, and contribute to meeting the growing world demand for aquatic food (EP).

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