

Presentation Wim van Eijk : Policy advisor of the Dutch Fish Product Board and general secretary of the Dutch Association of Fish Farmers.  
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### “Future possibilities sustainable fresh water fish farming”

With great pleasure I will inform you about the opportunities and some threats in fresh water aquaculture and about the way we fish farm in the Netherlands.

Let me introduce myself, I am Wim van Eijk and I am a policy advisor of the Dutch Fish Product Board. The Product Board was established at the request of the fishery branch. The board operates in the area where industry and policy meet. It is an umbrella where all of the different organisations meet. In this way, the various branches of the industry can closely keep in contact with each other. My particular interest is aquaculture and inland fisheries. Directing policy is only possible if you are aware of the possibilities and the wishes of the industry involved, the environmental and non-governmental organisations. Fishing and fish farming can only be done if social accepted.

It is clear that the supply of capture fisheries will remain stagnant in the near future. The low availability of some pelagic stocks leads already to restrictive measures. As an example you can name cod in the North Sea. There is a move going on from fisheries to aquaculture. Fish farming seems to be a possible solution for the increasing demands for fish now that there are EU recovery plans for some wild species.

Aquaculture can make an increasingly positive contribution to global fish supply, it can relieve the pressure on deteriorating wild fish stocks and can fulfil the ever-increasing demand for protein to nourish the growing human population. It is most likely that the production in Europe can and will grow, because there is enough ambition and potential.

Aquaculture however is standing at a crossroad in its development. Fish farming could be the answer on the gap between supply and demand but it depends on how the sector will tackle the problems. We may not make the same mistakes as in the intensive cattle and poultry sector. Fish farming is still developing and so we take into account “from the beginning” the demands regarding to food safety, animal welfare and the environment. Many people look to the growth in aquaculture to

relieve pressure on the wild fish stocks and allow the wild populations to recover. Yet - by using increasing amounts of wild-caught fish to feed farmed fish (fish oil/-meal), other people say that the aquaculture industry is actually increasing the pressure on the wild fish population. NGO's (non governmental organisations) put forward that aquaculture poses a threat to wild fish stocks. Because of this, there is an increasing interest in farming herbivorous fish such as carp or tilapia.

Here's an additional point we have to focus on: the use of veterinary medicines in aquaculture regarding to the pollution of the (aquatic) environment. However we are using so little that now the pharmaceutical industry is not interested anymore to develop and to register new animal medicines. The availability will be probably the new problem.

My expectations are that an increasing part of the fish for consumption will come from aquaculture. This makes an accepted and a responsible way of fish farming the more necessary.

But, I think we can realise such a safe and social accepted fish farming. New innovative production methods can bring relief.

Perhaps we must think of combinations of aquaculture with development projects of nature. We can think of new species or of other systems, like close systems.

The most important issue of modern aquaculture however is that it has to be driven by the demand of the market. The market is the only incentive of a sustainable development of the aquaculture sector. So it is essential to know who are our customer and consumer.

Therefore, research of the market is very important. More research is also needed for the introduction of new species and their production characteristics at all different stages of development.

Before beginning the production of any species a market study must be established. A "product definition" is very important. Is there a market and what are the expectations of that market: When, what size and how many of which species must be prepared for which specific (niche) market. Even a season, or a special day (like Christmas, Thanksgiving etc.) can be of importance. Production planning should be based upon these aspects.

Stimulating investments for an increasing production of usual species must be examined with care and may absolutely not lead to market disturbance. This happened already with several species. The introduction whether a new species or a new product should be preceded by a survey of the market.

The market changes all the time: In the Netherlands in the 19<sup>th</sup> century the advice was to eat salmon not more than 2 times a week. Not that it wasn't healthy, but to bring more variety in the diet, especially for servants.

Carp was eaten frequently in the beginning of the 20<sup>th</sup> century but today nobody eats carp anymore.

We face an enormous challenge to realise a correct balance between this various demand and the supply in order to achieve sustainable fish farming.

To achieve this balance between demand and supply is to develop a chain, based on update information and available data about the market.

Everybody in the chain has to take account of what the market nowadays requires. The market changes significantly in relation to food safety, the protection of the environment and animal welfare. The product must be healthy, safe, traceable and so on. This can only be realized by an integrated approximation of all concerned links in the whole chain.

Therefore fish farmers must join forces to create the best opportunities for the growth and the development of the sector.

In the European Union, we have now a strategy for sustainable development of aquaculture, which offers sufficient opportunities and possibilities for further development of European aquaculture. *(Mr Vamvakas informed you about this earlier this morning.)*

As Hungary, Poland and the Czech Republic will be members in the very near future, it is advisable to take this position into account.

One of the topics of the new strategy is guaranteeing food safety.

It must be said that farmed fish produced in the recirculation system is respecting the maximum levels for the contaminants in foodstuffs and in fish products (like dioxin and PCB's), because of the complete controlled process. Everything is under control: water quality, oxygen level, temperature, the feed etc..

But now there is an other discussion going on about the densities and the need of natural behaviour of the fish (it is one of the 5 freedoms, like freedom of hunger, freedom of stress, a.s.o.).

Recently in the Netherlands, we installed an Innovation Platform Aquaculture. Different parties like the government, science & research institutions and of course the sector will contribute to this Platform. The sector will be invited to come with new initiatives, (technical) improvements, new ideas regarding to new species (which are commercial attractive, etc.). All the proposals will be discussed and at the end it will result in a number of concrete model projects. Besides we will look to the barriers caused by all the rules. To start with innovations and the development of the knowledge and a healthy competition, it will lead us to a sustainable fish farming sector. I think the sector cannot do this alone and needs some support backside to achieve this target.

The tasks of the platform are:

1. to identify likely aquaculture projects
2. to formulate the national knowledge and research agenda and to take care of the realisation
3. to facilitate the realization of "Model projects" and to coordinate the spending of EU, national and regional funds and private initiatives.
4. to point out the obstructions in the development of the sector and discuss these with the involved institutions.

I expect a lot of this new Innovation Platform.

Today the consumers have a growing interest in how the product is made, where it comes from and when it comes about animals, animal welfare is a hot topic. Consumers are set on the way the animals were kept. Last mentioned includes the slaughter method, this must be as human as possible! However the small size of some fish at slaughter, as well as the large numbers involved, can make this difficult to achieve. NGO's like Animal Protection or WWF find many methods unacceptable. Therefore we had to develop a new method for eel and catfish (an electrocution method). The NGO's play an increasing and important role in the EU regarding to their influence on legislations.

Both captured fisheries and aquaculture are part of the current environment. The consumption use of natural resources is facing control of all thinkable (negative) ecological impacts on the environment.

Farmers - using open systems like ponds - has to find the best ecologically and suitable locations.

The choice of the location is very important but for new farms it is getting more difficult. I think governments have a key role in giving new permissions for fish farms. Ponds are not only for recreation, sport and tourism industry.

Environmental constraints are forcing more and more fish farmers to utilise recirculation systems. It makes it possible to farm fish in a sustainable way with hardly any impact on the environment ; Especially using the advanced system, which is developed in Denmark and the Netherlands. Both for fresh water species like eel, African catfish, and tilapia as for marine species like turbot, sole, sea bass/bream. The concept of this system is the control of the water quality, temperature, bacterial population and the (biological) treatment of the effluents. The water flow of the fish tanks goes first to a mechanical filter for the removal of solid waste fraction and next to a bio filter where the ammonia is oxidised by a nitrification process. The water is constantly purified and re-used all the time. The remaining liquid fraction is discharged into a sewer. At the end just a little solid material remains. This can be used as a fertilizer.

These systems seem to be an answer on the increasing demand by consumers in European countries that farmed fish should be raised more in harmony with the environment, in safe conditions and in using environmental-friendly systems.

We have to bring these environmental friendly techniques even more to perfection to minimize any harmful effects on the environment.

Something about fresh water species:

For Hungary, CARP will probably continue to grow steadily in response to the population growth in European countries and perhaps more for which is a demand in the world markets (Asia).

In the Netherlands, eel, catfish and tilapia are important species.

Concerning EEL: the centre of eel farming in the EU is the Netherlands. Other important countries are Denmark, Italy and Germany. German is the market for the bigger eel, more than 300 grams. Smoked eel is famous in our country. As it is not yet possible to breed eels, we are still depending on the wild glass eels. That makes the continuity uncertain. The EC published last year an action plan for the recovery of the wild stocks.

Regarding AFRICAN CATFISH. The African Catfish is already farmed in some countries. In the Netherlands a lot of cattle or chicken farmers who were looking for an other alternative for their farm started a catfish farm. The rapidity of the production growth weakened the stability of the market. This farming sector has been affected by price instability over the last three years.

In general: the growth of the fish (farming) industry should be smooth, following the market and accompanied by appropriate actions as promotion activities and viable development. (look at the success of the introduction of channel catfish in the USA).

Regarding TILAPIA. Tilapia is farmed all over the world in several different culture technologies, some of which permit farmers to produce tilapia at a relatively low cost. Tilapia has the potential to replace some marine fish. And what is important too, it is an herbivore (no fish oil in the feed is necessary). Farming tilapia in the EU means that you have to offer more than the (cheaper) import products, like 100% food safety, no residues, top quality...

Some conclusions:

The industry must develop in new advanced technology and make systematic efforts to open new markets and stimulate further demand in existing ones. Production costs are likely to be further reduced and the industry has to develop different products for new markets.

The current market demands a high quality, a healthy and a safe nutritious product throughout the year. The only way to realise this is the production of fish in recirculation systems. I think we have a little lead in the Netherlands because fish farming takes only place in closed systems, the so-called recirculation systems.

We must work hard to hold the consumer's confidence and the good image of the sector. Research pointed out that 10% of the consumers are positive about farmed fish, 10% negative and 80% are in between and think that it had to be good, they trust the responsible persons, but they are not completely sure. So the sector has to give good information.

I think it is possible to produce healthy and safe farmed fish products in a sustainable way, particularly in recirculation systems. This will be the future! Let us work on it. I wish you all success and I thank you all for your attention.