Innovation Project

Food and Agriculture Cluster

nordwest2050

Frozen Fish International: Climate-Adapted Management of the Fisheries Sector

The effects of climate change, such as ocean warming or the lowering of pH values, could lead to a reduction or migration of fishing stocks during the next 15 to 20 years, due to possible changes in the swarming and spawning behavior of the stocks. The bulk of the deep-freeze raw goods for the German fishing industry currently comes from countries which are not members of the EU. In the future, therefore, a more effective management of available resources and a stock-maintaining management of fish species for the supply of the market will be necessary.

The Need for Climate Adaptation

To date, Frozen Fish International (FFI) has used fish caught in the wild for its deep-freeze fish production. The risk exists that in the course of climate change, the stocks of these fish could drop or migrate elsewhere, as a result of such factors as the warming of the ocean or a drop in its pH value. That would reduce the available quantity of wild fish caught. For this contingency, FFI requires an alternative strategy to supply the market. Farmed fish could provide such an alternative.

Implemented Measures

- → **Analysis of a climate-adapted and stock-maintaining farming of fish species**
- → **Development of climate-change-adapted production and marketing processes**

Method and State of Implementation

At the outset of the project, those species were identified which would permit a climate-appropriate and stock-maintaining farming procedure, and which were also

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suitable for deep-freeze production. During the course of the project, it turned out that in the context of climate adaptation, particularly farmed shark catfish provide an alternative to the catching of wild fish. The shark catfish is a robust species which can also be farmed in aquacultures at high water temperatures with low oxygen contents.

In a second phase the farming of shark catfish was undertaken together with partners in Vietnam, and the introduction of standards such as the global GAP, were promoted. In the context of the project, FFI participated in the development of the ACS standards for shark catfish farms, and of a standard for sustainable fish meal. The foundations of a delivery chain were established.

In the context of the third phase, FFI's processing system was restructured technologically and organizationally to handle the new basic raw goods. In addition to block-based products (e.g. Schlemmer-filet and Goldknusperfilet/ »gourmet«, »golden crust«), natural filets were provided both for sale and as a raw material for new types of recipe products, such as the convenience product »Bake to Perfection.«

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In 2010, 140 t of shark catfish »Bake to Perfection« were brought onto the market. Differences in taste in this »new product« were compensated for by appropriate selection of flour and by sensor tests.

Results and Transferability

Market Implementation Challenges: The packaging design had to be revised, sensor tests carried out, and a more individual marketing process developed. In terms of price, too, the product is a challenge for the mass market.

Potential for Innovation: Market potentials and networks were secured at an early date. The result of the project shows that a technological and organizational implementation of the new, robust species is possible in fish processing, even in a brief period.

Obstacles/Challenges: The solid establishment of climate-change adaptation consciousness in the industry is currently difficult, due to other important issues. Moreover, the replacement of ocean fish with shark catfish leads to taste differences which do not always fulfill the taste requirements of consumers. The increased complaint rate and the relatively high price have also proven to be a barrier to the short-term introduction of the product on the mass market.

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