

Use of by-products as system innovation: GeNeSYS

All aboard: a valuable use for discards

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Valorisation is a hot item in all research branches. There is a global interest in more efficient production processes with minimization of waste and maximisation of profit. The project 'Use of By-products as System Innovation' (GeNeSys) aspires to close loops by valorising by-products from agriculture, horticulture and fisheries. Participatory processes will be included in order to develop instruments for successful system innovations. One of the case studies focuses on finding useful applications for discarded fish. The reform of the European Common Fisheries Policy (CFP) planned for 2013 wants to transition fisheries into a sustainable industry that only fishes up to the level of maximum sustainable yield. A discard ban is one of the controversial measures. The industry fears having to land a large amount of inferior products. In order to run a profitable business fishermen need the hold to be filled with valuable marine products. The reasons for discarding are various: fish may be damaged, undersized, quota restricted or low of value. Discarding fish can be seen as an enormous waste of resources, especially taken into account that most fish stocks are being overfished. Making use of discards instead of throwing them back could be a big step towards a sustainable fishery. Not only would landing them give scientists more accurate catch data but it would also stimulate fishermen into using more selective catching methods. Recognizing the fact that discards can't be completely avoided it's important to find a valuable use for them. The diversity of discards awakens the thought that there could be equally diverse applications. The first step is to analyze the composition of discards. Once there is a clear view on the species composition, quantity and quality, the study will focus on finding valorisation pathways such as Highly Added Valuable Compounds (HAVC) and innovative applications. Previous research has listed numerous nutritional and non nutritional uses for marine products and derivatives. Based on literature possible valorisation products are unsaturated fatty acids, chitin, hydroxyapatite, astaxanthin, enzymes, hydrolysed proteins, fish and liver oil, fertilizer, gelatines, vitamins, carotenoids and many more. The great challenge with the extraction of components is keeping the fish as fresh as possible. The key to success is to determine those products that are marketable. The most promising options will be studied in detail and possible stumbling blocks will be determined. To ensure successful commercial integration of the generated innovations, this project relies heavily on participatory processes with all the stakeholders. The project has a double-loop process. Adjustments and improvements are made after the first loop. The system is upscaled during the second loop. The goal of this 4-year study is to create one or more innovations that will help the fisheries industry cope with the discard ban. The results this project aims to get are minimal food losses, maximal value of the landings, and a contribution to the CFP's vision of sustainable management of the fisheries industry.

References

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