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Optimizing the exploitation of wild and reared bluefin tunas under the constraint of sustainability: The IFREMER R&D project

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SUMMARY – A brief account is given of a research project commenced in 2000 by IFREMER concerning aspects of wild bluefin farming in offshore cages and reproduction control in land-based facilities. Three inter-related sub-projects have been suggested: (i) wild fish on-growing and/or fattening; (ii) reproduction; and (iii) fingerling production and improvement of the understanding of early stage recruitment limitations. The integration of this project in other EU community activities is discussed.

Key words: Wild bluefin tuna farming, offshore cages, land based facilities, fattening, fingerling production, reproduction.

RESUME – *"Optimisation de l'exploitation de thons rouges sauvages et élevés, en tenant compte de la contrainte de durabilité : Le projet de R&D d'IFREMER". Un bref rapport est présenté sur un projet de recherche entamé en l'an 2000 par IFREMER concernant des aspects d'élevage du thon rouge sauvage dans des cages offshore et sous reproduction contrôlée dans des installations à terre. Trois sous-projets étroitement liés ont été suggérés : (i) élevage de poissons sauvages et/ou engraissement ; (ii) reproduction ; et (iii) production d'alevins et meilleure compréhension des limitations du recrutement des stades précoces. L'intégration de ce projet dans d'autres activités de la communauté de l'UE est discutée.*

Mots-clés : *Elevage du thon rouge sauvage, cages offshore, installations à terre, engraissement, production d'alevins, reproduction.*

During the past decade, the diversification of the Bluefin Tuna (BFT) fishing industry with an emerging farming activity has been rapidly and deeply modifying the economic basis of this sector in Australia and, more recently, in Europe. Within a few years, these "catching and farming" operations dedicated to the Japanese market of sashimi became one of the key issues of the BFT resource sustainability.

France is involved in Atlantic BFT catching through its purse seiners in the Mediterranean Sea, French fleet providing around 70% of farmed BFT in Spain. Furthermore, following the Spanish example, several farming projects may be launched in the near future in our country.

Analysing this trend, IFREMER promoted, early in 2000, a research project giving the priority to wild BFT farming aspects in offshore cages and to reproduction control in land based structures. After one year of preparation, our Institute has planned a multidisciplinary research project and officially announced it to the ministry representatives.

The research project aims at improving knowledge in physiological processes governing the reproduction cycle and larval and fingerling biology. The two main targets are improving fingerling production for farming operations as well as understanding the natural recruitment limitations of early stages.

Furthermore, we consider that this research project in BFT aquaculture (fattening, on-growing of wild fish and juvenile rearing) has to be governed and enriched by the concern of the sustainability of this emerging activity within its socio-economic and ecological environment.

We have also taken into account the markets new demands in terms of flesh quality, food safety and animal welfare.

In its present proposition, our research project is organised in 3 inter-related sub-projects: (i) wild fish on-growing and/or fattening; (ii) reproduction; and (iii) fingerling production and improvement of the understanding of early stage recruitment limitations.

IFREMER and its French partnership could play a major role in 8 research topics: (i) reproduction; (ii) genetics; (iii) nutrition; (iv) adaptive ability; (v) fish quality; (vi) environmental impact; (vii) socio-economics; and (viii) engineering.

This challenge in terms of scientific investigations, research infrastructures, and fields of application leads this research project to a multidisciplinary level between several research institutes from different European countries. Therefore we are strongly convinced that the Ifremer BFT R&D project has to be integrated as much as possible in this DOTT action. Although significant scientific results can be obtained within the next 5 years, we assume this action has to be politically and economically supported during the next 15 years at a regional, national and international level.