Dr. Nathalie Steins
Chairman Flatfish Working Group, North Sea RAC
Postbus 72,
2280 AB Rijswijk

Dear Nathalie,

The European Union has issued a call for specific targeted research projects on the problem of the effect of climate change on the distribution and production of fish and shellfish populations (FP6-2005-SSP-5-A). The Netherlands Institute for Fisheries Research (RIVO) is coordinating a proposal of a consortium comprising 8 research institutes (IFREMER France, CEFAS England, FRS Scotland, University of Hamburg, DIFRES Denmark, IMR Norway, RIVO, NIOZ Netherlands). The project, if funded, will address a.o. the question how to disentangle the impact of climate from that of fisheries on the changes in production and distribution. Insight in this question is certainly of interest to the fishing industry. On behalf of my colleagues in the consortium, I would like to ask if the Flatfish Working Group of the North Sea RAC will support our proposal and participate in a workshop to discuss the results of our study with various stakeholders. Given the deadline of submission of the proposal, I would be grateful if you could send me a letter of support as soon as possible but no later than March 15.

Yours sincerely,

Prof. dr. Adriaan Rijnsdorp
Coordinator CLIMFISH

Effect of climatic changes upon production and distribution of fish and shellfish populations (CLIMFISH)

The project addresses a specific targeted research project under FP6-2005-SSP-5-A

Specific programme:	Integrating and Strengthening the European Research Area
Activity area(s):	Policy-orientated research
Area:	Modernisation and sustainability of fisheries, including aquaculture-based production systems; Integration of environmental requirements into the CFP
Task 11.	Effect of climatic changes upon production and distribution of fish and shellfish populations

Abstract
There is no doubt that climate change will impact fisheries resources and pose a challenge for fisheries management to develop management strategies for sustainable exploitation. Knowledge on processes how climate change may impact fisheries resources is still fragmentary. This project will review the current knowledge and formulate hypotheses to be tested in future research. The focus will be on climate effects on food chain processes and geographical distribution of marine fish and shellfish populations in the north Atlantic. As a first step, a conceptual framework will be developed that distinguish between the processes on the level of the individual fish (physiology, behaviour), the population (population regulation, biological interactions among organisms: predation and competition) and the ecosystem (habitats, physical oceanography, primary production and food chain processes, benthic pelagic coupling). This framework will structure the literature review and help to detect gaps in our knowledge. Special attention will be given to the question how to separate effects of climate from those of fisheries or other anthropogenic influences.
A comparative analysis will be conducted of the relation between climate variability as observed in the past decades and 1) variations in distribution and productivity and distribution of selected species; 2) variations in ecosystem structure and functioning. The selected species represent commercially important resources, representing different components of the ecosystem (pelagics, demersals), different trophic roles (planktivores, benthivores, piscivores) and cover a wide geographical range from the Bay of Biskay to the Barents Sea. Changes in ecosystem structure and functioning will be analysed from time series data on fisheries landings and survey data focusing on the food web components: phytoplankton, zooplankton, planktivorous predators, benthivorous predators. The relevant spatial and temporal scales to forecast effects of climate change and climate variability will be explored using available fisheries oceanographic models that couple ocean circulation models to trophic ecosystem models. Integrating the results of the literature review with the results of the hindcasting and forecasting studies, will allow us to explore the relationships between productivity, distribution and climate, and formulate hypothesis and research needs in future research about the long-term effects of climatic change on the productivity and distribution of fish and shellfish.