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## **New developments in coastal environment research: results from the national coastal environment program**

The National Coastal Environment Program (PNEC) developed fundamental research on the coastal zones of France, in Europe and overseas. PNEC was funded by a consortium of seven French institutions (IFREMER, CNRS, IRD, Total, CNES, BRGM, CEMAGREF) represented in the inter-institute committee to decide the program orientations and budget breakdown. PNEC activities were coordinated with LITEAU programme supported by the French Ministry of Ecology and Sustainable Development, to make scientific results available to administrators and policy makers as methods and tools for coastal zone management. PNEC has also strong scientific complementarities with the national programme Continental Ecosphere (ECCO) dealing with process, modelling and environmental risk assessment in continental areas. The two programs have been grouped in 2006 into the new National Continental and Coastal Ecosphere Programme (EC2CO).

PNEC was created in 1999 to pool the objectives of four programmes: National Programme of Coastal Oceanography (PNOG), National Programme on the Determinism of the Recruitment (PNDR), National Programme on Coral Reefs (PNRCO), and National Programme on Algal Toxic Blooms (PNEAT). PNEC was developed to promote trans-institutional and transdisciplinary research on the coastal zone. Based on scientific questions, the purpose of PNEC was to produce scientific information at the national and international levels and, in this way contribute to international programmes such as LOICZ, GLOBEC, and GEOHAB. The research priorities were both focused on geographical worksites and theme-based. The worksites corresponded to a multidisciplinary approach for several years in a same geographical zone. The theme-based actions corresponded to transverse and/or innovative actions developed in the short term. They were flexible, open and changeable and were designed such that their results may be applied to the worksites. Eight worksites and seven theme-based actions were supported during the four first years of the PNEC. The results were recently published in an overview of 1999-2002 activities<sup>1</sup>.

The general objectives of the program have been actualized in 2003 to relate to the operating modes of the coastal systems under the oceanic, telluric, climatic and human influences and their consequences for the society (PNEC2). This general purpose was distributed in four closely related topics: climatic and human influences, biodiversity and forcing at the interfaces, exceptional events involving an imbalance of the coastal systems and/or social risks, in particular sanitary ones, and littoral public policies and coastal heritage. The second part of the program involved about 900 participants including 10% of foreigners, mostly from European countries. The projects were funded both as worksites and theme-based actions selected from their transverse and/or innovative characteristics. These transverse actions aimed to federate scientists from various institutions working on different sites, on methodological aspects, modelling and development of common tools to support operational structures. The PNEC also encouraged the emergence of new topics. The transverse and innovative actions projects were supported for two years in 2004 and 2005.

This issue of “*Aquatic Living Resources*” is devoted to the first results of theme-based actions of PNEC2, which were presented during a conference held on June 26-28, 2006, in the campus of the IFREMER Centre in Nantes. The papers in this volume address a part of PNEC activities dealing with both aquaculture activities, and perturbations of coastal resources environment.

<sup>1</sup> Clavier J., M. Joanny, F. Carlotti (eds.), 2006. PNEC. The French coastal environment programme. Overview of 1999-2002 activities. IFREMER editions, 308 p.

New insights are provided on perturbation of bivalve aquaculture by biological and chemical contaminations, and their biological responses. Further information is also given on processes at the water-sediment interface, under both the influence of shellfish farming and the impact of an invasive species, and the response of near shore ecosystem to continental forcing by flash flood. These papers do not exhaust the range of topics covered by PNEC. However, they give a clear demonstration of the kinds of problems that have been addressed in relation to living resources and their environment.

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