

3.3 Marine Functional Foods Research Programme

3.3.1 Introduction

A significant current driver of food choice among consumers is health. Marine products have the advantage of being perceived as natural, and therefore healthy, by many consumers. Because of the high consumer priority on health, functional foods and dietary supplements (physiologically active ingredients, nutraceuticals) are product areas in which marine resources have a high potential. 'Functional Foods' are foods or dietary components that may provide a health benefit beyond basic nutrition.

Several classical functional foods and dietary supplements (e.g. prebiotic and probiotic products based on fish oils, algae or other marine sources) are derived from marine sources and there is potential for more. Among the potentially important areas for research are:

- > Chitin and related compounds from shellfish waste;
- > Omega 3 and other fatty acids from fish oils; and
- > Alginates, carrageenans, etc. from marine algae.

Some of the opportunities in the area of functional foods are dependent on economic factors, e.g. the quantities and value of the source materials available for extraction of potential products and the logistics associated with their coastal or offshore locations.

The Marine Institute, working in association with other stakeholders, is defining a marine functional foods research programme. The 2020 Scenario and 2013 Objectives that will guide this programme are laid out as follows.

3.3.2 2020 Scenario

2020 SCENARIO

By 2020, the Irish marine sector will be a major supplier of raw materials to the international food sector. There will be a wide awareness of the beneficial effect of marine origin materials and extracted compounds on human health. An aging population and high disposable incomes will drive the demand to address disease prevention through food. A range of ailments and diseases including cancers, obesity, diabetes, and immunity development will be targeted using marine functional foods. Research in these areas will have created strong linkages between the marine sector and the pharma-chem, food and health sectors.

Ireland will possess a science-based capability and the capacity to develop new functional food opportunities, adding value to available marine materials, organisms and extracted compounds. Traditional marine food processing firms will become proficient in new processes designed to extract, separate, purify and package marine origin compounds. Marine products will make an important contribution to the development of a high added-value functional foods industry and there will be a strong inter-agency partnership and synergy with other RTDI performers in the food sector.

3.3.3 2013 Objectives

2013 OBJECTIVES

- 1 Create a strong, interdisciplinary research capability in the identification and utilisation of marine biodiversity as a source of materials for use in functional foods.
- 2 Develop capabilities to process marine based materials for use by the functional food sector.
- 3 Create a new research capability in marine functional foods linking indigenous and multi-national food and pharmaceutical industries with researchers at state and third level research institutions.

3.3.4 RTDI Requirements/Outputs

The detailed research requirements and outputs for the marine functional foods research programme are being defined by the Marine Institute, working in association with other stakeholders. The key programme outputs are:

- > Active participation by state and third-level research institutions and industry in nationally and internationally funded programmes and international collaboration;
- > The discovery of marine-based functional food materials;
- > New processing methods to extract functional materials from marine materials; and
- > A knowledge base that will support food companies to produce novel and innovative marine-based functional food products.

Expertise in the area of marine functional foods research is outlined under the Seafood Processing Research Programme (Section 2.2).