



Hakodate Area

Formation of the sustainable marine industrial cluster, utilizing the ocean as a huge production system of valuable resources

Cluster Vision

Natural, geographical, and historical advantages for fisheries and marine industries have collected various industries and prominent scientific institutions in the Hakodate area. Based on this character, the 'Hakodate International Fisheries and Ocean City Concept' commenced in 2003, in which the formation of an international scientific research city of fisheries and marine science was targeted. A number of projects developing scientific technologies into industrial advancement have since been implemented. Currently, we have a platform of industry-academia-government collaboration. To optimally exploit this foundation, we aim to form a sustainable marine bio industrial cluster through the global innovation of fisheries and marine science. In this innovation, we recognize the ocean as a huge and measurable production system, and develop total technologies in order to utilize valuable substances from marine bio-resources.

Project Overview

We have succeeded in forming the local industrial network thanks to the City Area Program ("basic" and "development" stage projects). By further developing this network, we establish a green innovation model of UMI (Universal Marine Industry) in the Hakodate area, and promote new business development worldwide.

This project is promoted by collaboration with academia, industries, and local government in this area, under the basic concept of 'Hakodate International Fisheries and Ocean City.' The Knowledge Cluster Headquarters of the project are installed in the Hakodate Regional Industry Promotion Organization, which serves as both the core organization and core research institution. We establish a successive promotion system, which supports industrialization from research and development to final enterprise development, utilizing the know-how and network obtained in the City Area Program.

We target the formation of a sustainable marine bio industrial cluster through global innovation in fisheries and marine science, which activates various industries in the Hakodate area, and brings international competitiveness to the same. In this project, we have the following four research-and-development themes:

1. Improvement of the balance between an advanced use and sustainable use of biota and aquatic environment in the coastal region using marine spatial information
Sei-ichi Saitoh, Professor, Graduate School of Fisheries Sciences, Hokkaido University
2. Autonomous 'green bio-farming' of the northern mega-benthos containing high value added products
Hajime Yasui, Associate Professor, Graduate School of Fisheries Sciences, Hokkaido University
3. Research and development for creation of highly functional resources harnessing biological characteristics of mega-benthos
Kazuo Miyashita, Professor, Graduate School of Fisheries Sciences, Hokkaido University
4. Research and development for establishment of global standards for food quality and health effects
Takeya Yoshioka, Chief Researcher, Hokkaido Industrial Technology Center

We develop research results with the know-how accumulated to date. To develop them widely, we tackle efforts to improve their competitiveness in the international market and collaborate with domestic and/or international partners aggressively. Technology transfer is realized by cooperative researchers, in which members from industry, academia, or government unite to develop technologies concerning common issues. This process proved to be very useful in the City Area Program in Hakodate. In addition, the expansion use of our technology is prompted by science and technology coordinators in a variety of efforts. To foster human resources, we have basic strategies of (1) training researchers and engineers, (2) training industrial support talents, and (3) training technology talented individuals of the next generation. Therefore, we will willingly provide young researchers with chances to participate in research projects.

Project Director
Teisuke Miura



Vice-chairman of the board of directors, Hakodate Regional Industry Promotion Organization; Director, Hokkaido Industrial Technology Center

Promote the formation of a sustainable Hakodate Marine Bio Industrial Cluster

Our goal in this project is that Hakodate area is recognized as an international leader of fisheries and ocean city by innovation of universal marine industry. And then, that the citizen feel happy in their daily life through their business life and social activity in this area. To realize this, our technology 'seeds' should be superior internationally, considered as sustainable, and make their lifestyle rich. Based on such a concept, we have four research and development themes in parallel. These themes are intended to generate a new industrial model, utilizing the ocean as a resource production system. This concept is named the green innovation of UMI (Universal Marine Industry). This is intended to create new industrial model, in which researches and industrializations are promoted in an integrated manner. To realize the formation of a sustainable Hakodate Marine Bio Industrial Cluster with international competitiveness, we cultivate industry-academia-government collaboration further with new power.

Cluster Headquarters

- President.....Harumi Takahashi (Governor of Hokkaido)
- Vice President.....Masanori Nishio (Mayor of Hakodate)
- Project Director.....Teisuke Miura (Vice-Director, Hakodate Regional Industry Promotion Organization; Director, Hokkaido Industrial Technology Center)
- Vice-Project Director.....Yoshiaki Maita (Former Vice-director, Hakodate Regional Industry Promotion Organization)
- Chief Scientist.....Akihiko Hara (Dean, Graduate School of Fisheries Sciences, Hokkaido University)
- Vice Chief Scientist.....Kazuo Miyashita (Professor, Graduate School of Fisheries Sciences, Hokkaido University)
- Vice Chief Scientist.....Sadayoshi Mikami (Director and professor, Collaborative Research Center, FUTURE UNIVERSITY-HAKODATE)
- Vice Chief Scientist.....Noriyuki Miyahara (Director, Research and Development Dep., Hokkaido Industrial Technology Center)
- Adviser of Chief Scientist.....Katsumi Miyajima (Collaboration Coordinator, Collaborative Research Center, FUTURE UNIVERSITY-HAKODATE)
- Science and Technology Coordinator.....(Research section)(open recruitment for experienced)
- Science and Technology Coordinator.....(Industrialization and marketing section) (open recruitment for experienced)

Core Organization

Hakodate Regional Industry Promotion Organization

Participating Research Organizations (Bold: Core Research Organization)

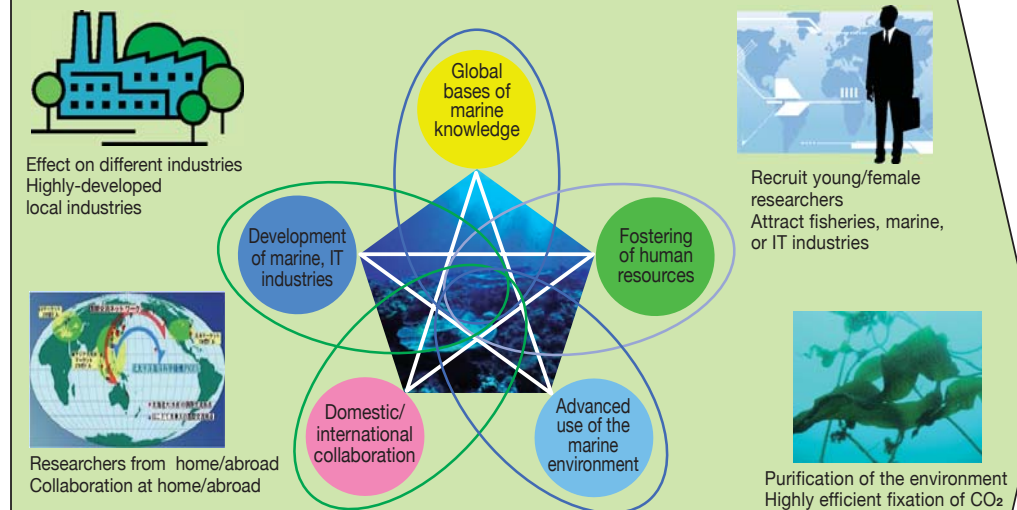
Industry...JSAT MOBILE Communications Inc., SEC CORPORATION LTD., Kumashiro System Frontier Co. Ltd., ZENI LITE BUOY CO., LTD., SpaceFish LLP, Hamamatsu Photonics K. K., TAKARA HEALTHCARE INC., TAKEBUCHI YORIITO.CO.LTD, Handa Co., Ltd., FUJI OCEAN WORKS CO., LTD., i JARD, Konbu Rohdo Kenkyusho Co., Ltd., KANEKA CORPORATION, TEIJIN LIMITED, AIR WATER SPECIALIZED TRANSPORTATION INC., Kyowa Concrete Industry Co., Ltd., BIO CREATE CO.,LTD. MIZOGUCHI KK., North Civil Engineering Consultant Co., Asai Germanium Research Institute Co., Ltd., ELFIN CORPORATION., MARUNAMA KOSEI CORPORATION Co., Inc., Nikko Ltd., Oshimareizou Co., Ltd., KANESEN CHIBASUISAN CO., LTD., Kamiiso-gun Fisherman's Cooperative Association, SHIKOKUKAKOU Co., Ltd., SHOWA FREEZING PLANT CO., LTD., Tanaka REIKI Industry Ltd., NPO Hokkaido Konbu Research Circle, TOPPAN PRINTING CO., LTD. HAKODATE SANSO CO., LTD., Fujicco Co., Ltd. Fuyo Ocean Development & Engineering Co., Ltd., TAIYO SEISAKUSHO CO., LTD., TERASHIMA SHOUKAI CO., LTD., ISHIO SHOKUJIN CO., LTD., YAMAICHI SHOKUJIN CO., LTD., DEGUCHI SEIMEN CO., LTD., JOKKI CO., LTD., Maruhachi Muramatsu, Inc., TENGUDOU TAKARABUNE CO., LTD., MIURA SUISAN CO., LTD., Marine Products Higuchi, YAMAKYU ASAZUMA Inc., Hokuyo Co., Ltd., Japan Certification Services, Inc., Towa Denki Seisakusho Co., Ltd., Densai, Inc., Nissui Pharmaceutical Co., Ltd.

Academia...**Hokkaido University, FUTURE UNIVERSITY-HAKODATE, Hakodate National College of Technology**, Asahikawa Medical College, Kitami Institute of Technology, Maebashi Institute of Technology, Tokyo Institute of Technology, Kisarazu National College of Technology, Kyoto University

Government...**Hokkaido Industrial Technology Center**, Hokkaido Food Processing Research Center

Hakodate Marine Bio Industrial Cluster

Green Innovation of UMI (Universal Marine Industry)



- 【Project 1】 Marine spatial information for the advanced and sustainable use of marine ecology
- 【Project 2】 'Green bio-farming' of northern mega-benthos with high-value substances
- 【Project 3】 New creation of functional resources, using the characteristics of mega-benthos
- 【Project 4】 Establishment of global standards for food quality and health effects

Hakodate International Fisheries and Ocean City Concept

Ordinance / Strategy of Hokkaido Science and Technology Promotion

Formation of Sustainable Marine Industrial Cluster, by technology 'seeds' with impact and international competitiveness