Fisheries for Global Welfare and Environment

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Memorial book of the 5th World Fisheries Congress 2008

Edited by

Katsumi Tsukamoto
Tomohiko Kawamura
Toshio Takeuchi
T. Douglas Beard, Jr.
and
Michel J. Kaiser

TERRAPUB, Tokyo

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Preface

In the last 100 years, humans have confronted a crisis larger than any faced since we first walked the Earth. The ever-expanding human population and increasing demands for natural resources have caused turbulence in the global economy and disruptions in the food supply. As our population continues to grow in the coming years, food shortages together with environmental pollution and habitat destruction will continue to confront us. Human activity appears to be causing changes in climate that affect both the atmosphere and the oceans. Because of increased pressures on terrestrial food production in an uncertain climate with fluctuating rainfall, continued reliance on marine and freshwater food resources will be necessary.

Wise utilization of food resources in the sea could help alleviate the crisis currently facing humanity by providing sustainable fisheries resources. However, over-exploitation and destruction of marine environments are reducing the potential of the ocean to provide food resources and are impacting the overall resilience of marine systems. Scientific knowledge can help mitigate the negative effects of humans on the global ocean, so fisheries scientists need to provide the leadership necessary to provide the natural resources for future human welfare.

The old proverb in Japan "*sui gyo no majiwari*" speaks of "the friendship of water and fish" as being a very close and inseparable relationship. However, now we must consider ourselves as one more member of this ancient relationship between fish and their environment who has a great responsibility to look after both the fish and the water they live in. As fisheries scientists, we must lead the way to make this "majiwari" continue long into the future.

Fisheries science began as an applied science that studied fisheries and fisheries-related industries. From its beginning, fisheries science has greatly expanded into a wide range of aquatic sciences including disciplines such as fish biology, aquaculture, biotechnology, biodiversity, ecosystems, and environmental research, as well as socio-economics and post-harvest technology. Thus, we can define fisheries science as an integrated science that studies the entire aquatic environment. Aquatic resources are not merely seafood, but include biotic and abiotic resources such as medicine, genetic resources, water, minerals, and energy, as well as landscapes and tourism that also have aesthetic and cultural value. To sustainably utilize all these resources, we need to integrate all aspects of fisheries science and apply this information to policy-making.

The Japanese Society of Fisheries Science, established in 1932 with a 76 year history, hosted the Fifth World Fisheries Congress in Yokohama in October 2008. This congress was the largest meeting on fisheries science held to date. The Congress had nine sessions and 50 subsessions covering almost every discipline related to fisheries science. The steering committee of the Congress decided to publish a book of papers that represented the full range of subjects covered by the plenary speakers and invited keynote speakers from all regions of the world.

The objective of this book is to commemorate the subjects covered by the Congress and, at the same time, to help provide a guideline for world fisheries and fisheries science in the future, with the hope of helping to improve world human welfare. Therefore, the editors of the book urged the contributors to express their ideas and opinions about the problems and future perspectives in fisheries science together with a scientific review of their own field of research. We hope the book will be useful for policy-makers as well as students and researchers of fisheries science. We express our sincere thanks to all the authors for their precious contributions and to the referees from around the world for their valuable suggestions and constructive comments that helped to make the book a reality.

July 2008

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