

SPECIAL ISSUE ON THE WORKSHOP ON SENSORS AND APPLICATIONS FOR FISHERY AND AGRICULTURAL INDUSTRIES

PREFACE



The world population does not stop growing. It is estimated to reach 7.7 billion in 2019 and approach 10 billion in 2050. With food security becomes a worldwide problem, the fishery and agricultural industries must become more productive. However, these industries are concerned with unstable production due to technical insufficiency in developing countries and labor shortage caused by the lack of successors and the aging of population in developed countries. For these reasons, such countries today need to implement steps to increase their production for secure and safe food supply.



Production by the fishery industry can be classified into capture fishery and aquaculture. Production by crop cultivation in the agricultural industry can be classified into soil culture cultivation and horticulture including hydroponics. Since productions of these areas highly depend on the environment, it is considered that the monitoring of the environment using sensors is important for a sustainable stable production in response to environmental fluctuations caused by global warming. Technologies using sensors that help increase the stability and efficiency of productions in the fishery and agricultural industries are considered to be important and contribute to the elimination of hunger and sustainable use of resources, which are targeted as goals 2 and 14 of SDGs.

Therefore, in this special issue, we selected six papers on sensor applications for readers to grasp the environment in the fishery and agricultural industries. Recently, improvement of sensor technologies including MEMS has promoted the introduction of IoT in the fields of fishery and agricultural industries. Furthermore, GPS has made it possible to grasp the spatial environment. In the near future, big data will be generated by continuous sensing and AI could predict environmental changes and support the optimization of production.

In developing countries, the advancement of fishery and agricultural industries not only improves productivity but also leads to employment creation and rural development. Also, in developed countries, digitalization of experience and intuition by sensors leads to technology inheritance. The development of sensor technologies has a potential of promoting the sophistication of fishery and agricultural industries, which may in turn lead to world food security.

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