

氏名	DOU QUN		
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主査	筑波大学教授	博士 (農学)	張 振亜
副査	筑波大学准教授	工学 博士	雷 中方
副査	筑波大学准教授	博士 (農学)	清水 和哉
副査	筑波大学准教授	博士 (工学)	Helmut Yabar

論 文 の 要 旨

Abstract of thesis

The major objective of this research is to analyze the marine environmental pollution (MEP) in China through qualitative and quantitative methods. In recent years, MEP had attracted global attention. With the rapid development of the economy, Chinas MEP is becoming serious, which however has not got enough scientific analysis and public attention, thus affecting the effective countermeasures. Based on the comparative analysis and case study, the author reviewed the lessons and experiences of Japan's MEP problems, and analyzed the MEP and its main causes in China with Shandong Province as a case study. Results from this research are expected to fully understand the MEP in China and give suggestions to policy makers when coping with the challenges of MEP. The dissertation is divided into 5 chapters.

In chapter 1, the author briefly introduced the general definition of MEP, and conducted a literature review on the research of MEP both in China and Japan. After evaluating the previous studies relating to the MEP in China, the author pointed out the importance of immediate actions to the MEP problems in China, followed by the main objectives of this research.

In chapter 2, the author firstly gave a background analysis on population and economy of the coastal provinces, and introduced two standards for evaluating the quality of surface water and seawater in China. According to these two standards, the author analyzed the latest situation of China's MEP based on the data from relevant departments of Chinese government. The results imply that, although the overall situation of MEP in China is becoming better during these years, i.e. the proportion of the best class quality seawater kept growing and reached 46.1% in 2018, however, the pollution situation is still serious, with the proportion of the worst class quality seawater being 18.7% in 2018. The author further addressed the main pollution indexes of the seawater quality, such as inorganic nitrogen, active phosphate, chemical oxygen demand (COD) and petroleum pollution, etc. The effects of MEP disasters such as red tide and green tide were also discussed. As

the results show, the MEP mainly comes from the flowing rivers and land sewage outlets into the sea without meeting the standards, which is greater than 50% in the respect of rivers, meaning that the land pollution source control is very important to MEP. Results from this study indicate that, the MEP of four main sea areas in China (the Bohai Sea, Yellow Sea, East China Sea and South China Sea) have different characteristics. The author also co-related the situation of economy with the MEP in some typical coastal provinces and cities in China.

In chapter 3, Shandong Province in China is regarded as a typical peninsula coastal area in the case study. The author studied its economic structure, coastal tourism and marine industry. The results indicate that, during 2011-2015, the coal consumption of Shandong Province accounted for 8-11% of the total consumption in China, and the coal-dominated energy structure had brought about much land-based pollution emissions and various challenges to the MEP, such as large areas of green tides and red tides, greatly affecting the swimming beaches during the tourist seasons. The author also adopted some qualitative method like in-depth interview to analyze the complex views within different local stakeholders. This analysis proved that their understanding of MEP was much different. Through this case study, the author provided a further understanding of MEP in China.

In chapter 4, the author gave a comparative study on MEP between China and Japan. He mainly compared and analyzed the governments marine management mechanisms and the implementation of marine environment laws, marine environmental plans, related standards, and public participation with respect to MEP. This comparative study suggests that, as a traditional marine country, Japan has a relatively strong national-level coordination mechanism on MEP, which can promote the policies, regulations and standards to be implemented well. On the other hand, China is lack of integration and coordination when facing the MEP problems, and China can benefit a lot from Japan's lessons and experiences in MEP.

In chapter 5, the author concluded this research and pointed out the future research directions. These conclusions are helpful in the aspect of policy making on MEP in China. And the author also summarized some useful recommendations on relevant regulations and standards.

Results from this work imply that, with the economy development in the coastal areas of China, the MEP problem is facing serious challenges, which has not been paid enough attention by Chinese government and the public. In this study the author analyzed the latest situation of MEP in China, and claimed that the land-based pollutants are the main sources of MEP in China. Thus the environmental pollution problems for sea and land need to be considered as a whole system to deal with. Taking Japan as a reference, the author further put forward policy recommendations for Chinas MEP, which are expected to have potentially practical values for Chinese government to cope with the challenges of MEP problems.

審査の要旨

Abstract of assessment result

This research focused on the latest situation of marine environmental pollution (MEP) in China through qualitative and quantitative methods. The results imply that the overall situation of MEP in China is serious, and its main pollution sources come from the land-based pollutants. According to the standards of surface water and seawater quality in China, the main pollution indexes of the seawater quality, including inorganic nitrogen, active phosphate, chemical oxygen demand (COD) and many relative indexes have been analyzed. A qualitative analysis by in-depth interviews reflects the complex views from different stakeholders when facing the MEP in China. Results from the current research also imply the relationship between rapid economy development and the MEP in China. At last, the author put forward the policy recommendations, which have potentially practical values for promoting the public attentions and actions to solve the problems of MEP in China.

The final examination committee conducted a meeting as a final examination on 18th July, 2019. The applicant provided an overview of dissertation, addressed questions and comments raised during Q&A session. All of the committee members reached a final decision that the applicant has passed the final examination.

Therefore, the final examination committee approved that the applicant is qualified to be awarded the degree of Doctor of Philosophy in Environmental Studies.