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Economic valuation of the biodiversity-related changes in ecosystem services of the arctic caused by climate change

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According to the recent observation by NOAA (US National Oceanic and Atmospheric Administration), 2015 is the warmest year based on global average temperature since 1880. The air temperatures in the Arctic have been rising at almost twice the global average and the extent and thickness of sea ice in the Arctic have declined. And the warming process in the Arctic is accelerating rapidly. These impacts of drastic change in sea ice caused by climate change in the Arctic threaten the eco-system service and biodiversity in the Arctic. This study intends to estimate the economic value on changes in eco-system services and biodiversity of the Arctic caused by climate change. The result of the valuation indicates that the total benefit from improvement of ecosystem in the Arctic ranges from 318.6 billion won to 715.9 billion won per annum. Replication scenarios can be explored into two broad categories in future studies: scenarios in consideration of conflicts of different stakeholders and scenarios based on wider or narrower definition of biodiversity in the Arctic.

Biography

Hyo-Sun Kim is a Senior Economist of the Korea Polar Research Institute (KOPRI) for the Arctic Energy Financing and Climate Change Policy. Her career includes working for Korea Gas Corporation from 1996 to 2015 and serving at the UN Development Program from 1998 to 1999. She is also a Director of the Korea Environmental Economics Association and a Coordinator of Korea-China Green Forum. She has been serving in advisory policy positions, such as a chair for Carbon Trading Committee for Ministry of Industry and a member of Sustainable Development Committee under International Gas Union.

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