

Abstract

Korean research institutes have contributed greatly to national development by adopting advanced technologies from developed countries, fostering technical personnel, and carrying out government projects over the past several decades. In a similar vein, research institutes in Laos, Myanmar, Vietnam, and Indonesia are to play an important role in achieving each country's Sustainable Development Goals. Considering the low human development index (HDI) of the four partner countries and inadequate funding for research and development (R&D) from those governments, however, it is necessary for the Development Assistance Committee (DAC) members, including Korea, to help the countries to strengthen the capabilities of scientific research institutes with the official development assistance (ODA).

The purpose of this study is to investigate the overview of research institutes in four countries and find research fields that need support from the Korea International Cooperation Agency (KOICA). It also aims to examine the cases of aid for R&D institutes from KOICA and other donor agencies in the countries. Lastly, it is to present ODA strategies for KOICA based on the findings.

This study mainly deals with the following: in the Laos section, it investigates two government-funded think tanks and four institutions under the Ministry of Science and Technology (MOST) and analyzes the ODA from Korea, Australia, and Japan for Laos in the field of science and technology. It presents implications for KOICA based on the findings and SWOT analysis in scientific technology. In the Myanmar section, it examines the status of one research institute under the Ministry of Agriculture, Livestock, and Irrigation, and two research centers in universities. It also analyzes aid projects from KOICA and JICA, and evaluates the projects. It is to present ODA strategies for KOICA based on the findings. In the Vietnam section, it examines the overview of a think tank in the field of science and technology and two research

institutes under the Ministry of Science and Technology (MOST). It investigates research institutes in the field of science and technology, which includes a SWOT analysis. In the Indonesia section, it investigates the government-funded research institutes for agriculture, the research institutes under the Ministry of Agriculture, and the agricultural departments and research centers in universities. It examines the agricultural projects conducted by KOICA, the World Bank, and JICA and suggests implications for KOICA based on the findings and the SWOT analysis in the field of agriculture.

Based on the findings of the study, it presents the things that KOICA can refer to in conducting projects in the countries. First, there is a gap between the four recipient countries in terms of human resources and institutional systems in the field of science and technology. In the case of Laos and Myanmar, capacity building in the field of science and technology and strengthening the capabilities of individual researchers should be considered first. In the case of Vietnam and Indonesia, KOICA's ODA can prioritize strengthening the existing research institutes' capabilities and doing joint research with since research institutes in Vietnam and Indonesia have established basic infrastructure. Second, it is necessary for KOICA to select ODA types suitable for each country and specifically to establish scientific research policies, develop individual (or institution-level) research personnel, provide research equipment, and establish cooperative networks with other countries and international organizations. Third, it is necessary for KOICA to promote the science sector ODA as one of the independent priority cooperation areas rather than a subcategory under the current priority cooperation area.

As each country's support measure, for Laos, it proposes KOICA's carrying out joint research projects in the field of science and technology, dispatching scientific experts to government-funded research institutes, providing training course or degree courses for research personnel, and consulting on science and technology research-to-policy advice to set policies and directions in the field of science and technology. For Myanmar, KOICA can carry out a cooperative project with the

Department of Agricultural Research (DAR) and the Department of Agriculture (DOA), seeking cooperation with universities that are located in areas rather than Naypyitaw, and focus on the improvement of yield and development of new crop varieties, following the previous projects such as MDI and Post-harvest Technology Training Center. As for KOICA's support to Vietnam, it proposes supporting research institutes that meet industrial demands such as technology-based growth and core technologies of the Fourth Industrial Revolution, and cooperation with VKIST through technology transfer, research on applied technologies, joint research including interdisciplinary integration research. With regard to KOICA's support for Indonesia, the study suggests the following: developing human resource, support or construction of research institutes suitable for balanced national development, support for research institutes in universities free from the management supervision of higher institutions in consideration of the Indonesian research institute system, smart agricultural technology transferring project based on ICT, where Korea has a technological comparative advantage.