

Abstract

Many donors and aid organizations have been working for poverty reduction and socio-economic development in developing countries. However, we have witnessed that the gap between developed and developing nations has grown worse, and the expected results could not be achieved. Based on this background, appropriate technology has appeared to respond to the development challenges, and it has several features such as technology tailored to communities and local areas, usage of local technologies and labor, and the possibility of maintenance at a small scale and low investment costs. This study is to suggest implementation strategies to activate appropriate technology in development cooperation programs in terms of achieving socio-economic development and promoting development effectiveness by implementing programs using appropriate technology tailored to contexts and supporting capacity development and ownership in developing countries.

The study aims to: firstly, identify the concept of appropriate technology and analyze the developmental stages and major application fields (sectors), especially the meaning and applicability of appropriate technology in development cooperation programs; secondly, draw suggestions from the implementation strategies, policies, case studies, and challenges of aid agencies/NGOs of advanced countries; thirdly, identify the lessons learned from case studies on Korean development cooperation programs that utilized an appropriate technology as a major component and cooperation efforts among domestic stakeholders (governmental agencies, NGOs, etc); and fourthly, draw strategies from previous case studies on advanced countries as

well as Korea, including the benefits of activating appropriate technologies in development cooperation and challenges, and suggest strategies that KOICA can contribute to the efforts.

In the study, appropriate technology is defined as, “technology that is fit to the local environmental, cultural, and economic contexts in a specific region and period.” It is an approach that emphasizes the appropriate use of existing technology and resources and enhances the productive capacity of a local community. Major features of appropriate technology are as follows: technology more advanced than existing technology in terms of production, labor-intensive preferred, simplified technology, eco-friendly technology, applicability to local area, social and cultural adoptability, employment generation using local technology and labor, etc. Especially related to development cooperation, appropriate technology is technology for development and recognizes the importance of indigenous knowledge. Through programs that have utilized an appropriate technology, it is recognized that it is possible to enhance capacity development and ownership in developing countries and link these efforts to community empowerment and sustainable development in the end.

In the study, the USAID, Practical Action, Skat, and GrAT have been selected as major organizations/agencies for analyzing project strategies and cases with applied appropriate technologies, and Cambodia has been selected as a recipient country. Based on the analysis, the major fields of application have been identified as water access and sanitation, energy, agriculture, and construction, and the projects emphasized capacity development, link to employment generation and income creation, suitability into national development strategies, and monitoring and evaluation. In addition, the major

challenges have been identified as being the lack of understanding in social and cultural contexts in target areas and absence of operation and maintenance.

In Korea, appropriate technology was introduced at the end of 2000, and the activities have been implemented by technical experts and academic groups. And the major agencies, such as KOICA, KOTRA, KIPO, and Good Neighbors, have supported and implemented programs using appropriate technologies in development cooperation and made efforts by signing memorandums of understanding (MOU) for enhancing bilateral and multilateral cooperation.

Based on the analysis of strategies and cases in development cooperation, it is concluded that appropriate technology needs to be used to fit local areas, enhance the participation of local people, and promote practical strategies helpful for them, replacing the existing donor-driven or recipient government-driven top-down approach. This study suggests implementation strategies according to each stage of utilizing appropriate technology in development cooperation as follows: first, in the stage of needs identification and development projects, it is needed that the dispatched experts and interns identify and find the needs, and the social, economic, institutional, environmental, and cultural aspects should be examined thoroughly from the beginning of the process; second, in the stage of technology dissemination, agencies engaged in the projects should take advantage of appropriate technology centers, and the government-initiated appropriate technology base center is suggested as a major center to support the operation and maintenance, promote the cooperation among the stakeholders, and enhance the dissemination and effectiveness of the projects; third, in the stage of

commercialization, the market-driven approach is suggested in that the poor of developing countries could participate actively as producers as well as end-users in the business value chain; and fourth, in the stage of impact evaluation and expansion of the projects, the checklists and evaluation guidelines should be suggested as a tool to identify whether the projects have the features of an appropriate technology, whether the programs for capacity development and market for the BOP are formed, and whether the projects have contributed to employment and income creation for the local people.

In addition to the main suggestions, this study emphasizes the role of KOICA as a major agency to coordinate the stakeholders to identify the needs of the developing countries, develop the projects, identify the roles of stakeholders, discuss possible ideas for applying and advancing existing projects, etc. Furthermore, KOICA could assist stakeholders to participate in related discussions because it has run Development Alliance Korea (DAK) since 2012. The invitation for bids is also suggested as a way to develop projects based on the experiences and knowledge of individual experts, agencies, etc. In addition, KOICA can provide guidelines for monitoring and impact evaluations of projects and play an important role to support and coordinate partner countries and agencies by providing initial funds and supporting the BOP market formation. Lastly, it is suggested that KOICA could mainstream appropriate technology in development cooperation programs if they have the features and/or components of an appropriate technology.