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Abstract



The purpose of this study is to identify a 'systematic approach' for Korea's Official Development Assistance (ODA) to Algeria, exploring general-level cooperation methods and cooperation for key industry sectors. Though Algeria is not a 'priority partner country' to Korea, the country holds value in terms of international development cooperation since Algeria is viewed by various industries as a market with strong growth potential. In this context, the limited amount of aid allocated for Algeria puts Korea in a situation to make the right choices to maximize outcome. The methodology used in this study includes quantitative analysis, literature reviews, expert consultation and field study.

This study consists of 4 main sections. Chapter 2 presents an overview of Algeria's political and economic state in order to provide basic background information. The overview lays out an in-depth analysis on the direct or indirect links between underdevelopment and difficulties faced by each industry sector. Also, this chapter focuses on Algeria's foundation for international development cooperation regarding political, economic, social and cultural factors. Understanding the overall environment of Algeria is the first step in identifying ways for effective development cooperation. Chapter 3 depicts the international community's efforts to overcome the obstacles in Algeria's development cooperation, and offers an evaluation and analysis on the characteristics of such efforts. The purpose of this chapter is to investigate how international organizations and donors perceive and approach Algeria's development problems. The international trend and the methods employed by donor actors can serve as a reference to Korea's ODA plan for Algeria. Chapter 4, the key point of this study, depicts the goal of Korea's ODA to Algeria along with priority sectors and methods of development cooperation for each sector as well as the overarching framework of cooperation. Prior to discussing sector-specific development cooperation measures, this chapter suggests the general objectives in a broad context and describes major cooperation areas, followed by development cooperation methods which may be considered. All methods of cooperation

presented in this study are based on the assumption that Korea has a comparative advantage over Algeria, particularly with respect to the accumulated experience over the course of its development and industrialization. Furthermore, this chapter identifies ways to approach development cooperation from a broad viewpoint based on previous analyses. Chapter 5 concludes this study putting together the results of previous chapters.

This study intended to identify the priority sectors of cooperation by using the most objective data possible. While Korea's ODA plans for Algeria have been designed from a donor's perspective, over-prioritizing particular areas such as infrastructure, this study focuses on obtaining the greatest possible degree of objectivity by conducting a quantitative analysis based on supply and demand. Furthermore, this study presents a number of relatively detailed cooperation programs tailored to each key sector. Most previous studies focus on development cooperation needs or on the types of cooperation in certain industries at a general level. In this sense, this study is additionally meaningful as it considers the geographical characteristics of Algeria. This study was aimed to understand Algeria's development demands and identify useful cooperation methods by forming local consultant groups, conducting field surveys and expert consultations. Such approaches clearly differentiate this study from previous studies.

This study suggests supporting industrialization as the basic framework for development cooperation between the Korea International Cooperation Agency (KOICA) and Algeria. Algeria is in the path to redirect itself toward industrialization as an emerging economy with tangible assets accumulated to a certain level. This calls for the need to focus on developing capabilities related to industrialization. Despite abundant natural resources, particularly petroleum and natural gas, Algeria has yet to achieve industrial development. The country has put forth natural resources as the driver for its economy, creating various levels

of demand for development cooperation toward diversifying and developing its industries. What Algeria wishes to gain from Korea's ODA is the secret to success in industrializing Korea as well as its industrial technology. Since the advancement of Korean-Algerian economic cooperation in the mid-2000s, major sectors of cooperation involved industrial policy consulting, invitational training, and expert dispatches. Korea should now provide industrial manufacturing technologies since it may serve as an effective way for Algeria to develop into a diversified and higher value-added economy. In this respect, KOICA should focus on sharing the experience and technology of various institutes including Small and Medium Business Corporation, Industrial Management Corporation, Human Resources Development Service, Korea Institute for Advancement of Technology in the form of ODA to Algerian industries by creating effective channels such as the Korean-Algerian Industrial Manufacturing Technology Council. As both Korean and Algerian economies have a structure that may serve as a supplement for each other, the room for industrial cooperation is immense. Algeria is a nation with vast natural resources such as gas and petroleum but it lacks experience in industrial development and technology. Korea, on the other hand, is a country which successfully propelled industrialization, as it transformed to a leading economy from the poorest nation on the planet.

The cooperation for priority sectors suggested in this study can be summarized into 3 parts. The first is the industry and energy sector. In particular, cooperation can be expected in providing comprehensive consultation on the petrochemical industry, support for training the workforce through sharing petrochemistry technology and support for petrochemical industrial complex waste treatment. Algeria has one of the world's largest petroleum and natural gas deposits and a great potential developing its petrochemical industry. As such, the Algerian government has continuously been trying to expand and improve the industry. While the current environment of the petrochemical industry is limited to producing basic petrochemicals, Algeria is putting effort to diversify the

industry by constructing large-scale petrochemical industrial complexes in the future. Korea managed to successfully construct its petrochemical industrial complex faster than any other country in the world. Also, the nation developed industry related policies and structures, which makes it a good future partner for Algeria. Korea can share its technology and experience to develop strategies for expanding and specializing Algeria's petrochemical industry by initiating consultative projects with Algeria on development strategies for core technologies that are essential in adding value to its industry. The nature of the petrochemical industry is technology-intensive, making it an industry which requires a high level of maintenance and management. This characteristic training the workforce exceptionally imperative compared with other industries. In this context, Korea's related enterprises, private research institutes, universities and government research institutions can be used to offer capacity building programs for Algerian petrochemical technicians, managers, relevant policy makers and public enterprise executives and staff members. If necessary, it may be considered providing greater support in training engineers in the private sector with a support of the Algerian government. In order to successfully execute a systematic program for nurturing engineers, conducting a periodic survey and analysis on the industry's human resource supply, nurturing professional human resources for technology and management by developing job analysis and competence models, and supporting international certificate programs related to engineering should be put into consideration. Moreover, providing consultation services for the establishment of specialized engineering graduate schools may be considered as a measure to enhance training for globalized professionals in the industry. There is also a demand to mitigate pollution and reduce waste processing costs by developing a recycling system that uses industrial waste as a fuel within the complex. Korea's experience in constructing and managing the Ulsan Eco-Industrial Park (EIP) may be useful in providing comprehensive consulting to establish an environment-friendly industrial complex that is suitable for Algeria's industrial environment.

Agricultural sector is suggested as a second priority sector for bilateral cooperation. Increasing productivity would allow Algeria to take full advantage of its vast landscape. However, 50 percent of Algeria's agricultural products are imports because of poor agricultural development. This study determined that a multifaceted support is required according to value chain analyses on the Algerian agricultural development. This includes the establishment of a basis for agricultural R&D, reorganization of technological extension systems, technological transfers, reorganization of infrastructure, and policy reviews. But considering Korea's capacity to sustainably provide support to the Algerian agricultural sector, the best form is viewed to be offering Korea's agriculture technology. North Africa boasts an abundance of grains, vegetables, and fruits with its Mediterranean climate, and Korea has expertise in the cultivation and production of these crops. Korea has also successfully developed and distributed high-yield seed potatoes in Algeria in the past, which may serve as a starting point of technological cooperation in agriculture and a testament to potential cooperation in other areas. Additionally, the demand for technological cooperation in cultivating and producing greenhouse vegetables has also risen over the recent years. For instance, tomatoes are low in quality and have low productivity per area (less than 1/4 of Korea's yield) and low marketability, despite the fact that it is one of the most cultivated greenhouse vegetables in Algeria. While the KOPIA office in Algeria has been disseminating relevant technology through demonstration projects in order to improve the current condition, taking a phased and systematic approach in implementing a cooperative research on production and management may be positively reviewed considering future increase in greenhouse vegetable demands. Working in close cooperation with the Algerian agriculture experts is the key in successfully delivering agricultural support. One of the ways that this may be achieved is through joint research, which is the most effective way to ensure that the technology is applied to local areas. From the inception stages, such as the development of new cultivars, and throughout the research, local experts must be invited to

participate actively, so that, they may subsequently be act as technological disseminators in the future.

The third area is the infrastructure of Algeria. Particularly, this study suggests the training of infrastructure professionals, creating a master plan and conducting feasibility studies for the bilateral cooperation in this sector. Considering Algeria's development needs and Korea's capacity for ODA, knowledge-sharing projects should be focused on infrastructure development especially in areas such as new construction, management and maintenance. While Korea's construction technology and expertise have never been in the main agenda for sharing development experience, visitors from developing countries including Algerian government officials have expressed their interests in Korea's highly developed infrastructure. In fact, Korea is a country with world-class expertise in building infrastructure. A good example is the construction of the Gyeongbu Expressway in the early 1970s. Since then, Korea accumulated a high level of experience and technological advancement in developing infrastructure. Training programs for construction professionals were provided by Korea from time to time. These programs must be sustain and enhanced in quality considering the significance and demands for cooperation regarding infrastructure development. For instance, Korea has wide-reaching experience in construction including city and industrial complex development, water and sewage facility development, transportation infrastructure development, construction license policy design, new technology promotion, SOC private investment and construction guarantee systems. This experience can be shared to achieve a meaningful Korea-Algeria cooperation in construction. In addition to construction, Korea's experience in other areas such as management and maintenance of infrastructure is highly recognized, which is also noted by the Algerian government. Since infrastructure projects are carried out as medium or long-term projects in general, new businesses should be actively developed from the early planning stages through the process of providing grant aids. Most infrastructure projects in Algeria, including the Algerian

East-West Highway, have been planned as early as the end of 1990s to early 2000s. Undoubtedly, participating in development studies through public-private partnerships (PPP) would be an even more ideal option. Also, private enterprises can use this opportunity to conduct development studies to realize the projects that they had been unable to carry out on in the past. While the overall demand for untied aid has been on the rise following Korea's admission into OECD-DAC in 2010, KOICA should add new business opportunities through its transportation-related government agencies such as the Korea Transport Institute, Korea Expressway Corporation, and Incheon International Airport Corporation in order to jointly search for new areas for Korea-Algeria cooperation. This may contribute to Korean firms in entering the Algerian market. Considering Korea's comparative advantage and the size of the projects, the major development projects are assumed to be development plants, industrial plants, city and complex development, high-speed railway construction and port development. Development programs made through matching funds between KOICA and African Development Bank (AfDB) may also be considered. AfDB operates a trust fund gathered from its member states with the goal of financially supporting cooperation projects on technology.

This study emphasizes the technological aspects of Korean ODA to Algeria. This emphasis is based not only on the fact that the amount of ODA to Algeria is limited, but also Algeria's viewpoint toward bilateral cooperation. Being a resource-rich middle-income nation, Algeria's expectation for small-scale donors including Korea is bigger in technological cooperation than financial aid. While development cooperation ultimately aims to eradicate poverty, the actual means or efforts for achieving this goal may differ depending on the situation of the recipient. Unlike countries that are suffering from extreme poverty, developing countries that raised their income levels to a certain extent and potential for industrial growth would find support for industrial development helpful and Algeria is a case in point of the latter.

This research emphasizes development cooperation that builds economic partnerships. Korea should set clear goals for its ODA policies by balancing the universal value development cooperation and national interest. In order to realize such objectives, it is important to build trust between the two nations through development cooperation and add economic partnership based on it. This may eventually be a win-win strategy for both participating nations. Further advances in cooperation may lead to market advance in various areas such as energy and infrastructure. Enhancing cooperation using private-public partnership (PPP) can also be a viable option. As grant aids for developing economies alone may fall short in creating a practical foundation for international cooperation, encouraging the private sector to actively cooperate is vital. Many donor countries are already shifting government led development projects to the private sector knowing the positive effect of PPP. From the viewpoint of ODA recipients, PPP can create innovative and efficient development projects since the private sector participate in providing funds, technology and expertise. In turn, private enterprises from donor economies can expect positive outcomes such as raising brand awareness and market entrance in the mid and long term. In this sense, Korea should also integrate private funds, technology, and expertise in its ODA projects in order to increase the size and efficiency of aid. Furthermore, ODA should be viewed as a way to enhance brand awareness and to discover new markets. Above all, research on the form of PPP in Korea's ODA framework should be conducted beforehand.