The Direction of ROK-SP and its Role in the Future: Comparison between ROK-SP and USSP

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1. Introduction

The Member State Support Program (MSSP) began in 1977 with the mission to fund research and development activities on behalf of the International Atomic Energy Agency (IAEA) Department of Safeguards. In addition to the regularly assigned budget, Member States provide extra-budgetary funding to the agency for additional support. The first country to take action was the U.S. in 1977 under the name of, USSP (U.S. Support Program).

Likewise, Republic of Korea also joined MSSP in 1997 and has partly supported the IAEA by participating in the task of "Provision of Open Sources Information". In 2010, it decided to intensify its Support Program, called ROK-SP with a budget of 300 million won and has steadily increased the amount. Since then, the IAEA and Republic of Korea continued to hold periodic review meetings to enhance their cooperation arrangements and have actively discussed ways to develop new projects. As a consequence, ROK-SP has completed 21 tasks and are currently working on 17 projects, with specific focuses on training inspectors and developing safeguards approaches.

In order to suggest future directions of ROK-SP, this paper will begin by explaining the process of MSSP and then compare ROK-SP and USSP at both the quantitative and qualitative levels. It will specifically analyze how the USSP achieves win-win strategies. That is, it will explore how the U.S. supports international organization and contributes to national benefits at the same time. This paper suggests future guidance for ROK-SP in hopes to strengthen their internal resources.

2. The Direction of MSSP and D&IS

Today, 20 Member States and the European Commission provide extra-budgetary contributions to the IAEA to assist the agency in many diversified areas such as developing new techniques and improving safeguards systems. In addition to direct support, Member States support in kind that can contribute to strengthening inspector capabilities, analyzing nuclear materials and much more.

In order to attain constant support from the Member States, the IAEA holds Annual Review Meetings to exchange ideas and it also publishes a biennial planning document, *Development and Implementation Support (D&IS) Programme for Nuclear Verification* to explain the directions of its organization. The document of D&IS program is released so that the Member States understand the details of the IAEA's long-term directions in research, development and implementation activities. It describes strategic focus areas and activities that the agency has set priorities. The information is for the Member States to understand the IAEA's forthcoming needs and to help them decide how to support the agency in the following years. It ensures that the short-term initiatives of the Member States fit into longer-term goals of the IAEA. This has indeed led Member States and the agency to improve efficiency in the process of requesting, selecting tasks and executing new projects. Moreover, it has also facilitated extensive attentions on developing safeguards approaches at both the national and international levels.

3. Task Acceptance Process

'SP-1s' are task proposals that consist of the basic information necessary for MSSPs, such as the project's objectives, background and proposed work outline. It also includes explanations on how the task result will positively influence the agency and the consequences when the task is not performed. In response to a specific task proposal suggested by the IAEA, Member States take into account their individual expertise, resources and national interests before the approval. In other words, although MSSP was initiated with the objective of the Member States to support the IAEA in cash and in ways to enhance the IAEA's verification capabilities and to improve the effectiveness and efficiency of the agency's safeguards implementation, the countries may accept only those tasks that meet their internal interests.

For instance, actions taken by ROK-SP are directed by Nuclear Safety and Security Commission (NSSC), an independent administrative organization that assists safeguards implementation enhancement and assists governmental projects. When NSSC reviews 'Task Proposals', it goes through the process of financial examination and inspects whether a network of national laboratories and organizations can facilitate that particular task. It also ensures that its support meets emerging and existing needs of the IAEA safeguards. After such reviewing processes, it decides to provide funds to the agency.

USSP is one great example that achieves mutual goals of supporting inter-governmental organization and enhancing national profit. During 1977 to the early 1990s, the USSP assisted the IAEA to obtain basic tools for nuclear verification and to strengthen its capabilities. Later in 1993, with the advent of the IAEA's

Programme 93+2, the USSP's support to the agency somewhat changed to assisting specific IAEA programs and initiating new tasks [1]. In the U.S, once new tasks are requested from the IAEA, Subgroup on Safeguards Technical Support (SSTS) ensures and accepts only the tasks that are consistent with the goals of its government. Then, the Program of Technical Assistance to IAEA Safeguards (POTAS) provides funds for the tasks [2]. These groups make sure that the country utilizes all their resources including commodities, products and services, providing to the maximum extent practicable.

4. ROK-SP and USSP

Below is the table that compares ROK-SP and USSP at both the quantitative and qualitative levels. The quantitative analysis describes the supportive attitude of the U.S. towards the IAEA and its power in the nuclear industry until today. It shows how the U.S. contributes to enhancing the effectiveness and efficiency of the IAEA's safeguards regime. Furthermore, the qualitative analysis compares focal areas of ROK-SP and USSP, and it describes how USSP brings national benefits. That is, it shows how the country accepts MSSP tasks as a chance to advance its resources.

Table I: Comparison between ROK-SP and USSP

	Category	ROK-SP	USSP
Quantitative	**MSSP Funding (as of 2017)**	€ 0.56million (2.4%)	€ 15.18million (65.7%)
	Number of New Tasks (over ten years)	14	42
Qualitative	**Top Expenditure**	Training Inspectors	CFEs/JPOs
	Performing Sectors	Mostly Public sectors	Private and Public sectors

4.1 Comparison in Quantitative Level

First of all, the U.S. has a huge influence over the IAEA because it donates an incomparably large amount to the international organization. While Republic of Korea donated € 0.56million in 2017, which constituted 2.4% of the total extra-budgetary funding as MSSP, the U.S. funded in a total of € 15.18million constituting 65.7% of the total amount [3]. Germany(€ 1.50million) followed by Japan(€ 0.87million) and Denmark(€ 0.64million) were the three countries that donated more than Republic of Korea. As it shows, the USSP funding is remarkably high, which explains the necessity of the U.S. support.

Secondly, the U.S. has been supporting a full range of tasks since the establishment of the IAEA and is now suggesting directions in the industry by initiating new tasks. This can be explained by looking at the number of new tasks over ten years. For instance, ROK-SP initiated 14 new tasks since 2009 with specific focuses on Training, System Studies and Information Processing & Management [4]. On the other hand, USSP began 42 tasks during the same period and the range of tasks vary. In addition to the categories mentioned during ROK-SP tasks, the U.S. also initiated tasks related to Measurement Methods & Techniques, Containment, Surveillance & Monitoring Systems, Safeguards Evaluation & Administrative Support as well as several Joint Tasks with other Member States. The continuous acceptance of new tasks and its effort to be involved in many tasks shows the cooperative attitude of the U.S. towards the international organization. Moreover, with the capacity it acquired through many MSSP tasks, the U.S. continually formulates new concepts and executes them in diverse areas.

4.2 Comparison in Qualitative Level

ROK-SP and USSP are different in a qualitative level as well. Firstly, USSP focuses on advancing its human resources with MSSP tasks and this could be explained by looking at the main expenditures of extra-budgetary contributions. For instance, ROK-SP has provided extensive amount of support for several inspector training courses on topics that include CANDU & LWR, Pyro-processing and Bulk Handling Facilities, which contributes to the IAEA inspector capability enhancement. On the contrary, a great portion of USSP is sponsored for Cost-Free Experts (CFEs) and Junior Professional Officers (JPOs) [5]. CFEs and JPOs are in charge of short-term tasks for which the IAEA requires expertise, yet lacks existing human resource in the IAEA. This experience has a positive effect in recruiting IAEA staff members and it also gives the new professionals opportunities to learn more about the various applications of nuclear technology, nuclear power and international safeguards. Thus, USSP utilizes MSSP tasks as a chance to develop its human resources for the future.

Also, USSP follows a "Buy American" policy, which supports an international safeguards community as well as domestic suppliers [2]. While most of the performing sectors of ROK-SP are public sectors, USSP tasks are performed by a great number of U.S. participants including private sector businesses, national laboratories, individual consultants and CFEs/JPOs. For instance, the U.S. government invested in one of the US companies called Canberra to develop a technology that could support the IAEA's verification activities. In the long term, that specific technology became commercialized and resulted in contributing to a raise in national profits.

5. Conclusions

The IAEA Department of Safeguards is likely to continue to rely on MSSPs for the provision of human,

financial and technological resources to meet the development and implementation support needs. Both ROK-SP and USSP are performing a national and an international role to supplement the IAEA's resources for safeguards research and development. Nevertheless, MSSP tasks should also contribute to consolidating the country's position in the nuclear industry just like the USSP. Thus, ROK-SP should initiate tasks that can strengthen internal resources and present solutions where national institutions and private sectors could collaborate and pursue national benefits together.

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