Internal Ex-Post Evaluation for Technical Cooperation Project

conducted by Uganda Office: May, 2022

Country Name	**Secondary Science and Mathematics Teachers' Project Phase III**
Republic of Uganda	

I. Project Outline

Background	In Uganda, since introduction of Universal Primary Education in 1997 and Universal Secondary Education in 2007, the enrollment rate of lower secondary education increased. In association with the quantitative expansion, prevention of qualitative deterioration of the secondary education became an urgent issue in the country. The level of students' performance for science and mathematics had been particularly low. The results of National Assessment of Progress in Education conducted in 2010 revealed that the pass rate for mathematics was 49.7% and for biology was 30.4% while the rate for English was 67.5%. In order to improve the situation, the Ministry of Education and Sports (MoES) implemented technical cooperation projects of the "Secondary Science and Mathematics Teachers' Programme (SESEMAT)" (Phase I) (2005-2008) and the "SESEMAT National Expansion Plan" (Phase II) (2008-2012) with the assistance of the government of Japan. The Phase I project established a model cascade system of in-service training programme (INSET) in the pilot regions[1] for secondary education teachers especially focusing on science and mathematics. The Phase II project has expanded the regular INSET nationwide. However, the extension and improvement of INSET had been insufficient, and there was a considerable number of teachers who felt that understanding of the contents of subjects they taught was still challenging for them. In addition, continuous implementation of INSET was required for new teachers increased along with the increase in school enrollment rate.		
Objectives of the Project	Through the improvement of the quality of regular INSET and nationwide implementation of the SESEMAT Activities Regional-Based (SARB)[2] initiatives, the project aimed at improvement of the quality of lower secondary science and mathematics lessons, thereby contributing to improvement of attitude of lower secondary science and mathematics learners.		
	1. Overall Goal: The attitude of lower secondary science and mathematics learners is improved. 2. Project Purpose: The quality of lower secondary science and mathematics lessons is improved.		
Activities of the Project	1. Project Site: the whole country of Uganda 2. Main Activities: 1) Improvement of the quality of regular INSET, and 2) Nationwide appropriate implementation of SARB initiatives. 3. Inputs (to carry out above activities) Japanese Side 1) Experts: 12 persons 2) Equipment: digital duplicator, printers, projectors, PCs, etc. Ugandan Side 1) Staff Allocated: 12 persons 2) Land and Facilities: project office 3) Local cost: cost for utility of offices (electricity, water and telephone)		
Project Period	(ex-ante) September 2013 – August 2017 (actual) September 2013 – August 2017	Project Cost	(ex-ante) 300 million yen (actual) 357 million yen
Implementing Agency	Ministry of Education and Sports (MoES)		
Cooperation Agency in Japan	Koei Research & Consulting Inc.		

II. Result of the Evaluation

<Constraints on Evaluation>

・ The ex-post evaluation was conducted by the questionnaire to and face-to-face/online interviews with the Secondary Education Department (SED), SESEMAT National Office, and Regional Management Committees (RMCs) or Regional Trainers (RTs) of Kampala, Jinja, Lango, and Mbarara. Field survey for visiting schools was not conducted due to the incidence of COVID 19.

<Special Perspectives Considered in the Ex-Post Evaluation>

・ Indicator 2 and 3 for the Project Purpose and Indicator 2 for the Overall Goal were "referential indicators" which were not finalized as indicators by the project. Because they were not finalized indicators, their achievements were not evaluated in this ex-post evaluation although their achievements were confirmed.

・ As defined in the Mid-term Review (2016) and the Terminal Evaluation (2017) of the project, the activities of the project consisted of three major pillars of 1) implementation of improved National and Regional INSET[3], 2) development of teaching references, and 3) nation-wide implementation of SARB. Although those were not included in the indicators of the project, the status of implementation of the National and Regional INSET and nation-wide implementation of SARB were evaluated as the components of "Continuation Status of Project Effects at the time of Ex-post Evaluation." Development of the teaching references was evaluated in the "Status of Achievement of the Project Purpose at the time of Project Completion."

1 Relevance

<Consistency with the Development Policy of Uganda at the Time of Ex-Ante Evaluation>

The project was consistent with the development policies of Uganda at the time of ex-ante evaluation. The "National Development Plan

[1] SESEMAT activities have been conducted not on district basis but regional basis.

[2] SARB consists of four activities of lesson study, lesson observation, popularization of lesson planning, and implementation of remedial lessons. Each region is supposed to select one of the four activities and implement it in the schools in the region and report about the activities to RMC.

[3] National INSET is a national level INSET to train Regional INSET trainers and Regional INSET is a regional level INSET to train in-service teachers in regions.

2010/11-2014/15" (NDP II) placed the secondary education as one of the social services to be improved. The "Education and Sports Sector Strategic Plan 2007-2015" (ESSP) planned to improve teachers' teaching abilities through INSET in order to make young population who completed primary education be proficient labor force with problem-solving capability. In line with ESSP, the "Secondary Education Strategic Plan 2008-2019" (SESP) prepared a strategy to improve students' ability for mathematics and problem-solving and to strengthen the in-service teachers training system targeting improvement of the quality of education to make young population adaptive to higher education and labor markets. Besides, in the "Uganda Certificate of Education" (UCE), mathematics and three science subjects, i.e., physics, chemistry, and biology, are mandatory subjects. This indicates that the government of Uganda places high priority on science and mathematics education.

<Consistency with the Development Needs of Uganda at the Time of Ex-Ante Evaluation>

The project was consistent with the development needs of Uganda at the time of ex-ante evaluation. The Phase I project established a cascade system of INSET in the pilot regions for secondary education teachers focusing on science and mathematics, and the Phase II project extended the regular INSET nationwide. However, there was a considerable number of teachers who found the contents of subjects they taught was still challenging for them. In addition, continuous implementation of INSET was required for new teachers including temporary employed teachers increased along with the increase of school enrollment rate. Specifically, teachers' insufficient knowledge of the subject contents and inadequate teaching methods excessively emphasizing theory and rote learning was pointed out. To address the situation, it was required to introduce a system to improve the quality of lessons through the improvement of teachers' knowledge of the subject contents and teaching methods.

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the Japan's ODA policy for Uganda at the time of ex-ante evaluation. In the "Country Assistance Policy for the Republic of Uganda" (June 2012), environmental improvement for realizing economic growth was identified as one of the four priority areas. Enhancement of education above the level of primary education was emphasized from the viewpoint of human resource development for economic growth. Enhancement programs for secondary science and mathematics and vocational training were included in the specific strategies for attaining this policy target.

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was partially achieved at the time of project completion. The average of Lesson Observation Index (LOI), rated by the National Trainers (NTs) by observing lessons of lower secondary science and mathematics teachers, was 2.2 which was higher than 80% of the target value of 2.3 (Indicator 1). As for the teaching references, the project planned to develop and distribute four versions for from S1 to S4, and the versions for S1 and S2 were developed during the project period. The versions for S3 and S4, which were not developed due to the delay of project activities, were expected to be developed by MoES after the completion of the project.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been partially continued at the time of ex-post evaluation. The lesson observation, data collection for Learner Participation Index (LPI), and Learner Performance Assessment have not been conducted after the completion of the project. The monitoring and supportive supervision for them ceased to be implemented due to insufficient budget, and this has led to a drop in motivation of teachers for those activities. Therefore, the continuation status of indicators was not verified. However, the National and Regional INSET have been implemented 3 times in a year respectively as planned after the completion of the project up to 2018/19. Only in 2019/20, they were implemented 2 times respectively due to the incidence of COVID 19. RTs trained in the National INSET train teachers in the Regional INSET. Thus, the cascade training system introduced by the project has functioned. The number of schools implementing SARB has been steadily increasing maintaining approximately 40% of the total number of schools in the country (Table 1).

Table 1: the number of schools implemented SARB

	2017/18	2018/19	2019/20
Number of schools implemented SARB	1,139	1,218	1,290
Total number of schools in the country	2,766	2,801	2,981
The rate of schools implementing SARB	41%	43%	43%

Source: 20 RMCs out of 27 in total in the country

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was partially achieved at the time of ex-post evaluation. The achievement of the indicator was not verified because data collection for LPI has not been conducted after the completion of the project. However, according to RMCs and NTs, participation and performance of lower secondary schools' learners have improved. And according to the Commissioner of MoES in charge of the government secondary schools, the SESEMAT National Office, RMCs, and NTs, learners' perception about science and mathematics[4] has improved and it has been indicated by the increase of the number of students who move up to A level[5] and select science and mathematics for their subject combinations.

<Other Impacts at the time of Ex-post Evaluation>

NTs trained by the project have widely contributed in some other governmental agencies including the National Curriculum Development Centre (NCDC) and the Directorate of Education Standards (DES). NCDC invited NTs to develop and disseminate the new curriculum of the lower secondary science and mathematics, and to train teachers on the new curriculum and supervise the training provided by those teachers to other teachers. DES asked for NTs' cooperation to supervise and inspect a number of schools for their adherence to education standards. Besides, the SESEMAT approach of teaching such as the activity-based learning, learner-centered teaching, continuous improvement of teachers and learners, and others have been incorporated in the new lower secondary science and mathematics curriculum. In addition, teachers networking has been developed through the opportunities of sitting with in National and Regional INSETs. Through

[4] Learners' perception about science and mathematics means the students' notion about science and mathematics, for instance, interesting, practical, easy, boring, difficult, and others.

[5] At the end of the lower secondary education (S1 to S4), students sit for the Ordinary Level Exams. The students who pass the exams receive the Ordinary Level Certificates and move up to the advanced level (A level) for S5 and S6. S stands for "senior."

the networking, they share their locally made teaching materials which were encouraged by the project to be used as easy-to-use inexpensive learning tools. No negative impact on natural, social and economic environment has been observed.

<Evaluation Result>

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
Project Purpose: The quality of lower secondary science and mathematics lessons is improved.	Indicator 1: The Lesson Observation Index (LOI) obtain more than 2.3 on the 0-4 scale.	Status of the Achievement (Status of the Continuation): Achieved (not verified) (Project Completion) The average of LOI evaluated by NTs observing lessons by lower secondary mathematics and science teachers was 2.2 which was higher than 80% of the target value of 2.3. (Ex-post Evaluation) The lesson observation has not been conducted after the completion of the project. The monitoring and supportive supervision for the lesson observation ceased to be implemented due to insufficient budget, and this has led to a drop in motivation of teachers for the lesson observation.	Terminal Evaluation Report. Questionnaires to and interviews with SED, SESEMAT National Office, RMCs, and RTs.
	Indicator 2 (referential indicator): The Learner Participation Index (LPI) obtain more than 2.3 on 0-4 scale. (not to be assessed)	Status of the Achievement (Status of the Continuation): Achieved (not verified) (Project Completion) The average of LPI rated by the students attended the lessons by the teachers subjected by LOI evaluation was 2.2 which was higher than 80% of the target value of 2.3. (Ex-post Evaluation) Data collection of LPI has not been conducted after the completion of the project due to the reason stated above in Indicator 1.	Terminal Evaluation Report. Questionnaires to and interviews with SED, SESEMAT National Office, RMCs, and RTs.
	Indicator 3 (referential indicator): Results of Learner Performance Assessment conducted by SESEMAT for learners at sampled schools of S4 obtain more than 45%. (not to be assessed)	Status of the Achievement (Status of the Continuation): Achieved (not verified) (Project Completion) Results of Learner Performance Assessment of the S4 students of 24 sample schools were: biology 46%, chemistry 45%, physics 39%, and mathematics 37%. All of them were higher than 80% of the target value of 45%. (Ex-post Evaluation) Learner Performance Assessment has not been conducted after the completion of the project due to the reason stated above in Indicator 1.	Terminal Evaluation Report. Questionnaires to and interviews with SED, SESEMAT National Office, RMCs, and RTs.
Overall Goal: The attitude of lower secondary science and mathematics learners is improved.	Indicator 1: The Learner Participation Index (LPI) is improved.	(Ex-post Evaluation) Not verified Data collection for LPI has not been conducted after the completion of the project due to the reason stated above in Indicator 1 for the Project Purpose.	Questionnaires to and interviews with SED, SESEMAT National Office, RMCs, and RTs.
	Indicator 2 (referential indicator): Results of Learner Performance Assessment conducted by SESEMAT for learners at sampled schools of S4 are improved. (not to be assessed)	(Ex-post Evaluation) Not verified Learner Performance Assessment has not been conducted after the completion of the project due to the reason stated above in Indicator 1 for the Project Purpose.	Questionnaires to and interviews with SED, SESEMAT National Office, RMCs, and RTs.

3 Efficiency

Although the project period was as planned (the ratio against the plan: 100%), the project cost exceeded the plan (the ratio against the plan: 119%). The excess of the project cost resulted from "due to producing outputs" and "change of the project implementation structure." The outputs were produced as originally planned by the end of the project period. Therefore, efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The "National Development Plan 2020/21-2024/25" (NDP III) places high priority on the eight focal areas to be improved to address the challenges of low labor productivity in the country. One of the areas is the improvement of the quality of education at all levels. The "Education and Sports Sector Strategic Plan 2017/18-2019/20" (ESSP) which is under revision at the time of ex-post evaluation, included SESEMAT approach as one of the measures to improve teachers' in-service training and working environments. It also planned to increase the number of science and mathematics teachers for secondary schools to improve the quality of teaching and learning. According to MoES, the revised new version is supposed to maintain these policies.

<Institutional/Organizational Aspect>

In the restructuring of MoES took effect in 2021, a new position of the Assistant Commissioner was created in the Teacher Instructors Education Training (TIET) Department, and the SESEMAT National Office was transferred to the Assistant Commissioner's responsibility.

Before the restructuring, SESEMAT was under the Commissioner for Government Secondary Schools assisted by the Commissioner for Private Institutions and Schools and the Assistant Commissioner in charge of TIET. After the restructuring, SESEMAT is under the Commissioner for Teacher Education Training Development (TETD) and the Assistant Commissioner for SESEMAT. Thus, SESEMAT is institutionally properly placed in MoES now. The number of staff in the SESEMAT National Office is 19 including 11 NTs. The total number has decreased due to retirement and turn-over, and it's not sufficient for SESEMAT activities including INSET and SARB. As for the regions, the total number of staff is regulated as 16 for each RMC. Workload of RMCs differs from region to region depending on the number of schools in a region. But the number of staff is generally sufficient as far as SESEMAT activities concerned because those activities are not full-time activities for RMCs.

<Technical Aspect>

National and Regional INSET have been continuously implemented, and NTs and RTs keep introducing what they learned in the project including activity-based teaching methods, lesson planning, and others. They also keep using monitoring and evaluation system introduced by the project for monitoring INSET and SARB. The materials prepared by the project including SESEMAT fund operation manual, SARB operation manual, and Lesson Plan Sheet have been utilized by NTs, RTs, RMCs, and SED. The teaching references for S1 and S2 were developed during the project period and approved by MoES and distributed nation-wide after the completion of the project. The versions for S3 and S4 were expected to be developed by MoES after the completion of the project. At the time of ex-post evaluation, the version for S3 was drafted by NTs but not finalized, while the work on the version for S4 has yet started. Besides, those teaching references developed and drafted must be revised along with the revision of the curriculum.

<Financial Aspect>

MoES's budget for INSET has sustained at the level of 60 million Uganda Shilling (UGX) for five years after the completion of the project. According to MoES, although INSET has been implemented as scheduled, the budget has not been sufficient for all INSET related activities. For instance, the monitoring and supervision of lesson observation, data collection for LPI, and Learner Performance Assessment have not been conducted due to budget shortfalls. Budget for the SESEMAT National Office has decreased due to the national budget cut (Table 2). Insufficient budget has affected the school visit for monitoring and supervision of SARB conducted by the regions. RMCs are not allocated with the national budget but operated by the SESEMAT Fund collected from students' families. Each family of a student contributes 3,000 UGX in a year for the Fund. RMCs implement regional SESEMAT activities including Regional INSET, SARB activities, and other activities by the Fund. The balance has been favorable (Table 3).

Table 2: Budget for SESEMAT National Office

Unit: million UGX

Year	2016	2017	2018	2019	2020
Budget	3,795	2,313	624	624	408

Table 3: SESEMAT Fund

Unit: million UGX

Year	2016	2017	2018	2019	2020
Revenue	1,764	1,501	1,288	1,753	911
Expenditure	1,309	1,209	874	1,108	519
Balance	454	292	414	645	392

<Evaluation Result>

In light of the above, problems have been observed in terms of the institutional/organizational, technical and financial aspects of the implementing agencies. Therefore, the sustainability of the effectiveness through the project is fair.

5 Summary of the Evaluation

Project Purpose was partially achieved by the time of project completion by achieving the target of Lesson Observation Index (LOI) but not completing the development of teaching references. After the completion of the project, project effects have been partially continued by conducting INSET regularly and increasing the number of schools implementing SARB. Overall Goal was partially achieved because although the data collection for LPI has not been conducted, according to the observations by RMCs and NTs, participation and performance of lower secondary schools' learners have improved. As for sustainability, problems have been observed in terms of the institutional/organizational, technical and financial aspects. As for efficiency, the project cost exceeded the plan. Considering all of the above points, this project is evaluated to be partially satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- It is recommended that the SESEMAT National Office finalizes the teaching references S3 and S4 and update S1 and S2 to make them comply with the new curriculum, gets approval by MoES, and distributes them to all secondary schools in the country. If any financial constraints are expected for drafting and distributing, it is recommended that the SESEMAT National Office with the backup of MoES tries to find external funding sources including schools', parents', and development partners' contributions. Distribution cost may be cut down by applying inexpensive ways or cost sharing ways, for instance, by sending the electronic data of them to be printed in each school.
- It is recommended that the SESEMAT National Office with RMCs to monitor the SARB activities conducted in schools and collect data to show the effectiveness of SARB to the society. This may lead to the stable budget allocation by the government and contributions by the external funding sources to SARB. Monitoring could be alternated by reporting from schools to minimize the cost for monitoring including school visits.

Lessons Learned for JICA:

- In the Terminal Evaluation conducted in 2017, it was reported that the data collection of LPI and Learner Performance Assessment would be difficult after the completion of the project due to insufficient budget. However, no action has been taken after the evaluation, and the data collection of LPI and Learner Performance Assessment have ceased due to insufficient budget after the completion of the project as anticipated. It is recommended that an evaluation of a project makes a recommendation specifying measures (actions) to be taken by the project or by the implementing agency to prevent negative anticipations made by the evaluation, if any. Further, it is expected that the section in JICA in charge of the project keeps monitoring the implementation of the actions and provides an assistance if necessary.

RMCs meeting at the SESEMAT National Office in 2019

Students in a science experiment lesson in 2019