

Overview of Terminal Evaluation Survey Results

Date: September 20, 2007

Dept. in charge: Basic Education Team 2, Human Development Dept.

1. Outline of the Project		
Country : Republic of Kenya		Project title : Strengthening of Mathematics and Science in Secondary Education (SMASSE) Project (Phase II)
Issue/Sector : Basic Education		Cooperation scheme : Technical cooperation project
Division in charge : Basic Education Team 2, Group 1, Human Development Dept.		Total cost : 1,300 million yen
		Partner Country's Implementing Organization: Ministry of Education, Science and Technology (MoEST)
Period of Cooperation	(R/D) : May 16, 2003	Supporting Organization in Japan :
	5 years from July 1, 2003 to June 30, 2008	Related Cooperation :
<p>1-1 Background of the Project</p> <p>The Republic of Kenya, under its National Development Plan, aims to transform the nation into a newly industrialized country by 2020. However, in order to develop human resources capable of promoting industrialization, Kenya urgently needs to improve its education system, especially in the fields of mathematics and science. In response to the request of the Kenyan Government placed under these circumstances, the Japanese Government implemented the Strengthening of Mathematics and Science in Secondary Education (SMASSE) Project in nine districts with a goal to improve math and science education through in-service training of secondary-level math and science teachers (July 1998 – June 2003).</p> <p>As a result, the in-service education and training (INSET) system was established at national and district levels, and their effectiveness and sustainability were verified at the completion of the project. Its economic sustainability was also deemed high, as the Kenyan side was able to finance a part of the training programs conducted in local districts. Compared to regions that were not covered by this project, there was a recognizable impact on the improvement of classroom education (ASEI/PDSI: Activity, Student-centered, Experiment and Improvisation / Plan, Do, See and Improvement) through teachers training.</p> <p>The fruits of the project spread throughout Kenya to a point where the Kenya Secondary School Heads Association at its annual conference in 2002 made a request to MoEST to give the same training to all math & science teachers. In addition, due to high demand by other African</p>		

nations having similar problems with inadequate math & science education to disseminate the ASEI/PDSI activities implemented by the project, an intraregional network (SMASSE-WECSA*) was formed in 2001 with the SMASSE Project as a secretariat. (*note: since activities at primary education level began within the region, it was renamed SMASE-WECSA after the WECSA Conference in 2006.)

Based on the results of Phase I, the Kenyan Government requested the Japanese Government to extend assistance for SMASSE Phase II with two core objectives to enhance the training programs within Kenya and strengthen the intraregional network. Since extending assistance for basic education and math & science education, as well as for promoting intraregional cooperation in Africa, is in perfect alignment with Japanese Government's cooperation policy, plus the feasibility of the requested project was deemed high, the Japanese Government decided to implement SMASSE Phase II for five years starting in July 2003.

1-2 Contents of Cooperation

(1) Project Purpose

(i) By the end of the project period:

a) Within Kenya

- Quality of math & science education at secondary level is strengthened in Kenya through INSET of teachers.

b) Intraregional cooperation (SMASSE-WECSA)

- ASEI/PDSI lessons are practiced in teacher training institutions and secondary schools in SMASSE-WECSA member countries.

(ii) After the cooperation:

a) Within Kenya

- Capability of young Kenyans in math & science is upgraded.

b) Intraregional cooperation (SMASSE-WECSA)

- Quality of math & science education at secondary level in SMASE-WECSA member countries is strengthened.

(2) Outputs

a) Within Kenya

- A training system for district trainers in math & science will be strengthened at the National INSET Centre.
- A system of INSET in math & science will be established in the districts.
- Role of SMASSE National INSET Centre and District INSET Centers as resource centers will be strengthened.

b) Intraregional cooperation (SMASE-WECSA)

- Trainers for ASEI/PDSI based INSET will be produced in SMASE-WECSA member

<p>countries.</p> <ul style="list-style-type: none"> • SMASSE National INSET Centre will be consolidated as resource center for math and science education in Africa. • SMASSE National INSET centre will function as the secretariat of SMASE-WECSA. 			
<p>1-3 Inputs</p> <p>Japanese side:</p> <ul style="list-style-type: none"> ➤ Dispatch of experts <ul style="list-style-type: none"> Long-term (chief advisor, coordinator, academic advisor, mathematics education, science education, education evaluation) 312.7 MM Short-term (education evaluation, INSET Management, etc.) 2.9MM ➤ Receiving of trainees <ul style="list-style-type: none"> Training in Japan (mathematics/science education: 4 persons/year x 5 years = approx. 20 persons. INSET Management: 12 persons/year x 5 years = approx. 60 persons) Training outside Japan (Math & science education in the Philippines: 20 persons/year x 2 years + 40 persons x 3 years = 160 persons. Group training for SMASE-WECSA member countries: 75 persons (8 groups)/year x 5 years = approx. 600 persons.) ➤ Provision of equipment <ul style="list-style-type: none"> Equipment and supplies for District INSET Centers, books on specialized subjects, equipment and supplies for the National INSET Centre, vehicles ➤ Local expenses (facility renovation) <ul style="list-style-type: none"> Renovation of the new National INSET Center, etc. <p>Total cost: approx. 1.3 billion yen</p> <p>Kenyan side:</p> <ul style="list-style-type: none"> ➤ Assignment of 55 counterpart personnel at SMASSE National INSET Centre and additional personnel at MoEST, District Education Board, etc. ➤ Provision of facilities (training and lodging facilities at National INSET Centre, new National INSET Centre, training and lodging facilities at District INSET Centers) ➤ Tax exemption, provision of transportation/vehicles, maintenance of donated equipment, and other expenses incurred locally 			
<p>2 . Outline of Evaluation Study Team</p>			
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Period of Evaluation	Sep. 1, 2007 to Sept. 16, 2007		Type of evaluation: terminal evaluation

3 . Outline of Evaluation Result

3-1 Verification of Outputs (results, degree of achievement of overall goal and project purpose)

(1) Outputs of the Project

Components within Kenya

1) Output 1: Actual result toward “a training system for the district trainers in math & science will be strengthened at SMASSE National INSET Centre.”

Although verification of the assignment of personnel at CEMASTEIA (Center for Mathematics, Science, and Technology Education in Africa) and the adoption of ASEI/PDSI methods in technical schools is still underway, other targets have been deemed achieved for the most part.

- i) As of September 2007, 55 Kenyan academic staff and 25 non-academic staff (secretary, driver, facility serviceman, etc.) are working for the project, falling short of the targets of 83 academic and 57 non-academic staff.
- ii) 4 cycles of INSET have been carried out as originally planned at the National INSET Centre, training 1,139 district trainers, which exceeds the target of over 900 personnel.
- iii) 218 tutors of primary teacher colleges were trained in 2007 and training was evaluated highly. Training for technical education schools is in the preparation stage as of September 2007.¹
- iv) At the 4th training in 2007, the National INSET Center obtained 3.65 in the “Quality of INSET Assessment Index”, exceeding the target of 3.0.
- v) During the project period, 40 sets of training manuals were developed and distributed (whereas the target was 14 titles).

2) Output 2: Actual result toward “INSET system will be established in the districts.”

Establishment of District INSET implementation mechanism throughout Kenya is leading to the

¹ Although 8 persons were newly employed during TVET training in 2006, they will be transferred in September 2009 because of lack of qualification. The branching out of the Science & Technology Ministry from the Education Ministry after the interim evaluation also seemed to have impeded the progress of activities. Future TVET workshops will be prepared by the remaining 2 personnel (2 of the 55 academic staff) who used to be TVET teachers.

establishment of a nation-wide teachers training system and the accomplishment of some targets. However, the number of trainers and participants of District INSET, as well as the implementation capacity of district trainers, have yet to be improved in the future.

- i) Basically, 4 cycles of District INSET were carried out as scheduled.²
- ii) As of 2007, 1,381 district trainers are working for the district INSET programs (target: 900 trainers).
- iii) 465 administrative staff (of which 99 are from Phase-I districts and 366 from Phase-II districts) are working for District INSET programs. This means that Phase-II districts have achieved the target (365 persons) while the Phase-I districts fell short of the target (115). The total number was also slightly less than the target (480).
- iv) District Planning Committee is functioning as an administrative and decision-making organ for District INSET.
- v) Training for District Education Officers, Quality Assurance and Standards Officers, principals, and other stakeholders have been conducted as scheduled.
- vi) 14,581 teachers (of which 2,350 were from Phase-I districts and 12,231 from Phase-II districts) received training at District INSET Centers. This was slightly short of the target of 15,000 teachers (3,000 from Phase-I and 12,000 from Phase-II) as the number of participants from Phase-I districts fell short of the target.³
- vii) In 2007, district trainers obtained 2.6 and 2.7 respectively on the scale of 0 to 4 in the INSET building capacity and the quality of facilitation, falling short of the target of 3.0
- viii) According to hearing surveys, the collection rates of SMASSE funds varied from district to district, such as 70% in Nyando District and 80% in Kisumu District. However, three of the four districts, where hearing surveys were conducted, answered that they carried out District INSET as originally planned regardless of their funds collection rate.

3) Output 3: Actual result toward “role of SMASSE National and District INSET Centers as resource centers will be strengthened.”

While the National INSET Centre is achieving the above objective, District INSET Centers still seem to have capacity problems.

² The number of District INSET Centers has been increasing almost every year from 88 centers in 2004 to 93 in 2005/2006 and 100 in 2007. This means that not all centers have conducted 4 cycles of training.

³ The number of teachers participated in District INSET was 16,362 in 2004, 16,251 in 2005, 14,690 in 2006, and 14,581 in 2007. The Evaluation Team assumed that the 2007 figure equaled the number of teachers who took 4 cycles of training.

⁴ Including participants in INSET scheduled to be held in October – November 2007.

⁵ Lesson Innovation Index is an indicator that measures how the attitude and perception of teachers have changed by asking the teachers how they perceive the purpose of lessons, qualities of teaching and learning, etc.

- i) National INSET Centre has published and distributed 18 newsletters (exceeding the target of 10 newsletters) to schools nationwide. It is positioned as a resource center at national level by providing and renting equipment to District INSET Centers.
- ii) Each District INSET Center is basically functioning as an INSET implementation base where district trainers get together to prepare for District INSET by writing and printing teaching materials. Staffed by some district trainers who can develop their own training materials, they are functioning as INSET centers on the district level. However, their capacity to develop their own curriculum after the 4th cycle is limited.
- iii) There are some positive aspects to the Districts INSET Centers; they are functioning as local-level resource centers by renting out some lab instruments to other schools and accepting teachers and students of other schools who come to the centers to observe classes.

Components within WECSA region

- 1) Output 1: Actual result toward “trainers for ASEI/PDSI based INSET will be fostered in SMASSE-WECSA member countries.”

The above was achieved through third-country training in Kenya.

- i) Between 2004 and 2007, third-country training was carried out 5 times (and 3 more are scheduled in the future) along with 3 individual training programs, achieving the target of third-country training “five times.”
- ii) 775 persons from the member countries participated in the third-country or individual training⁴, achieving the target of “over 300 persons.”
- iii) 40 sets of training materials have been produced by 2007, achieving the target of “40 sets.”
- iv) Over 35 workshop and training manuals have been developed.
- v) Monitoring and evaluation tools for SMASSE-WECSA applicable to member countries have been developed and practiced.

- 2) Output 2: Actual result toward “National INSET Centre will be consolidated as resource center for math and science in secondary education in Africa”

Although some of the activities related to Output 2 have yet to be completed, the National INSET Center is being established as a resource center, achieving the preset goal for the most part

- i) Participants from member countries created 192 ASEI-PSDI lesson plans during INSET.
- ii) According to the questionnaires from the WECSA-country participants of third-country training, most of them (12 out of 16) responded that they recognized CEMASTE as the

INSET center of the SMASE-WECSA network.

- iii) No SMASSE-WECSA newsletter was published until September 2007, failing to accomplish the target of publishing “at least 10 newsletters.”

3) Output 3: Actual result toward “National INSET Centre will function as a secretariat of SMASE-WECSA.”

Although no fulltime SMASE-WECSA counterpart staff has been assigned, the National INSET Centre is functioning as the secretariat, accomplishing the goal of Output 3 for the most part.

- i) Regional conferences were held five times between 2003 and 2007, surpassing the target of “four times.”
- ii) 34 countries (33 states and 1 region) are participating in SMASE-WECSA activities, achieving the target of “30 countries.”
- iii) Although no fulltime staff dedicated to SMASE-WECSA activities has been assigned, all personnel at the National INSET Centre are carrying out SMASE-WECSA activities without major problems.
- iv) During the project period, six basic education projects aiming to enhance math and science education within the African region have been implemented, and three more are presently being formulated. CEMASTEAs-related personnel participated in the preliminary, interim, and terminal evaluations of these intraregional projects, sharing their previous experiences, know-how, and technical assistance.

(2) Project Purpose

Components within Kenya

At the time of the terminal evaluation, it can be said that the project purpose “quality of math and science education at secondary level is strengthened in Kenya through INSET” has been achieved for the most part. The numerical targets (indicators) set in PDM have been mostly accomplished as described below. Aside from the numerical indicators, our interviews with District Education Offices, principals, teachers, students, etc. confirmed that the teaching skills and attitude of teachers have been improved and that the ways students participate in the classes have been transformed in a positive manner.

Indicator 1: By the end of the project, INSET will obtain over 3 on the scale of 0 to 4 in the Lesson Innovation Index⁵ through the tools developed by the Monitoring and Evaluation Task Force.

Result: INSET in 2007 obtained 3.5 in the Lesson Innovation Index, accomplishing the target of “3.0.” There is an increase in the score from 3.3 in 2005, indicating that the quality of classes

is being improved on a continuous basis.

Indicator 2: By the end of the project, lessons observed will obtain over 2 on the scale of 0 to 4 through the use of the ASEI/PDSI checklist and the lesson observation tool.

Result: The result of the ASEI/PDSI checklist was 2.3 on the scale of 0 to 4, attaining the target of “2.0.” This is a significant improvement from 0.8 recorded in 2003/2004.

The result of lesson observation was 2.4 on the scale of 0 to 4, achieving the target of “2.0” and showing a considerable increase from 1.0 registered in 2003/2004.

Components within WECSA

Although the numerical targets set in the PDM have been achieved only partially, there is a possibility that the project purpose “ASEI/PDSI lessons will be practiced in teacher training institutions and secondary schools in SMASE-WECSA member countries” will be achieved considering the survey results indicating that some of the participants of third-country training are practicing ASEI/PDSI lessons, which is spreading among teachers who did not participate in the training.

Indicator: By the end of the project period, the degree to which ASEI/PDSI lessons are practiced by math and science teachers of member countries will improve over 2 on the scale of 0 to 4.

Result: We observed lessons conducted by teachers who had and had not participated in third-country training in the four countries (namely, Malawi, Zambia, Uganda, and Luanda) that had sent many teachers to third-country training. We aggregated the scores and obtained the means of 1.9 in the ASEI/PDSI Checklist and 2.1 in the Lesson Observation Index. Although the former fell slightly short of the target of “2.0,” the latter attained the target of “2.0.”

(3) Overall Goal

Components within Kenya

At present, it is premature to determine whether or not the overall goal “capability of young Kenyans in math and science will be upgraded” will be achieved. There has not been significant improvement over the past three years in the average score in the project implementation achievement test. However, judging from the facts that an increasing number of students are choosing physics and participating in math and science classes more actively, the overall goal may be realized in the future, as students’ heightened interest in math and science could have positive impact on their capabilities.

Components within WECSA

It is difficult to numerically assess to what degree ASEI/PDSI lessons were practiced in SMASE-WECSA member countries. However, past participants of third-country training are

positively accepting ASEI/PDSI. This, combined with other factors such as the illumination of high-ranking officials of the member countries' Education Ministries and startup of JICA's new project, may lead to the realization of the overall goal of "capability of young Kenyans in math and science will be upgraded."

3-2 Summary of Evaluation Result

(1) Relevance: (Kenya) (WECSA) - high

Components within Kenya Although Kenya places education as one of the important issues in its National Development Plan, there is a concern about the strengthening of the country's secondary education, especially some key subjects in math and science. Kenya's official gazette in 2005 attributed a lack of teachers and inadequate teachers training to this problem. Thus, this project's overall goal and project purpose are consistent with the Kenyan government's needs. In addition, since Japanese education assistance policy also emphasizes "math and science education" and "quality of education," this project is in alignment with Japan's ODA policy.

Components within WECSA Strengthening ties among international organizations of Sub-Saharan African nations and the increasing number of participating countries indicate high interest in the enhancement of math and science education in the countries within the region. Also, the fact that these countries are carrying out South-South Cooperation as promoted by BEGIN (Basic Education for Growth Initiative) also conforms to Japan's ODA policy.

(2) Effectiveness: (Kenya) - moderately high, (WECSA) - high

Components within Kenya The National INSET Centre has conducted INSET as originally planned for over 1,100 district trainers, which indicates that it has established a system to function as a training center, as well as a resource center, proving its high effectiveness. District INSET Centers, although they have conducted INSET for over 16,000 math and science teachers, their ability to implement training, including training facilitation for district trainers and logistic preparation, as well as the feasibility of their continuous training plans formulated based on their own curriculum and training materials, remain questionable. Thus, the effectiveness of the project for the whole of Kenya is assessed as "moderately high."

Components within WECSA CEMASTEIA seems to have been established as a resource center, as it is functioning as the secretariat, fostering trainers that can teach ASEI/PDSI methods every year. Therefore, the project purpose will likely be accomplished in the future, proving the high effectiveness of the project.

(3) Efficiency: (Within Kenya) (Within WECSA) - high

Components within Kenya/WECSA Appropriate counterpart personnel have been assigned,

and experts dispatched in a timely manner. Also, a proper amount of administrative budget has been appropriated and executed without delay. While the donated equipment is being utilized efficiently for the most part, some districts within Kenya fail to carry out proper maintenance. Thus, each district needs to be reminded that they are responsible for controlling and maintaining the equipment based on the maintenance guideline of the donated equipment. Nevertheless, the inputs are utilized efficiently for the most part, contributing to the accomplishment of expected outputs. The only impeding factor is that some District INSET sessions are being held while other training programs are taking place in the districts.

(4) Impact: (Within Kenya) - moderately high, (Within WECSA) - high

Components within Kenya Although KCSE (Kenyan Certificate for Secondary Education) alone does not provide a valid index for measuring how much of the overall goal has been achieved, the results of students' academic test, which was conducted as part of the project, as well as the questionnaires returned from teachers and principals, clearly indicate that there is an empirical correlation between student's academic achievement and the transformation of teachers'/students' attitude and improvement of teaching methods and classes. Since it has been reported that multiple aspects of teachers' teaching skills and practicing of new methods were improved, there is a possibility that the overall goal will be accomplished in the future. Considering that teachers are introducing experiments and other activities in other classes besides math and science and that the project's effects are spreading in primary-level education, the impact of this project is assessed as "moderately high."

Components within WECSA It is difficult to assess numerically how much ASEI classes have been practiced in teachers training institutions in member countries. However, Based on the high reputation of ASEI among third-country training participants, an increasing number of countries wanting to participate in SMASE-WECSA, an increasing number of JICA math & science projects within the region, and appropriate technical assistance implemented by the Kenyan WECSA Secretariat, the impact of the project in WECSA is assessed as "high."

(5) Sustainability: (Within Kenya) - moderately high, (Within WECSA) - low

Components within Kenya The sustainability of the National INSET Centre is assessed as "high" for the following reasons: 1) it is positioned as the national training center for in-service math and science teachers within the policy framework of MoEST, 2) necessary funds have been appropriated for the project, 3) capacity for implementing INSET has been adequately developed. The sustainability of the District INSET Centers, on the other hand, is evaluated as "moderately low" due to problems in district trainers' abilities in implementing INSET, including training facilitation and logistic preparation, as well as in the contents and quality of district INSET held at over 100 locations throughout Kenya and in the monitoring by trainers

from the National INSET Centre. Therefore, the overall sustainability is assessed as “moderately high.”

Components within WECSA The Second Decade of Education for Africa launched by the African Union (AU) in 2007 places math and science education as one of strategic pillars and gives it high priority. Also, SMASSE is evaluated positively by WECSA member countries, the number of which is on steady increase. Although the organizational structure and system of WECSA is being developed, most of the funds required for implementing WECSA projects were presently provided by Japanese side. Thus, the sustainability within WECSA is evaluated as “low.”

3-3 Factors that Promoted and Impeded the Realization of Effects

(1) Factors concerning to Planning

Lack of definition of “capability of young Kenyans” and “upgraded” in the overall goal negatively affected the measuring of impact and realization of effects. In addition, judging from the fact that problems remain in the effectiveness and sustainability of District INSET, monitoring and evaluation in conjunction with District QASOs should have been incorporated as part of project activities.

(2) Factors concerning to the Implementation Process

Endorsement by the Kenyan Government, which positioned the project as part of the investment plans of the country’s education sector development plan, was one of the contributing factors that promoted the effects of the project. Appropriate response of the Kenyan side when some participants refused to take part of INSET demanding an allowance for training was another factor that enhanced the effects and sustainability of the project. However, there still is room for improvement in the overall system, such as a need for a liaison office or personnel within CEMASTEIA for better coordination with districts.

3-4 Conclusion

The fact that this project was able to carry out 4 cycles of INSET, the model of which was developed during Phase I, for math and science teachers of high schools throughout Kenya is worthy of special mention. Its relevance and efficiency both in Kenya and WECSA are assessed as “high.” However, since the quality of District INSET within Kenya has yet to achieve the target, and questions remain in the future improvement of follow-up strategies, the overall effectiveness and impact within Kenya are assessed as “moderately high.” As for WECSA, although the effectiveness and impact are both high, the sustainability is low due to lack of funds for continuing the training project.

3-5 Recommendations (specific measures, suggestions, and advice)

In view of the foregoing, the Evaluation Team, in conjunction with Kenyan officials concerned, summarized the following recommendations and revised PDM in the minutes of discussion.

(1) Clarification of INSET strategy after 4th cycle of INSET

In SMASSE Project, four cycles of INSET have been conducted for math and science teachers throughout Kenya over a period of four years to disseminate lesson innovation among teachers by transforming their attitude and teach them the ASEI methods, how to practice them, and how to make impact on students. Through this process, many teachers have begun understanding the methods for practicing student-centered lessons and their effectiveness. In order to support teachers who are practicing the new methods, continuous support will be needed. CEMASTEAs needs to discuss with district-level personnel to set clear strategies for the future, including the future direction of INSET curriculum, CEMASTEAs role as the National INSET Centre, the role of District Education Offices as the District INSET implementer, and how to strengthen ties among National and District INSET Centers.

(2) Enhancement of District INSET Centers' administrative capacities as implementer of District INSET.

Through the activities of this project, District INSET Centers were able to develop a system to collect and manage funds necessary for conducting District INSET, fostering District Trainers, and administering INSET programs by District Planning Commissions and achieved the target of capacity building by gathering adequate human, financial, and organizational resources, thereby proving their sustainability. In the future, District Planning Commissions should play a central role in organizing and administering District INSET under the leadership of District Education Offices. Also, MoEST is advised to adopt a certification system to appoint District Trainers very soon.

In order to conduct District INSET that reflects the needs of teachers and support their classroom endeavors at district level, the administrative capacities of the District Education Office Directors, inspectors, and school principals need to be enhanced, and CEMASTEAs should make more efforts in conducting training in these fields. While the current Stakeholder Workshops emphasize educating the participants on ASEI methods, CEMASTEAs should work closely with MoEST-affiliated organizations to develop innovative training curriculum in order to organize and implement more specialized training programs from a more comprehensive viewpoint that can identify the overall challenges in district education administration and school management

(3) Formulating Action Plan for technical assistance for District INSET by CEMASTEAs

In order to further disseminate the ASEI methods and promote the practicing of student-centered lessons, technical input from CEMASTEAs will be essential for District INSET.

CEMASTEА is urgently advised to pedagogically analyze and examine what kind of training menus should be developed after the 4th cycle and prepare necessary teaching materials as inputs into District INSET.

Also, in order to further facilitate the strengthening of district-level teachers network and sharing of information related to the practicing of ASEI, CEMASTEА should formulate a technical assistance action plan, including assistance for district-level study conferences on each subject of math and science and the compilation of case studies on the practicing of innovative lessons by teachers.

(4) Strengthening of M & E feedback at district level

At present, District INSET is being monitored by CEMASTEА's M & E Team. However, the result needs to be properly analyzed and fed back to the District Planning Commissions in a timely manner by working more closely with QASO Inspectors.

In addition, CEMASTEА needs to work more closely with District Planning Commissions and the directors of District Education Offices by establishing a contact office or assigning a personnel within CEMASTEА that liaise with districts and reviewing the current communication/reporting system in order to accurately grasp the present status and problems of District INSET in each district so that improvements can be made for the next District INSET session.

The current M & E tools should be revised based on the experiences so far to make them more simplified and rational so that they can be utilized by the personnel of District QASO and WECSA member countries.

(5) Possible INSET programs for primary education

After Interim Evaluation, training programs for instructors of primary-level teachers training institutions were initiated, and the participants confirmed the applicability of the ASEI methods to primary education, raising expectations of primary-level INSET. This kind of positive impact of the project should be recognized, and in order to examine and draft primary-level INSET plans and develop pertinent training programs, they, in conjunction with PTTC and other organizations, should collect and analyze teaching materials developed by other donors, etc. and hold stakeholder workshops.

(6) Harmonization of INSET-related programs of MoEST

In order to formulate a comprehensive INSET plan for secondary education and establish an effective and efficient implementation system, MoEST should harmonize various INSET programs that are being implemented by different INSET-related divisions. More specifically, for instance, cooperation between CEMASTEА and Kenya Education Staff Institution (KESI), which conducts training for school principals and District Education Office Directors, should be strengthened.

3-6 Lessons Learned

(1) Comprehensive Approach to Lesson Innovation

It was made clear throughout the project that INSET has an impact on transforming teachers' attitude. In order to extend the impact on enhancing students' learning attitude, scholarship, and capabilities, there need to be comprehensive and strategic approaches to supporting teachers in practicing effective lessons. This project was able to enhance the effects through comprehensive and strategic approaches by combining the teachers' training with the improvement of school administration and district education administration through capacity building of District Education Administrators. For any project that is designed to train teachers, a comprehensive approach, including the improvement of school administration and district education administration, will need to be strengthened in order to have impact on students.

(2) Building Logic for Creating Ripple Effect of the Project

To improve the quality of education, this project was able to innovate lessons and transform teachers' attitude through the implementation of INSET. Although this kind of project approach is effective, in order for the final impact of INSET to lead to the capacity enhancement of students, various processes leading to that point need to be examined more closely from a pedagogical viewpoint using analytic hierarchy process based on the experience of this project to determine and verify the effectiveness of the methods of setting outputs and goals, indices, and monitoring so that PDM logic building for future education projects will be improved.

(3) Utilizing the Strengthened Teachers Network through INSET

As a result of INSET, it was confirmed that the human relations among district teachers, trainers, and district education officers have been strengthened and that a network is being built among them to organize voluntary activities such as sharing information and forming study groups at each locality. In a project that aims to reform teachers' awareness through INSET, teachers will need continuous support for practicing new methods. Thus, follow-up training for teachers utilizing the teachers' network built through INSET, which is a valuable social asset, should be conducted.

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