

Summary of Terminal Evaluation

1. Outline of the Project	
Country: the Republic of Malawi	Project Title: Strengthening of Mathematics and Science in Secondary Education (SMASSE) INSET Malawi Phase II
Issue/Sector : Basic Education	Cooperation Scheme : Technical Cooperation
Division in Charge: Basic Education Division 2, Basic Education Group, Human Development Department, JICA	Total Cost: 350 million yen (the actual cost spent until the end of the fiscal year 2010 and the planned amount to be spent by the end of the Project period)
Period of Cooperation: (R/D) 4th of August 2008 – 3rd of August 2012	Partner Country’s Implementing Organization: Ministry of Education , Science and Technology (MoEST)
	Supporting Organization in Japan: -
Related Cooperation: <ul style="list-style-type: none"> • Grant Aid: “The Project for Improvement of Domasi College of Education” (2004) and “the Project for Re-Construction and Expansion of Selected Community Day Secondary Schools” (2010) • Technical Cooperation: “Strengthening of Mathematics and Science Education through In-Service Training Project” (2004-2007) • Japan Overseas Cooperation Volunteer: Mathematics and Science Teachers 	
1-1. Background of the Project <p>The Government of Malawi introduced its Free Primary Education Policy in 1994, which led to a drastic increase in the number of students eligible to enter into the secondary level (around the year 2000). MoEST has taken actions with respect to this situation; however, various challenges remain. The decline in the educational performance of students, especially in mathematics and science, is evident from the results of Junior Certificate of Education and Malawi School Certificate of Education examinations. One of the main causes of their poor performance has been identified as a significant shortage of qualified teachers, but the problems in secondary level education also extend to poor teaching methodology that is characterised as “teacher-centred,” and the absence of sufficient teaching and learning materials (such as equipment and chemicals for science experiments).</p> <p>Against this background, MoEST in collaboration with JICA conducted the “Strengthening of Mathematics and Science Education through In-Service Training Project” (SMASSE Phase 1) and supported training of mathematics and science teachers in the South Eastern Education Division (SEED). During Phase 1, which used the Domasi College of Education (DCE) as the base for project implementation, efforts were made towards institutionalising INSET through promoting the development of a teacher’s training policy and training costs to be included as regular expenses in MoEST’s budget. As a result, MoEST requested for SMASSE Phase 2 (hereinafter referred to as “the Project”), which expanded the project target areas to include six education divisions.</p>	
1-2. Project Overview <p>For the improvement of quality of mathematics and science in secondary education in Malawi, the Project aims to establish the foundation for implementing the In-Service Education and Training (INSET) for mathematics and science teachers in public secondary schools in all six education divisions.</p>	

(1) Super Goal: The abilities of secondary school students in mathematics and science are improved in Malawi.

(2) Overall Goal of the Project: The quality of teaching & learning of mathematics and science is improved in secondary schools in Malawi.

(3) Project Purpose: Quality INSETs for secondary mathematics and science teachers at Divisional level are provided.

(4) Outputs

- 1) Capacity of Divisional Trainers is strengthened.
- 2) National INSET centre and Divisional INSET centre as resource centre are strengthened
- 3) National & Divisional INSETs and Monitoring and Evaluation (M&E) are implemented.
- 4) Sustainable INSET management system is strengthened at all levels.

(5) Inputs (As of the Terminal Evaluation)

Japanese side:

Long-term Experts: 2 persons Equipment: 47.9 million Japanese Yen (JPY)

Short-term Experts: 2 persons Local Cost: 123.0 million JPY

Training in Japan: Long-term: 5 persons, Short term: 75 persons (out of which, the costs of sending 4 persons to training were covered by the project budget)

Training in Kenya and Malaysia:

77 persons (out of which, the costs of sending 39 persons to training were covered by the project budget)

Malawian Side :

Counterpar 40 persons Local cost: 94.9 million Malawian Kwacha (MWK)

Land and facilities: Project office for the SMASSE Secretariat in DTED, national INSET centre (DCE), and divisional INSET centres (19 secondary schools nation-wide)

Others (monitoring and evaluation expenses, allowance and transportation costs for participants)

2. Evaluation Team

Members of Evaluation Team (Japanese side)	[Leader] Mr. Satoru Takahashi, Visiting Senior Advisor (Education), JICA
	[Evaluation Planning] Ms. Minako Sugawara, Deputy Director, Basic Education Division 2, Basic Education Group, Human Development Department, JICA
	[Evaluation Analysis] Ms. Setsuko Kanuka, IMG Inc.
Evaluation Period	8th January 2012 - 2nd February 2012
	Type of Evaluation : Terminal Evaluation

3. Results of Evaluation

3-1. Achievement of the Project

(1) Achievement of the Outputs

In order to product the expected Outputs, four National INSETs, two Divisional INSETs and M&E activities on INSETs have been implemented as planned. Through accumulating the experiences of implementing INSETs, the Project has: strengthened National and Divisional Trainers' capacity to conduct training; strengthened DTED's capacity to plan budgets for INSET activities, strengthened managerial capacity of National and Divisional Coordinators, and Divisional INSET Managers

(principals of the secondary schools designated as Divisional INSET Centres), and improved training environments of National and Divisional INSET Centres to host INSETs.

All four Outputs' indicators have been evaluated as “achieved” or “mostly achieved;” consequently, the Outputs have been evaluated to be “achieved,” or “mostly achieved.” In order to increase their achievement levels, there is still room for improvement in: various training skills of National and Divisional Trainers (e.g. facilitation skills); maintenance of Divisional INSET Centres' facilities and equipment; and capacity of those who in managerial positions to handle various administrative challenges that occur when implementing INSETs.

(2) Prospect of Achieving the Project Purpose

Two Divisional INSETs have been successfully implemented in 2010 and 2011. Since the overall mean value of “the INSET Quality Index” exceeded the target value in both the Divisional INSETs, it is evaluated that the Project Purpose is most likely to be achieved if the third Divisional INSET, which is planned to be held in April 2012, is implemented at the same quality level (or a higher).

3-2. Summary of Evaluation Result

(1) Relevance: High

The Relevance of the Project has been evaluated as high because the need for improvement of education quality has continued to be in line with the Malawian Government's development policy and Japanese Government's aid policy to Malawi, and continues to be in line with the needs of the Malawian people.

The Malawian Government places the improvement of education quality as one of the five objectives in the *Policy & Investment Framework 2000-2015*, which is the principal national educational policy in Malawi. The institutionalisation of INSET and the continuous development of teachers for secondary education are included in the scope of the *National Education Sector Plan 2008-2017*, the *Education Sector Implementation Plan 2009-2013*, and the *National Strategy for Teacher Education and Development 2007-2017*. These policies stress the need for improving the quality of teachers, highlighting that a significant number of secondary school teachers in Malawi are under-qualified (approx. 60%).

The Japanese aid policy towards Malawi also includes the enhancement education quality as one of its priority assistance areas. In addition, one of the focus areas of the *Japan's Education Cooperation Policy 2011-2015* is to provide quality education for all by comprehensively improving the learning environment, including teacher training. The Project is also in line with the *Yokohama Action Plan*, adopted at the Tokyo International Conference on Africa Development (TICAD) IV (2008). Based on these policies, Japan has been implementing capacity development projects targeting mathematics and science teachers in Africa; thus Japan has ample empirical and technical advantages in strengthening secondary level mathematics and science education.

(2) Effectiveness: High

The Effectiveness of the Project has been evaluated as high because the prospect of the Project Purpose being achieved by the end of the project period is deemed promising and there is a clear linkage between the achievement of the Project Purpose and the successful productions of Outputs.

In total two Divisional INSETs have been successfully implemented. In both INSETs, the overall mean value of “the INSET Quality Index” exceeded the target value, indicating that in both occasions that quality INSET at divisional level had been provided. On the condition that the third Divisional INSET will be implemented at the same quality level or higher as previous INSETs, the prospect for

achieving the Project Purpose is evaluated as promising.

The four Outputs cover all components (trainers' capacity, INSET Centres' facilities, M&E, and INSET management) that are necessary to provide quality INSET; therefore, successful production of Outputs are directly linked to the achievement of the Project Purpose. As discussed in the "Achievement of the Outputs" section, all expected Outputs have been either achieved or mostly achieved, it is evaluated that a solid technical, material, logistical, administrative, and managerial foundation for the provision of quality mathematics and science teacher training has been established. While the achievement levels of four Outputs are evaluated as high and the prospect for achieving the Project Purpose is deemed promising, there are areas that need to be improved through continuing the implementation of annual INSET cycle, such as the capacity of Divisional Trainers and Division INSET Centre Managers.

(3) Efficiency: Medium

The Efficiency of the Project has been evaluated as medium because all inputs have been allocated, and used effectively to contribute to the Output productions, although there have been some constraints on the production of Outputs caused by issues such as budget disbursement delays.

DCE and 19 secondary schools have been assigned as National and Divisional INSET Centres. The use of existing facilities has increased the Project's Efficiency. Regarding human resources, MoEST personnel and the Japanese expert, who were involved in implementation of Phase 1, have been continuously assigned to the Project, which has also increased the Project's Efficiency. Through this, amicable working relationship established in Phase 1 and their understanding about how to apply INSET in the Malawian context have contributed to the smooth implementation of the Project activities. Furthermore, a considerable number of stakeholders including C/Ps, Divisional Trainers, and head-teachers have attended training in Japan, Kenya or Malaysia, which created a strong technical foundation of human resources, sharing an appreciation towards what the Project aims to accomplish, and broadened their views on education by acquiring the knowledge of educational practices in other countries. On such an operational basis established by Inputs, activities have been conducted mostly as planned and directly contributed to the production of Outputs. Meanwhile, budget disbursement delays and boycotts of INSET by participants reduced the extent to which Inputs were successfully converted into Outputs.

(4) Impact: Medium

The Impact of the Project has been evaluated as medium because the prospect of the Overall Goal being achieved is promising based on the achievement levels of the Overall Goal indicators but there are still challenges for mathematics and science teachers to apply their skills and knowledge acquired from SMASSE INSET in their regular lessons.

After the second Divisional INSET (2011), a joint classroom observation (M&E) activity was conducted by the Directorate of Inspection and Advisory Service (DIAS) team and the Project M&E team (DTED) on secondary school level mathematics and science lessons sampled across the country. The overall mean value of "the Teaching & Learning Quality Index," which was evaluated using the DIAS's own evaluation tool (Evidence Form 1), was 2.9, exceeding the Project's target value (below 3.0). The result of Project M&E team, which used SMASSE's own evaluation tool (ASEI/PDSI checklist), indicated that while the overall mean value of the 2011 M&E did not achieved the target goal but the quality of teaching and learning have continuously improved since the Baseline Survey in 2009. Based on the achievement levels of these two indicators, the prospect for achieving the Overall Goal within three to five years after the completion of the Project is promising.

Conversely, it was confirmed that teachers who participated in Divisional INSETs have not been able to sufficiently apply the skills and knowledge they acquired from SMASSE INSET. Since Divisional INSET only takes place once a year and cluster and school-based training, that could supplement Divisional INSETs, have only been implemented in limited places and frequency, it still needs some time for teachers to substantially improve their teaching methods. In order to further improve the quality of lessons, there are essential issues that need to be addressed. For example, there are many mathematics and science teachers that do not sufficiently prepare lesson plans and many schools management departments do not conduct school-based monitoring to control the quality of lessons. These are the basic conditions needed to deliver quality mathematics and science lessons.

In addition, one notable unintended positive impact was observed. The SMASSE Secretariat has been actively involved in the Secondary School Curriculum and Assessment Reform (SSCAR) process as the experiences of SMASSE INSET have been highly valued.

(5) Sustainability: Medium

The Sustainability of the Project has been evaluated as medium because a solid institutional ground has been established to maintain SMASSE INSET's sustainability, but there are some concerns in regard to the stability of human resources and the continuous securing of the budget for some portions of the Project activities, as well as the need for further strengthening of technical skills of those involved.

From the institutional perspective, Malawi's education policy documents place a high priority on teachers' professional development. This ensures that the Malawi Government will continue its implementation of SMASSE INSET after the completion of the Project.

From the organisational perspective, SMASSE INSET is included in the department's annual Programme of Work (POW) and has been solidly established as a DTED's regular programme. From the financial perspective, the budget of 40.0 million MWK for SMASSE INSET has been secured for FY 2011/2012, which has been significantly increased from 20.0 million MWK in FY 2008/2009. As an issue to be addressed in terms of financial sustainability, it is observed that there is no general consensus on which departments/secondary schools should bear repair costs for National and Divisional INSET Centres after the Project's completion, which have until now been covered by the Japanese side. Additionally, in order to enhance the level of sustainability, the following two issues need to be addressed: (1) the positions of National Coordinators and National Trainers from DTED have not been made official and (2) Education Division Offices do not have their own budgets for conducting M&E of SMASSE INSETs, which limit their initiatives in implementing M&E on SMASSE INSETs.

From a technical perspective, through implementing two annual INSET cycles, those involved in INSET implementation have gained foundational technical and administrative capacities to implement SMASSE INSET. Nonetheless, there is still room for improvement of: (1) technical capacity of National Trainers and Divisional Trainers, (2) quality control of SMASSE INSET (write-ups and training sessions), and (3) administrative and management capacity of the SMASSE Secretariat and Divisional INSET Centres.

3-3. Factors that Promoted Realization of Effects

(1) Factors Concerning to Planning

- Through the joint classroom observation activity by DIAS and DTED after the second Divisional INSET, two departments were able to share opinions for the improvement of SMASSE INSET and teaching quality in Malawi.
- The cascade-type INSET has allowed the provision of standardised training to a large number of

teachers at once.

- INSETs have been encouraging mathematics and science teachers to work collegially, which has resulted in a greater level of peer-to-peer consultation with other teachers.

(2) Factors Concerning to the Implementation Process

- The Project has been implemented with a strong sense of ownership by the Malawian side. The factors of this ownership's formulation include: substantial involvement of a wide range of stakeholders in project planning, which facilitated them to fully familiarize themselves with PDM contents, adopting of a comprehensive approach to ensure sustainability; by such means as fully incorporating the SMASSE INSET programme into the MoEST's existing organizational structure and positing it as DTED's regular programme.
- This project was conducted with a robust organisational commitment from the Malawian side. Its commitment was demonstrated through the increase in the SMASSE INSET's annual budget, flexible responses to SMASSE INSET's (potential) challenges, and the Minister of Education, Science and Technology's attendance at National INSET's opening and closing ceremonies.

3-4. Factors that Impeded Realization of Effects

(1) Factors Concerning to Planning

- SMASSE INSET Completion Certificates are not officially recognized as a professional qualification when being considered for promotion, resulting in lowering the motivation of INSET participants.

(2) Factors Concerning to the Implementation Process

- Due to national-wide fuel shortages, fares of public transports have been rising unpredictably. In the fourth National INSET (2012), the actual transportation cost spent by each participant was more than the budgeted amount and each received only the budgeted amount – no additional transportation costs were provided to cover the shortfall during the INSET– and this decreased participants' morale. On its last day, participants boycotted the fourth National INSET in protest for training condition, including the issue of transport costs reimbursement.
- The Malawian Government announced, before the second Divisional INSET, two budgetary control measures regarding the mode of payment by the all government departments and school revenues. They created confusion in regard to Divisional INSET procedures among those who were involved in implementation and much effort had to be exerted to create workable conditions, compromising the quality of the second Divisional INSET.

3-5. Conclusion

Building onto the progress made in Phase 1, the Project has successfully expanded its target areas to cover all education divisions and has established an INSET system that fits into an educational administrative structure of the Malawian Government. Despite the many administrative and financial management challenges, the Project has: (1) strengthened professional capacity of National Trainers and Divisional Trainers; (2) strengthened National and Divisional INSET Centres' capacity as resource centres; (3) implemented two annual INSET cycles in 2010 and 2011, and (4) strengthened MoEST's budget planning capacity and INSET management capacity of those who are involved INSET implementation at all levels. Based on such production of Outputs, the Project Purpose ("the provision of quality INSETs for secondary mathematics and science teachers at divisional level"), is evaluated that it is likely to be achieved by the end of the Project period. This is, however, dependent on the successful implementation of the third Divisional INSET.

For the improvement of the quality of mathematics and science in secondary education in Malawi, there are still many organisational, financial and technical challenges. In order to address them, the Team recommends the implementation of the measures outlined below.

3-6. Recommendations

Based on the evaluation, recommendations are made in order to: (1) establish a sustainable INSET system in Malawi; (2) improve and maintain the quality of INSET; and (3) ensure that teachers apply knowledge and skills acquired through INSET to their teaching. Upon consultation, both sides have agreed to take actions on the following recommended items. They are organized into three timeframes: 1) short-term, 2) mid-term, and 3) long-term. Brackets following each recommendation indicate organisations/departments that are expected to be responsible for its implementation.

(1) To establish a sustainable INSET system in Malawi

1) Short-term

- (a) Implement successfully the third Divisional INSET in a good quality. (DTED, Education Division Offices, and Divisional INSET Centres)
- (b) Prepare guidelines on financial management of Divisional INSET, which cover costing, requesting budget, disbursing, spending, and ensuring accountability, and communicate it to all stakeholders of Divisional INSET. (DTED)
- (c) Secure and allocate sufficient budgets for INSET activities in FY2012/2013. (SEST and Department of Education Planning)
- (d) Secure and allocate necessary budget to National and Divisional INSET Centres for repairing their facilities for INSET in FY2012/2013. (SEST, Department of Education Planning, and Education Division Offices)
- (e) Improve managerial capacity of INSET Centre Managers by sharing good experiences among INSET Centre Managers and INSET Centre Coordinators. (DTED, Department of Secondary Education, and Education Division Offices)

2) Mid-term

- (a) Increase the budget allocation to Education Divisional Offices for a close monitoring of Divisional INSET. (SEST, Department of Education Planning, DIAS, and Education Division Offices)
- (b) Establish permanent posts of National Coordinators and National Trainers within the MoEST structure. (SEST, Department of Education Planning, Department of Human Resource Management and Development, Department of Secondary Education, and DTED)

3) Long-term

- (a) Establish a career development system for teaching professions in which the Teaching Service Commission and the Department of Human Resource Management and Development appropriately recognize the Certificate of National INSET, the Facilitation Certificate for Divisional Trainers, and the Certificate of Divisional INSET during promotion. (SEST, Department of Education Planning, Department of Human Resource Management and Development, Department of Secondary Education, DTED, and Teaching Service Commission)

(2) To improve and maintain the quality of INSET

1) Short-term

- (a) Compile and archive all existing INSET write-ups at Divisional INSET Centres for further reference. Those are expected to be referred to by teachers who did not attend the past INSETs.

(DTED)

2) Mid-term

- (a) Initiate the process of developing a strategy for the improvement and re-arrangement of INSET courses or sessions so as to accommodate diverse needs of teachers with different backgrounds. (Department of Education Planning, DIAS, Department of Secondary Education, and DTED)
- (b) Ensure to receive technical advice on all INSET write-ups from DIAS to enrich the contents. (DIAS and DTED)

3) Long-term

- (a) In order to further strengthen the quality of Divisional Trainers, provide them with the following opportunities: continuous training (e.g. National INSET); be monitored in their teaching by DIAS and DTED; and Facilitating various teacher professional development activities (e.g. cluster training and school-based training). (DIAS, DTED, Education Division Offices and secondary schools)

(3) To ensure that teachers apply knowledge and skills acquired through INSET to their teaching

1) Short-term

- (a) Continue joint M&E activities (lesson observations). (DIAS and DTED)
- (b) Conduct a situational analysis to explore contributing and impeding factors for teachers to apply the acquired knowledge and skills through SMASSE INSET. (DTED)
- (c) Issue a circular or directive to enforce the preparation of lesson plans by secondary teachers as a part of their daily work. (DIAS and Department of Secondary Education)

2) Mid-term

- (a) Encourage school management to supervise teachers in preparing lesson plans and to monitor lesson implementation. (DIAS, Department of Secondary Education, and DTED)

3) Long-term

- (a) Continue SMASSE special training for student teachers at DCE. (DCE, DTED, and JICA)
- (b) Conduct a tracking survey on student teachers who underwent SMASSE special training in 2011 to see whether their teaching is better than fellow teachers who had not attend SMASSE special training. (DIAS, DCE, DTED, and JICA)

3-7. Lesson Learned

- (1) The Project had carefully planned to develop capacity of internal human resources of the responsible organisations at all levels by providing various overseas training opportunities and involving them in the Project. This combined strategy of capacity development and active involvement of key persons has contributed to establishing the strong foundation of organisational sustainability. It is important to develop capacity of internal human resources, instead of only exploiting their skills and expertise, when a project is implemented within an existing structure.
- (2) Divisional Trainers have been monitored by the national M&E team not only in Divisional INSET but also in their teaching. Classroom observation conducted after the Divisional INSET had been appreciated by Divisional Trainers because they could get technical advice for their teaching from the M&E team (National Trainers and Divisional Coordinators). This exercise contributes to improving the capacity of a Divisional Trainer as a trainer as well as a teacher.

- (3) The DIAS and DTED had conducted joint lesson observation for M&E purpose in 2011 for the first time. They found this activity effective because; (1) they could provide technical advice to teachers from their respective professional experiences; and (2) National Trainers from DTED could take advantages of DIAS's authority when entering into classrooms. In addition, this activity has promoted further technical collaboration between two departments, as in the case that DIAS staff participated in M&E of the 4th National INSET.
- (4) The major part of funds of Divisional INSET is managed by DTED. Since all transactions of the fund are controlled and checked by the Secretariat, it is primarily accountable system and helps to efficiently standardize the level and contents of expenditure at each Divisional INSET Centre. Although the effective operation of this system highly depends on the timely disbursement of the government budget, adopting this centrally-controlled funding mechanism greatly contributes to ensuring accountability of INSET funds and equalising the INSET delivery at all centres to some extent.

3-8. Follow-up Situation

In August 2011, the Malawian Government submitted a request for technical cooperation to the Japanese Government to expand the Project's effects. The request was for further strengthening of mathematics and science teachers' capacity through the continuous implementation of INSET and the implementation of training on practical teaching methods in the Pre-Service Education and Training (PRESET) course, which is conducted before teaching practicum. Based on the result of the Terminal Evaluation, future cooperation will be considered.