

## Summary of Final Evaluation

<b>1. Outline of the Project</b>	
<b>Country :</b> Burkina Faso	<b>Project Title :</b> Project of Teachers Training Improvement in Science and Mathematics at the Primary Level Phase II (SMASE–Burkina Faso II)
<b>Issue/Sector :</b> Basic Education	<b>Cooperation Scheme :</b> Technical Cooperation
<b>Division in charge :</b> Basic Education Division 2, JICA Human Development Department	<b>Total Cost :</b> 225,622,000YEN (at the time of the Terminal Evaluation)
<b>Period of Cooperation</b>	(R/D) : November 9th, 2011
	3 years and 10 months December 2011 - September 2015
	<b>Partner Country's Implementing Organization :</b> Ministry of Basic Education and Literacy (MENA)
	<b>Japanese Cooperation Organization :</b> N/A
<b>Related Cooperation :</b>	<ul style="list-style-type: none"> <li>- Grant Aid/Grant Aid for Community Empowerment on “Construction of primary schools (Phase I~V) ”, Grant Aid for Community Empowerment on “Construction of National school for Primary Teacher of Dori”</li> <li>- Grant Aid/Grant Aid for General Projects on Construction of National School for Primary Teacher of Kaya”</li> <li>- Technical Cooperation on “School Management Committee Support Project” (November 2009 - March 2014) and “School Management Committee Support Project Phase II” (May 2014 - April 2017)</li> <li>- Individual expert “Policy Advisor” (Education) (2014 - 2016)</li> <li>- Japan Overseas Cooperation Volunteers (JOCV) “Primary School Teachers”</li> </ul>
<b>1-1 Background of the Project</b>	
<p>The Government of Burkina Faso formulated “10-Year Basic Education Development Plan (PDDEB) in 2002. In its Phase I (2002-2007) the Government made efforts to carry out the plan focusing on the “quantitative improvements in education” and in its Phase II (2008-2010) it focused on “qualitative improvements in education”. The net enrollment rate in primary education improved from 38.2% in 2002 to 62.2 % in 2010, mainly thanks to the introduction of gratuitous primary education system in 2007.</p> <p>However, qualitative improvements in education have not been achieved sufficiently. For example the primary education completion rate has not yet reached fifty percent in 2012. Then the Government of Burkina Faso prepared the Development Strategy Programme of Basic Education (PDSEB) for a period of ten years beginning form 2012 and ending 2021, which contains 5 programs<sup>1</sup> including those for “Increased access to formal basic education” and “Improvement in quality of formal basic education”. In places of education, there is strong demand for in-service education and training (INSET) to enable</p>	

<sup>1</sup> In addition to the 2 programs mentioned in the above, 3 programs are included in the Development Strategy Programme of Basic Education (PDSEB) 2012-2021 They are namely programs for “Development of non-formal education”, “Administration of formal and non-formal basic education sector” and “Effective and efficient management of PDSEB”.

teachers to practice more learner-centered approach. The demand for INSET exists, because many teachers do not pay much attention to the level of understanding of students in classrooms, while they teach merely by writing on the chalkboard and place emphasis on memorization.

Under such circumstances, JICA executed “Project of Teacher Training Improvement in Science and Mathematics at the Primary Level (SMASE – Burkina Faso)”, hereinafter referred to as “the phase 1 project”, for 3 years from January 2008. The phase 1 project aimed to extend practices of learner-centered approach in science and mathematics classrooms with ASEI-PDSI<sup>2</sup>, practical ways to implement the practices, in the four provinces of Kadiogo, Ouhritenga, Sanmatenga, and Tuy. It intended establishment of training structure, development of training contents, training of trainers, provision of training for teachers, and strengthening of monitoring by local education officers, making good use of pedagogic facilitation groups (GAP)<sup>3</sup> and monitoring by inspectors. The Terminal evaluation of the phase 1 project confirmed improvements in teaching practices in classrooms in all the pilot provinces mentioned above. In order to extend the results produced by the phase 1 project to the 45 provinces in the 13 regions of Burkina Faso, the Project was requested by the Ministry of Basic Education and Literacy, hereinafter referred to as “MENA”.

## **1-2 Project Outline**

The Project aims at improving the quality of science and mathematics classes by extending learner-centered approach to teachers of the public elementary schools in Burkina Faso. More specifically, the Project implements national and provincial training for the provinces other than the target provinces of the phase 1 project, and strengthens monitoring and technical assistance for the teachers in whole the country. The Project also intends to establish a mechanism producing training contents in the target provinces and to support the Government in establishing a system to continue the activities by itself. With these activities, the existing INSET system including GAP was expected to be reinforced and it was hoped that science and mathematics classes with learner-centered approach would expand to the whole country, contributing to the improvements in the quality of the classes. However, MENA changed its policy suspending GAP INSET system and decided to adopt 5 day short-term intensive training sessions once a year instead. In order to adapt to this policy change, the Project adjusted cooperation activities during its Mid-term review. In particular, the Project decided to continue providing INSET on ASEI-PDSI through the training sessions which are to be implemented annually according to school years and intend to improve teachers’ pedagogical practices with the development and the distribution lesson plans in science and mathematics.<sup>4</sup>

---

<sup>2</sup> An abbreviation for the teaching approaches developed by the Project for Strengthening of Mathematics and Science in Secondary Education in Kenya from July 1998 to June 2003, which was supported by JICA. ASEI-PDSI stands for the teaching approaches (Activity, Student-centered, Experiment and Improvisation) which place emphasis on a cycle for improvements (Plan, Do, See and Improve).

<sup>3</sup> Seminars organized voluntarily by the teachers themselves under the control of the General Directorate of Basic Education (DGEB) of MENA.

<sup>4</sup> MENA implemented training sessions on ASEI-PDSI for all the directors and teachers of public primary schools of the 45 provinces during the days from 23rd to 28th February, 2015.

(1) Super Goal  
Students' achievement in science and mathematics is improved in all public primary schools in Burkina Faso.

(2) Overall Goal  
Students' learning in science and mathematics classes is improved in all public primary schools in Burkina Faso.

(3) Project Purpose  
Teachers' pedagogical practices of the learner-centered approach in science and mathematics are improved through continuous teacher training.

(4) Outputs  
Output 1 : The lesson plans based on the learner-centered approach in science and mathematics are developed.  
Output 2 : The capacities of inspectors / pedagogical advisors and teachers are improved with regard to the learner-centered approach in science and mathematics.  
Output 3 : The system for collecting and analyzing information on practices of the learner-centered approach is reinforced.

(5) Inputs (at the time of the Terminal Evaluation)  
Japanese Side : Total (as of the Terminal evaluation) 225.62 million JPY

- Long Term Experts : 2, Short Term Experts : 5
- Training opportunities : 23 short-term trainees in Japan and 10 third-country trainees
- Provision of equipment and materials : 6.71 million JPY
- Local costs : 115.43 million JPY

Burkina Faso Side

- Counterpart personnel assigned to the Project : 25
- Local costs : 77.14 million JPY
- Others (Costs for monitoring and evaluation, allowance and transportation fee for training participants etc.)

**2. Final Evaluation Team**

Members of the team	MURATA Toshio	Leader	Senior Advisor in education, JICA
	MOCHIZUKI Hiroshi	Cooperation and coordination	Assistant Director Basic, Education Division II, Human Development Dept. JICA
	YAMAGUCHI Yutaka	Evaluation and analysis	General Manager, Cranberry, Inc.
Period of Evaluation	April 6, 2015 – April 23, 2015		Type of Evaluation : Terminal Evaluation

### 3. Overview of Evaluation Results

#### 3-1. Project Performance

##### (1) Outputs

Output 1 : The lesson plans based on the learner-centered approach in science and mathematics are developed. : Achieved

Indicator 1-a : The lesson plans that cover all lessons of science and mathematics are developed.

Indicator 1-b : More than 70 % of teachers are satisfied with the contents of the lesson plans developed by the Project.

Output 1 was achieved thanks to active participation by Burkina Faso side in the development process of lesson plans.

All the lessons plans by National Trainer and volunteer teacher were developed for science and mathematics of 6 grades in primary school level by December 2014. For the purpose of enhancing their quality, a short-term expert was dispatched from the Japanese side for the development of science and mathematics lesson plans in addition to a long-term expert in science and mathematics education.

80.2% of teachers who had utilized the lesson plans, declared satisfaction with the contents of the lesson plans in a questionnaire survey. The contents of the lesson plans were designed to promote teachers' implementation of the learner-centered approach in classrooms, reducing their burden of preparation for the class.

Output 2 : The capacities of inspectors / pedagogical advisors and teachers are improved with regard to the learner-centered approach in science and mathematics. : Achieved

Indicator 2-a : More than 90 % of inspectors / pedagogical advisors and teachers are trained with regard to the learner-centered approach.

Indicator 2-b : The score of post-test in the continuous teacher training on the learner-centered approach is improved in comparison with that of pre-test.

Output 2 was achieved with the trainers' training implemented by the Project and national training sessions conducted by MENA for directors and teachers. The Project trained 97.3% of the pedagogical advisors, inspectors, instructors of ENEP (Ecole Normale de l'Enseignement Primaire) and ENS-UK (Ecole Normale Supérieure de l'Université de Koudougou) and graduates of those schools to create trainers of the learner-centered approach, preparing for the training sessions for directors and teachers. More than 99% of the school teachers and directors of public primary schools were trained on ASEI-PDSI approach in the national training sessions conducted by MENA in February 2015. Sampling tests were implemented to measure the degree of understanding by inspectors and teachers on the learner-centered approach. The score of post-test was improved compared with that of pre-test implemented during the training sessions.

Output 3 : The system for collecting and analyzing information on practices of the learner-centered approach is reinforced. : Unmeasured

Indicator 3-a : More than 50 % of inspectors / pedagogical advisors carry out monitoring on practices of

the learner-centered approach, and provide technical support.

Indicator 3-b : Collecting and analyzing information on the monitoring results and good practices of the learner-centered approach become routine services in DGIREF.

Indicator 3-c : The funds necessary for continuously enhancing teacher professional development on the learner-centered approach are incorporated in the regular budget of DGIREF from the fiscal year 2015.

Because of the impact of political change that occurred in October 2014 and under the process of budgeting to each department and reorganization in MENA, achievement of the output 3 was unknown.

General Department of Basis Education (DGEB) is in charge of collecting information, printing and distributing necessary documents, which is a part of its routine services. Analysis of monitoring results and good practices will be in charge of General Department of Institute of Education and Training Reform (DGIREF). DGIREF will be in charge of preparing necessary funds for securing the quality of training contents. Since the budgeting by DGIREF is not confirmed, the monitoring would be continued.

In the rest of the project period, activities are planned for the preparation of continuous operation of some project activities. Specifically, the information collected and compiled on the teaching evaluation will be continued by utilizing the mechanism of existing CEB report collection, and DGEB will be took over them.

Delays were produced in carrying out monitoring and technical advising services by inspectors and pedagogical advisors of CEB, because of a delay caused by political change in Burkina Faso, occurred in late of October 2014, in the implementation of the national training sessions by MENA and in the distribution of lesson plans.

## **(2) Project Purpose**

Project Purpose : Teachers' pedagogical practices of the learner-centered approach in science and mathematics are improved through continuous teacher training. : Expected to be achieved

Indicator : In science and mathematics lessons in 13 trained provinces :

- a. More than 90 % of teachers practice the learner-centered approach according to the lesson plans.
- b. More than 70 % of teachers obtain the score of 3 or 4 concerning the item number 7.4 in the monitoring / evaluation tool.
- c. More than 70 % of teachers obtain the score of 3 or 4 concerning the item number 3.3 (for students) in the monitoring / evaluation tool.

The project purpose is expected to be achieved, having observed improvement in teachers' pedagogical practices of the learner-centered approach in classrooms.

In mathematics, 85.2% and in science 86.5% of the teachers obtained successful scores (3 or 4) in the assessment of the lesson with regard to respect of lesson plan, concerning the item number 7.4 in the monitoring / evaluation tool in the end-line survey conducted by the Project.

In addition, in science, 73.5% of teachers obtained successful scores (3 or 4), although in mathematics slightly lower scores (65.1%) than the target (70%) were obtained by teachers with regard to students' proper performance according to the teacher's instruction, concerning the item number 3.3 for students in the tool. Furthermore, comparing more comprehensive baseline and end-line surveys, a gradually

improving tendency in teachers' pedagogical practices was noted, in the results of monitoring and evaluation tool of teachers' pedagogical practices in Science and mathematics. As to teachers' practice of the learner-centered approach according to the lesson plans, national-level surveys could not be conducted, because of the delay in the distribution of lesson plans by MENA.

### **3-2 Summary of Evaluation Results**

#### **(1) Relevance : High**

- The Project is in line with the "Program for Strategic Development of Basic Education (PDSEB) 2012-2021" one of the priority programmes of PDSEB is for improvement in the quality of formal basic education. PRESET and INSET are indicated as means for the improvement.
- The project meets the target group's needs. There are strong needs of INSET for primary school teachers, which became more serious with the rapidly increasing number of teachers newly incorporated in each year and have not enough opportunities for training.
- The Project is in line with the Japanese Government's Country Assistance Policy for Burkina Faso in December 2012. It is indicated in the Rolling Plan dated April 2014. This project meets its policy, which is indicated the acceleration of growth and strengthening of human capital. The Project belongs to a priority area of "Improvement of education quality" of the plan.
- The project is in accordance with the "Yokohama Declaration 2013" agreed upon by the participants of the "Tokyo International Conference on African Development (TICAD) V". Strengthening teaching and learning of science, technology, engineering and mathematics is one of the focus areas of TICAD V.

#### **(2) Effectiveness : Medium**

- Improvement in teachers' pedagogical practices was observed using learner-centered approach in science and mathematics lessons at the primary school level, through the results of monitoring and evaluation conducted by the Project. Positive difference was also observed for teachers provided with lesson plans compared with those not provided, in the end-line survey.
- MENA conducted training sessions in February 2015, and almost all the school teachers and directors of public primary schools were trained on ASEI-PDSI approach. Project activities for the preparation of the nation-wide training sessions functioned well. More than 97% of the pedagogical advisors and inspectors were trained by the Project, which contributed substantially to the realization of the national training sessions by MENA.
- The Project developed all the lessons plans for science and mathematics of 6 grades in primary school level working together with national trainers and some collaborative teachers. MENA is in the process of the preparation for distributing the lesson plans to all the public primary schools, which is expected to contribute to further improvement in teachers' practice of ASEI-PDSI approach in class.
- The Project plan was reviewed in December 2013 to cope with the delay in activities produced by a change in INSET system. Adjustments were made to implement CEB based training sessions. After the adjustments, the Project have implemented planned activities, contributing to improvement in teachers' pedagogical practices in public primary schools, and is expected to achieve the Project Purpose. In the future, printing of science and mathematics teaching plan made by MENA will be expected to be

distributed to teachers.

**(3) Efficiency : High**

- The training sessions for directors and teachers with a two-stage cascade training system in the school year 2014-15 were conducted more efficiently than the prior training system that had used GAP. On this issue, positive comments were made by all the levels of stakeholders of the training, throughout the evaluation interviews.
- Implementation of training for directors and teachers was delayed mainly because of a change in INSET system, which reduced time for monitoring and evaluation on ASEI-PDSI implementation in class after training during the project period.
- Use of visual presentation materials produced by the Project efficiently contributed to better understanding on implementation of ASEI-PDSI approach in class rooms. The Project provided all the inspectors and pedagogical advisors with the DVD didactic materials with examples of ASEI-PDSI class and good practices, promoting its use in INSET. The digital didactic materials are also utilized in ENEP. The digital contents can be used even more widely and effectively, with the extension of IT technologies.
- The Project coordinated with the members of JOCV sent to public primary schools. They especially contributed to the Project collaborating in the development of didactic materials for the application of ASEI-PDSI approaches adapted to Burkinabe reality.
- For the output and outcome, experts (long-term, short-term) and equipments have been properly carried out in the required timing.

**(4) Impact : Medium**

- ASEI-PDSI approach promoted by the Project is included in the Guideline for Curriculum for Basic Education (COC) of March 2015 as one of the approaches that contribute to enrich Integrated Pedagogical Approach (API) for the reform of curriculum.
- ASEI-PDSI approach has begun to be introduced in the PRESET training in ENEP. For example, ENEP Loumbila implemented training for all the students in 2014/15.
- ASEI-PDSI approach will be introduced to training for candidates for school directors, pedagogic advisors and inspectors in ENS-UK in school year 2014- 2015.
- Many private primary schools' teachers voluntarily participated in the training sessions for directors and teachers, which was implemented by MENA in February 2015. Some private schools provided their teachers with allowance for the participation in the training session to promote their participation.
- MENA is examining the possibility of giving ASEI-PDSI training to trainers of private teacher training schools (EPFEP), since a part of teachers recruited for public schools are also graduates from EPFEP.
- In the endline survey in March 2015, achievement of the super goal will be expected by the result of Mathematics and Science which were improved.

**(5) Sustainability : High**

- PDSEB continues to be a long-term development policy for basic education of MENA. Curriculum reform is an important measure to improve quality in basic education in PDSEB. Sustainability in policy

aspect is assured, as ASEI-PDSI approach is adopted as one of the components of pedagogic ideas of API to reform curriculum.

- Continuation of training on ASEI-PDSI approach is assured by ENEPs in their implementation of PRESET. With their trainers trained by the Project and their own infrastructure, ENEPs can provide training for the approach efficiently and continuously, utilizing didactic materials developed by the Project.
- Implementation of the INSET by the framework of “training sessions” and “pedagogical conferences” will be influenced by the future financial conditions of Burkinabe government. DGEB is required to secure the budget for the implementation of the training.
- The national trainers trained by the Project own sufficient competence for offering training and indispensable capacity for monitoring / evaluation and providing supporting advices to teachers including those for the production of lesson plans. Meanwhile, inspectors, academic advisors and school directors still seem to have necessity of continuous support to monitor and advise teachers effectively in their implementation of the learner-centered approach in class room.

### **3-3. Factors promoting better sustainability and impact**

#### (1) Factors concerning Planning

- The Project successfully adjusted its operation plan to cope with the INSET system changes caused by the suspension of GAP activities. After the adjustment, the activities were implemented almost as planned by the Project.

#### (2) Factors concerning the Implementation Process

- MENA has high ownership of the Project and implemented a large-scale national training sessions on the learner-centered approach produced by the Project for public primary school directors and teachers in February 2015, although there were some delays in the implementation.
- The Project team and the national trainers contributed substantially to the active implementation of the project activities for the training, production of lesson plans and monitoring/evaluation.
- The Project offered training sessions and training materials to the ENEP instructors on ASEI-PDSI approach, which promoted the introduction of the approach in the PRESET of ENEP, contributing to the expansion and continuation of the execution of the training.

### **3-4. Factors inhibiting better sustainability and impact**

#### (1) Factors concerning Planning

- CEB system does not fully function for inspectors and pedagogic advisers to give pedagogic guidance to directors and teachers, and which made them difficult to guide teachers in the application of the learner-centered approach smoothly.

#### (2) Factors concerning the Implementation Process

- Time for monitoring and evaluation on ASEI-PDSI implementation in class was reduced and delayed, because of the delays produced in the implementation of directors’ and teachers’ training and in the distribution of the lesson plans by MENA.



### **3-5. Conclusion**

The Project is in the process of achieving its project purpose, having conducted training sessions for almost all the public primary school directors and teachers on the learner-centered approach and contributed the improvement of teachers' lesson practice by developing all the lesson plans in science and mathematics for the 6 grades of primary school based upon the approach.

Training developed by the Project has a tendency to extend to ENEP, ENS-UK, EPFEP and private primary schools, which is more than expected by the initial plan. Another important impact is that the learner-centered approach promoted by the Project was adopted in the Guideline for Curriculum for Basic Education of MENA, having influence on the revision of curriculum. The adoption of the approach in the curriculum reform guideline, together with the introduction of the training by ENEP, will contribute substantially to the sustainability of the approach. Although both the change of the INSET's policy and delays of the activities were occurred, the Project is expected to finish with the almost all the principal planned activities completed.

### **3-6. Recommendations**

(1) For the promotion of further implementation of learner-centered approach, MENA is expected to continue utilizing the experienced and capable human resources, such as national trainers, developed through the implementation of the Project.

(2) MENA is expected to distribute lesson plans to all the public primary schools and to publish them also on the web site of the Ministry to improve the availability of the documents.

(3) JICA is advised to conduct an ex-post evaluation of the effectiveness of the Project, measuring improvement on teachers' pedagogical practices and students' learning in the class with related to the learner-centered approach, 3 years after the end of the project period. Based upon the results of the ex-post evaluation, MENA is expected to take measures such as further improvements on the current Projects products, if necessary.

(4) For the purpose of creating a feasible and sustainable training mechanism, MENA is expected to explore effective training mechanisms, such as lesson studies, ITC (information, technology and communication) in education and distance education in the future.

### **3-7. Lessons Learned**

(1) JICA could have collaborated even more smoothly with the implementation of the Project, taking into account the training systems and the actual education situation more carefully at the preparatory stage.

(2) It is desirable to search for a more preferable cost sharing mechanisms, at the stage of the project planning, for a further smooth implementation of a project.

(3) The project by implementing a central educational policies such as improving the quality of education can maintain a high recipient governments ownership. Also, it is possible to contribute to the improvement of the classroom level by its practice.