Kingdom of Swaziland

FY2015 Ex-Post Evaluation of Japanese Grant Aid Project

"The Project for the Improvement of Secondary Education"

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0. Summary

The project aimed to improve the educational opportunities and environments in secondary education[1] in target areas by constructing new secondary schools in twelve rural areas in Swaziland. This was expected to contribute to reducing the disparity in secondary education between urban and rural areas as desired by the Swazi government.

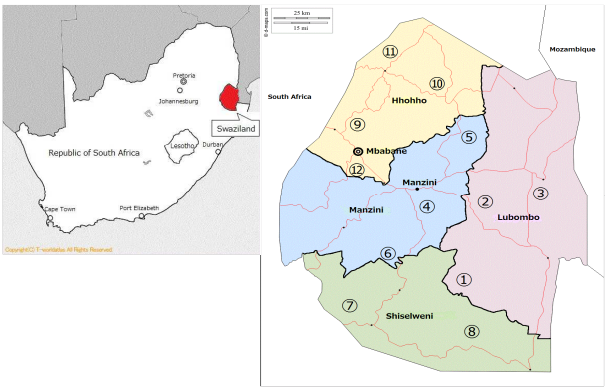
Swaziland has consistently focused on human resource development and has defined the importance of secondary education in its policy. However, the educational disparity between urban and rural areas has been a problem; at the same time, the number of secondary schools has been insufficient, while the number of students enrolled in secondary education has increased. Under such circumstances, the project's aim was consistent with Swaziland's development policy and needs. Thus, the relevance of the project implementation is high. The efficiency of this project is high, as both the project period and the costs were mostly as planned.

As a result of the project's implementation, the targeted areas' educational opportunities and environments have been improved. Although the project's contribution to reducing educational disparities between urban and rural areas has been limited because the target schools are small in proportion to all secondary schools in Swaziland, the project has contributed in terms of education quality in those target areas. Furthermore, according to the beneficiary survey, some positive changes have been observed, such as the positive changes in the perception that guardians/communities have towards secondary education. Therefore, the effectiveness as well as the impact of this project are high. Minor problems in terms of the financial aspects have been observed in respective schools; thus, the sustainability of the project's effect is fair.

In light of the above, this project is evaluated to be highly satisfactory.

[1] Primary and secondary education system in Swaziland are 7-3-2 system which designed as seven years of primary education (Grade 1-7), three years of junior secondary education (Form 1-3), and two years of senior secondary education (Form 4-5) (Preparatory Survey for the Education Programmes in the Kingdom of Lesotho and the Kingdom of Swaziland 2009). The schools constructed by the project are schools for both junior and senior secondary education, and they receive students from Form 1 to Form 5. Hence, "secondary education" in this report means both junior and senior secondary education.

1. Project Description



Project Locations[2]

Secondary School Constructed by the Project

1.1 Background[3]

In the "National Development Strategy (NDS): Vision 2022" (1997-2022) and the "Poverty Reduction Strategy" (2006), the government of Swaziland acknowledged that human resources are the primary resources in a small country with limited natural resources. Education for the development of human resources was positioned as the country's first priority in order to achieve economic growth and poverty reduction.

The Ministry of Education and Training (MOET) formulated the "Strategic Plan for the Education Sector 2010-2022" as the implementation strategy for the NDS. It aimed to improve the educational environment and laid out several goals, including: (i) to ensure a 100% progression rate from primary to secondary school by 2015, (ii) to ensure an appropriate distribution of schools to limit the walking commute distances to less than 5 km, (iii) to achieve a gross enrollment ratio (GER)[4] of 80% in secondary education by 2015 and 90% by 2022, and (iv) to promote an efficient curriculum[5].

Moreover, the lack of secondary education facilities and the existence of disparities in urban-rural educational opportunities were also confirmed in the findings of the "Preparatory Survey for the Education Programmes in the Kingdom of Lesotho and the Kingdom of Swaziland," which was conducted by JICA in March 2009. Therefore, the provision of equal educational opportunities was identified as an urgent issue.

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[2] The left image is a location map of Swaziland. The right is a location map of the project site (produced by evaluator based on http://d-maps.com/m/africa/swaziland/swaziland72.gif).
[3] Refer to the Preparatory Survey Report
[4] The number of children enrolled in a certain educational level, regardless of age, divided by the population of the age group that officially corresponds to that same level (UNICEF).
[5] The "Strategic Plan for the Education Sector 2010-2022" was still under government review at the time of the preparatory survey. At the time of ex-post evaluation, it was finalized as "Education Sector Strategic Plan 2010-2022" follows the same goals.

Under such circumstances, the Grant Aid project[6] to construct new secondary schools in twelve sites among four districts (LUBOMBO district: ① Mabhensane, ② Mabondvweni, ③ Nyetane; MANZINI district:④ Nhlambeni, ⑤ Mliba, ⑥ Mandulo; SHISELWENI district:⑦ Mlambo, ⑧ Mpakeni; HHOHHO district: ⑨ Hawane, ⑩ Dinani (Etfuntini),⑪ Sobokazana (Hhelehhele), and ⑫ Masibekela (Mantabeni)[7] was implemented.

1.2 Project Outline

The objective of this project is to improve the secondary educational opportunities and environments in the targeted areas by constructing new secondary educational facilities, thereby contributing to the reduction of the disparity in secondary education between urban and rural areas.

G/A Grant Amount / Actual Grant Amount	1,143 million yen / 1,143 million yen
Exchange of Notes Date (Grant Agreement Date)	March, 2011 / March, 2011
Implementing Agency	Ministry of Education and Training
Project Completion Date	March, 2013
Main Contractors	Contractors[8]: 【Lot 1 & 6】 WSL Construction (Pty), Ltd. 【Lot 2】 Afrotim Construction (Pty), Ltd. 【Lot 3】 Pado Construction (Pty), Ltd. 【Lot 4】 Wilmo Construction (Pty), Ltd. 【Lot 5】 Smith & Glendinning Swaziland Construction (Pty), Ltd. Furniture Supplier: Afritool (Pty), Ltd.
Procurement Agency	Japan International Cooperation System
Main Consultants	Fukunaga Architects-Engineers
Outline Design	February, 2010 - June, 2011

[6] This project was implemented by the "Grant Aid for Community Empowerment," which was one of the sub-schemes of the Japanese Grant Aid. This sub-scheme aimed to support a comprehensive capacity development of communities. It was implemented using local businesses, equipment, and materials based on local specifications and designs in order to reduce costs. The name of "Grant Aid for Community Empowerment" has not been used for the projects approved after March 2015 due to the discontinuance of the sub-schemes in April 2015 (refer to JICS Web site).

[7] After the completion of the project, three schools, which were constructed in the Etfuntini, Hhelehhele, Mantabeni sites, have been given school names of Dinani, Sobokazana, and Masibekela. This report uses the names of the schools instead of the sites' names.

[8] "Lot" represents the construction sites. Lot 1 represents Nhlambeni and Mliba, Lot 2 represents Mandulo and Mlambo, Lot 3 represents Mabhensane and Mpakeni, Lot 4 represents Mabondvweni and Nyetane, Lot 5 represents Dinani and Sobokazana, and Lot 6 represents Hawane and Masibekela.

Related Projects	【Technical Advisor】 Teacher education specialist in science and mathematics (incl. ICT) (31 January 2012-25 December 2012) Advisor for In-service teacher training for science in secondary education (April 2016-December 2017) 【Grant Aid for Grassroots Human Security Projects】 Support for the construction of classrooms in primary schools (25 projects) (2001-2013) 【Senior Volunteer】 Senior Volunteer ICT (July 2012-June 2013; April 2014-February 2015, December 2015-Present) 【Other Organizations】 European Union (EU): Support for education and training programs (2008-2010) United Nations Children's Fund (UNICEF): Support for free primary education (2009-2010)

2. Outline of the Evaluation Study

2.1 External Evaluator

Chiho Ikeda, Foundation for Advanced Studies on International Development

2.2 Duration of Evaluation Study

Duration of the Study: August, 2015 – July, 2016

Duration of the Field Study: November 2, 2015 – November 17, 2015

February 15, 2016 – February 17, 2016

3. Results of the Evaluation (Overall Rating: A[9])

3.1 Relevance (Rating: ③[10])

3.1.1 Relevance to the Development Plan of Swaziland

The government of Swaziland acknowledged in the "National Development Strategy (NDS): Vision 2022" and in the "Poverty Reduction Strategy and Action Program" that human resources were the primary resources in the country and education for the development of human resources was crucial. Furthermore, an improvement in the enrollment rate and in the

[9] A: Highly satisfactory, B: Satisfactory, C: Partially satisfactory, D: Unsatisfactory
[10] ③ High, ② Fair, ① Low

educational environment of secondary education had been aimed for in the "National Education Policy 1999" as well as in the "Strategic Plan for Education Sector 2010-2022."

The NDS that was reviewed in 2014 mentioned that human resource development was one of the seven macro strategic areas, and that providing practical secondary education of every child was important. In addition, "The Swaziland Education and Training Sector Policy," which was released as the substitute policy of the "National Education Policy 1999" and the final version of the "Education Sector Strategic Plan 2010-2022" had set the goal for improving the educational opportunities and quality of secondary education.

Therefore, the project has been relevant to Swaziland's development policy.

3.1.2 Relevance to the Development Needs of Swaziland

At the time of planning, the number of students enrolled in secondary education had been increasing since 2004, with an increase in the number of students enrolled in primary education. Moreover, the number of students enrolled in secondary education was expected to continue increasing in the future, due to the free primary education started in 2010. On the other hand, the number of secondary schools was insufficient[11]; therefore, the construction of new secondary educational facilities was an urgent issue.

At the time of ex-post evaluation, there is still a large shortage of secondary schools, although the number of secondary schools has increased every year (refer to Table 1).

Furthermore, the educational disparity between urban and rural areas is a challenging issue in Swaziland. The net enrollment ratios[12] (NER) of junior secondary schools in the Lubombo and Shiselweni districts are low compared to that of the Hhohho district, which has the capital city Mbabane, and compared to the Manzini district, which has the economic center city Manzini. This means that educational opportunities in secondary schools for children in rural areas are limited compared to that for children in urban areas (refer to Table 2).

Table 1: Number of Students Enrolled / School in Primary and Secondary (Junior/Senior)

		2009	2010	2011	2012	2013
Number of Students Enrolled	Primary	231,066	241,231	239,124	239,322	239,019
	Secondary	86,534	89,838	80,950	90,573	93,065
Number of Schools	Primary	565	595	603	613	619
	Secondary	216	238	250	255	273

Source: Document provided by JICA, MOET's questionnaire response, and Annual Education Census Report 2013

[11] Refer to the Ex-ante evaluation

[12] The number of children enrolled in a certain level of education in school who belong to the age group that officially corresponds to schooling, divided by the total population of that same age group (UNICEF).

Table 2: Net Enrolment Rate of Junior Secondary per District

(Unit: %)

	2010	2011	2012	2013
Hhohho District	29.0	30.8	30.1	31.1
Manzini District	37.8	37.1	30.3	41.7
Shiselweni District	26.5	24.9	23.1	25.2
Lubombo District	14.9	17.9	23.3	15.9

Source: Annual Education Census Report 2013

Thus, the need for secondary educational facilities in rural areas, including rural schools in Shiselweni and Lubombo, continues to be high.

3.1.3 Relevance to Japan's ODA Policy

At the TICAD IV in 2008, Japan developed the action plan to construct 1,000 primary and secondary schools (approximately 5,500 classrooms) in Africa by 2012 as support for expanding access and quality in basic education[13]. Furthermore, Japan had a basic policy to support the self-help efforts of Swaziland that aimed to reduce poverty, and support for basic human needs was set as a priority issue[14]. Thus, this project was consistent with Japan's ODA policy at the time of planning.

As stated above, this project has been highly relevant to the country's development plan and development needs as well as to Japan's ODA policy. Therefore, its relevance is high.

3.2 Efficiency (Rating: ③)

3.2.1 Project Outputs

In this project, a new secondary school was constructed in twelve rural areas, and chairs and desks for students and teachers were also procured. Both facilities and furniture were constructed and procured as planned.

By using the remaining balance produced by a high exchange rate for Japanese yen, one additional student toilet building for each school was constructed in order to sufficiently ensure student privacy by separating boys' and girls' toilets[15].

Additionally, 24 elevated water tanks (2 for each of the 12 schools) and 48 rain water tanks (4 for each school) were given to each school in order to secure the water reserve capacity for the time when the water supply is stopped. Furthermore, desks and chairs for multipurpose rooms and administration buildings were procured for the effective use of the facilities with

[13] Refer to the TICAD IV Yokohama Action Plan 2008
[14] Japan's ODA Data Book 2010
[15] Although students' toilets were planned in constructing one building with both boys' and girls' booths, its design considered student privacy by separating the boys' and girls' entrances. (Interview with main consultant)

utilizing the remaining balance (refer to Tables 3 and 4).

Table 3: Planned and Actual Output for the Construction of Facilities

Facility	Planning	Actual
Classroom	29 buildings （97 classrooms: 4 classrooms×10 buildings, 3 classrooms×19 buildings）	As planned
Science Laboratory	12 buildings（1 building×12 sites）	
Multipurpose Room A[16]	12 buildings（1 building×12 sites）	
Multipurpose Room B[17]	12 buildings（1 building×12 sites）	
Administration Block	12 buildings（1 building×12 sites）	
Teachers' Housing	24 buildings（48 houses: 2 buildings（4 houses）×12 sites）	
Students' Toilet	12 buildings（1 building×12 sites）	24 buildings（2 buildings×12 sites）
Water Tank	12 tanks（1 tank×12 sites）	As planned
Elevated Water Tank	Not planned	24 tanks（2 tanks×12 sites）
Rain Water Tank	Not planned	48 tanks（4 tanks×12 sites）

Source: Ex-ante evaluation and Document provided by JICA

Table 4: Planned and Actual Output for the Procured Furniture

Facility	Planning	Actual
Classroom	Students' desks: 3,880, Students' chairs: 3,880 Teachers' desks: 97, Teachers' chairs: 97	As planned
Science Laboratory	Students' tables (for eight): 60 Students' chairs: 480 Teachers' laboratory tables: 12 Teachers' chairs: 24	
Multipurpose Room A	Not planned	Students' desks: 480 Students' chairs: 480
Multipurpose Room B	Not planned	Students' chairs: 480
Administration Block	Not planned	Teachers' desks: 36 Teachers' chairs: 258

Source: Ex-ante evaluation and Document provided by JICA

In addition to the output above from the Japanese side, the installation of facilities, such as school fences and gates, as well as the procurement of school equipment used in the science

[16] At the time of planning, multipurpose room A was expected to be utilized for the subject of home economics or for the agriculture laboratory and school kitchen. At the time of ex-post evaluation, multipurpose room A was being utilized as a home economics room in all the schools.

[17] At the time of planning, multipurpose room B was expected to be utilized for an ICT practical room or for a practical subject. At the time of ex-post evaluation, multipurpose room B was being utilized as an ICT practical room in all the schools.

laboratory and multipurpose rooms, were done by the Swaziland side[18].

3.2.2 Project Inputs

3.2.2.1 Project Cost

The actual project cost of the Japanese side was 1,143 million yen, which is the same as planned[19]. As mentioned above, the remaining balance due to the strong Japanese yen was used for additional construction of facilities and procurement of furniture. In addition to that, the remaining balance was also used as a reimbursement[20] for the costs covered by the Swaziland side, such as that for the installation of water wells, school fences, and gates.

The actual project cost of the Swaziland side exceeded the plan; while the planned cost was 81 million yen (6,031,999 emalangeni), the actual cost was 110 million yen (8,252,080.36 emalangeni), which constitutes 136% of the planned cost[21]. The actual cost exceeded the planned cost because the actual cost of equipment for the science laboratory and multipurpose rooms was higher than planned. As for the reason, it has been considered that the purpose of the multipurpose rooms was not clear at the time of planning[22]. Considering the fact that there was an agreement that any additional cost exceeding the planned cost would be covered by the Swaziland side— as only the minimum cost required for implementing the curriculum was estimated in the plan—the efficiency of the project cost was examined by a comparison of the planned cost and the actual cost of Japanese side only.

3.2.2.2 Project Period

The project was started a month early in order to receive students in January 2013, as the school term of Swaziland begins in January. The project period was mostly as planned[23]. While the planned period was 20.5 months (from August 2011 to the middle of April 2013), the actual

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[18] Computers were provided by Taiwan, and 443 computers (34-40 for each school) were installed in 12 schools in total. Although furniture for multipurpose rooms was planned to be procured by the Swaziland side, it was procured by the Japanese side using the remaining balance due to the strong Japanese yen.

[19] The cost efficiency of the project was examined by a comparison of the planned cost and the actual cost. In the case of the grant aid project involving the procurement agency, the planned amount, after details in the design survey, is acknowledged as planned amount, and the amount agreed by the exchange note, including the agent fee, is acknowledged as actual amount (document provide by JICA).

[20] "Reimbursement" is a method wherein the same amount that the partner country paid is reimbursed by the donor organization after the project's completion. (Refer to official document by JICA) In this project, approximately 10 million Japanese yen (795,427.92 emalangeni) was reimbursed to Swaziland under the condition that the total remaining amount in the account was less than three percent of the total amount of the Grant and its accrued interest excluding the procurement agent fee. (Document provided by JICA)

[21] Both planned and actual cost were calculated with the exchange rate used in the detailed design, namely 1 lilangeni = 13.45 yen, the average exchange rate for six months (from 1 November, 2010 to 30 April, 2011). The interior work for the multipurpose rooms and the administration building, which costed approximately 99 million yen (7,357,431.89 emalangeni), was also done by the Swaziland side. However, it was not included in the actual cost for the comparison, because this cost was not estimated in the plan.

[22] The evidence for the planned cost estimation was not obtained.

[23] The starting point of the period, both for the actual period and the planned period, was set on the date of drafting the tendering document.

period was 20.6 months (from 21 June 2011 to 7 March 2013[24]).

As stated above, the project cost on the Japanese side was as planned, and the project period was mostly as planned. Therefore, the efficiency of the project is high.

3.3 Effectiveness[25] (Rating: ③)

This project was implemented aiming at the improvement of secondary educational opportunities and environments in the targeted rural areas. To measure the project's effectiveness in terms of improving educational opportunities, the "number of students enrolled in target schools," which was set as a quantitative indicator during planning, and the "number of students who have been enabled to enter a nearby secondary school to their residence" were collected as quantitative indicators in the ex-post evaluation survey.

Regarding the indicators for measuring the project's effect in terms of enhancing the educational environment, the "number of teachers allocated to the target schools" and the "utilization of school facilities" were analyzed as quantitative indicators. The "satisfaction of users" and "improving students' commuting environments by decreasing their commuting distances and times" were analyzed as qualitative indicators.

3.3.1 Quantitative Effects (Operation and Effect Indicators)

(1) Number of Students Enrolled in Target Schools

As shown in Table 5, more students enrolled in the target schools than expected, although the number differed among the respective schools. According to the interviews and questionnaires with the target schools, it was revealed that the need for secondary education in the target areas was high, particularly in Mabhensane and Mabondvweni, due to the fact that there were either no secondary schools in those areas, or the nearest secondary school was very far from the target areas. At the same time, many students have been transferred to the target schools, particularly to Nyetane and Mliba, from other secondary schools. A lot of students have been transferred to the target schools because some students, who had to commute far for secondary school, preferred to go to a school closer to their residence. The new home economics room and ICT laboratory, with sufficient facilities and equipment, are also reasons for the increasing number of students, as they are attractive for students in other schools as well as for new applicants to secondary school.

On the other hand, some target schools received a smaller number of enrolled students. For

[24] Although the schools were handed over to the government of Swaziland in January 2013, the same time of establishing the schools, some work remained in some sites. Thus, the completion date of the project was set on the date that those remaining works were completed.
[25] Sub-rating for effectiveness is to be put with consideration of impact.

instance, Mlambo received fewer students than expected due to expensive school fees in the first year[26]. In the case of Hawane, guardians who have enough financial resources tended to enroll their children in urban secondary schools, where the results of the Junior Certificate (JC) exam and the Swaziland General Certificate of Secondary Education (SGCSE) exam[27] have been good; Hawane is located approximately 15-20 minutes (driving) from the capital city of Mbabane[28].

Table 5: Number of Students Enrolled in Target Schools

Indicator	Baseline	Target	Actual
	2010	2015	2015
	Baseline Year	2 Years After Completion	2 Years After Completion
Number of Students Enrolled in Target Schools	0	2,708	2,961

Source: Preparatory Survey Report and Target school's questionnaire responses

【Per schools】

School	Target (2015)	Actual (2015)	Difference from Target Number	Percentage for Target Number
Mabhensane	168	280	112	167%
Mabondvweni	182	258	76	142%
Nyetane	171	300	129	175%
Nhlambeni	228	210	▲18	92%
Mliba	223	392	169	176%
Mandulo	265	244	▲21	92%
Mlambo	291	198	▲93	68%
Mpakeni	245	238	▲7	97%
Hawane	261	183	▲78	70%
Dinani (Etfuntini)	250	265	15	106%
Sobokazana (Hhelehhele)	192	182	▲10	95%
Masibekela (Mantabeni)	232	211	▲21	91%
Total	**2,708**	**2,961**	**253**	**109%**

Source: Preparatory Survey Report and Target school's questionnaire responses

[26] For the first year of school commencement, Mlambo set a high school fee, which was 4,335 emalangeni per student for Form 1, 2, 3, and 5, and 4,660 emalangeni for Form 4. As a result, more than half of the applicants among over 100 applicants in the first instance, cancelled their application. The following year, more students enrolled due to the decrease in the school fee caused by an investigation into neighboring schools' fees, which was 2,535 emalangeni per student for Form 1, 2, 3, and 5, and 2,885 emalangeni for Form 4.

[27] The JC exam is an external exam for Form 3, the last year of junior secondary education. Only students who pass the JC exam can proceed to senior secondary education. In the same way, the SGCSE exam is an external exam for Form 5, the last year of senior secondary education. The students who pass that exam can proceed to higher education, such as university, college, or vocational training school, depending on their passing grade.

[28] It is considered that people living around the Hawane area are richer than those in other rural areas, as many of them work in Mbabane; the ratio of OVC students is lower than that of other target schools. Thus, those people tend to send their children to urban secondary schools, which have high pass rates on the exams. However, the number of students in Hawane schools has increased due to sufficient results on the JC exam in 2014: a passing rate of 94.12% (interview with head teacher in the Hawane School; result of JC exam; questionnaire).

As mentioned above, the total number of students enrolled in the target schools was 2,961 at the time of ex-post evaluation (2015). This number includes the number of transferred students from other secondary schools. According to the students' group interviews[29], it was concluded that the children in the target areas would have had to go to distant secondary schools if the project had not constructed the target schools, as most of their elder siblings went to distant secondary schools before the project. To calculate the number of students who were able to enter the secondary schools constructed by the project implementation, the number of "transferred students of all respective Forms"[30] in each school was examined; that number was deducted from the total number of enrolled students in 2015. The total number of transferred students in the target schools was 439[31]. Therefore, it can be surmised that the number of students who were enabled to enter a nearby secondary school owing to the project was 2,522.

(2) Number of Teachers Allocated in Target Schools

The project was intended to promote the allocation of teachers to rural areas by constructing 48 teacher housing units, which can accommodate 84 teachers in total. At the time of ex-post evaluation (2015), 222 teachers were allocated in total to the target schools. Also, the number of teachers at each school exceeded the target figures, except Hawane, as is shown in Table 6. Among them, 83 teachers utilize the teacher housing, which is nearly at capacity. According to the interviews with the head teachers in the target schools, there are no teachers from their areas. Teachers who cannot be accommodated with housing commute to school by car or public transport, or rent a house near their school.

Therefore, it can be considered that 222 teachers have been allocated to the target schools.

Table 6: Number of Teachers Allocated to the Target Schools

Indicator	Baseline	Target	Actual
	2010	2015	2015
	Baseline Year	2 Years After Completion	2 Years After Completion
Number of Teachers Allocated to the Target Schools	0	No setting (estimated number 186)	222

Source: Preparatory Survey Report and Target school's questionnaire responses

[29] Sample size and the number of respondents was 264 (Mabhensane 20, Mabondvweni 17, Nyetane 25, Nhlambeni 20, Mliba 20, Mandulo 20, Mlambo 20, Mpakeni 22, Hawane 26, Dinani 24, Sobokazana 25, Masibekela 25). Classes and students were designated by respective schools.

[30] "Transferred students of respective Forms" are the students who transferred from other secondary schools and had not enrolled in the target schools from Form 1 for the purpose of starting secondary education in the target schools.

[31] This number was calculated excluding the transferred students in Mabondvweni (all Forms), Nyetane (Form 1), and Mlambo (Form 1), because that data were not obtained.

【Per schools】

School	Target (2015)	Actual (2015)	Difference from Target Number	Percentage for Target Number
Mabhensane	14	19	5	136%
Mabondvweni	14	18	4	129%
Nyetane	14	25	11	179%
Nhlambeni	15	17	2	113%
Mliba	15	19	4	127%
Mandulo	17	19	2	112%
Mlambo	17	18	1	106%
Mpakeni	17	18	1	106%
Hawane	17	15	▲2	88%
Dinani (Etfuntini)	17	20	3	118%
Sobokazana (Hhelehhele)	14	15	1	107%
Masibekela (Mantabeni)	15	19	4	127%
Total	**186**	**222**	**36**	**119%**

Source: Preparatory Survey Report and Target school's questionnaire responses

(3) Utilization of School Facilities

The utilization of the school facilities is shown in Table 7. Facilities are being utilized effectively in the respective schools, except for students' toilets in Mliba and Nhlambeni[32]. Some students' toilets in Nhlambeni have not been utilized due to the key being lost.

Students' toilets in Mliba have not been utilized, and new toilets were constructed within the premise after the project's completion. According to the head teacher, the reasons for not using the toilets constructed by the project are: "It is close to the school entrance" as well as "It affects well water because water level is high during the rainy season"[33].

Furniture was properly installed in the respective rooms. Additionally, the procured elevated water tanks and rain water tanks have being utilized effectively, especially during the dry season and in the areas of low water supply.

[32] Nhlambeni, Hawane, and Mandulo use vacant classrooms as their library, store room, or secretary office because of the smaller number of enrolled students than expected. Since Mliba constructed a new structure of classrooms due to their overcapacity of students, they use a vacant classroom as a library. According to the head teacher, the toilet key for Nhlambeni will be replaced.

[33] The students' toilets were planned to be constructed away from the school entrance. However, after excavating, it was discovered that groundwater level was high during the rainy season, and the decision was to replace the current location that is close to the school entrance, with the assistance of MOET. Although MOET has tried to fix the problem by carrying out additional water proofing work in order to prevent the impact during the rainy season, even now the big problem for Mliba is the location of the toilets. According to the head teacher, these toilets will be renovated and utilized as a storage facility because Mliba had already constructed other students' toilets in their premises.

Table 7: Utilization of School Facilities

Facility	Plan (2010)	Actual (2015)	Status
Classroom	97 rooms	97 rooms (6 classrooms used for other purposes)	Classroom: 91 (all schools) Library: 2 (Nhlambeni), 1 (Mliba) Store: 1 (Mandulo), 1 (Hawane) Secretary room: 1 (Mandulo)
Science Laboratory	12 rooms	12 rooms	Average number of classes per week is 34
Multipurpose Room A	12 rooms	12 rooms	Used as home and economic room Average number of classes per week is 24
Multipurpose Room B	12 rooms	12 rooms	Used as ICT laboratory Average number of classes per week is 20
Administration Building	12 buildings	12 buildings	Installed head teacher's room and staff room
Teachers' Housing	48 units (Estimated number of users: 84 teachers)	48 units (Actual number of users: 83 teachers)	All units are utilized Occupancy rate: 91.7% (2013), 97.6% (2014), and 98.8% (2015)
Student toilet (male)	12 buildings (97 booths)	11 buildings (87 booths)	Unusable: 1 building (8 booths) (Mliba) Loss of key: 2 booths (Nhlambeni)
Student toilet (female)	12 buildings (97 booths)	11 buildings (88 booths)	Unusable: 1 building (8 booths) (Mliba) Loss of key: 1 booth (Nhlambeni)

Source: Preparatory Survey Report and Target school's questionnaire responses

3.3.2 Qualitative Effects

(1) Improvement of Educational Environment (user's satisfaction with facilities)

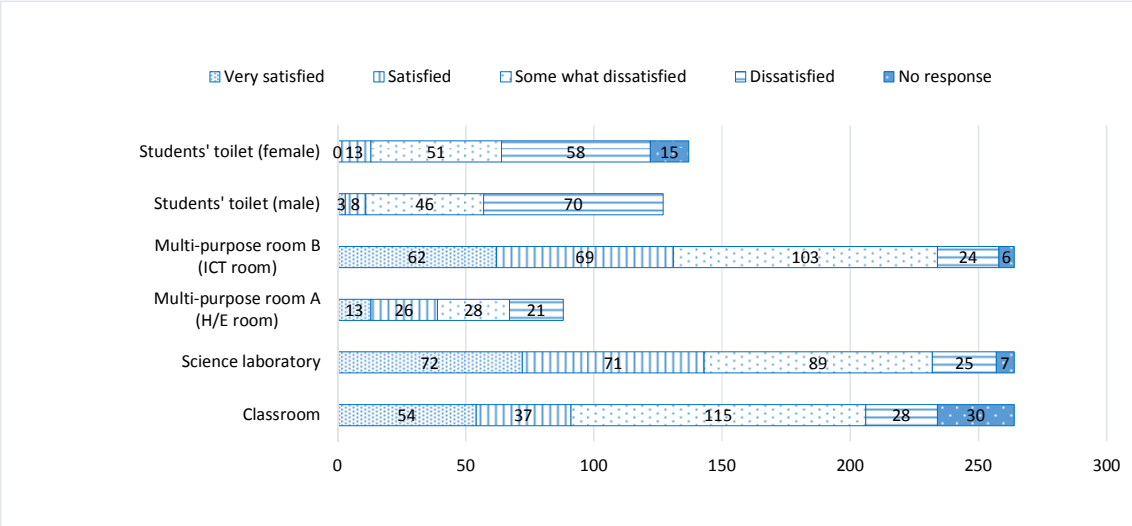
As mentioned above, it can be said that the educational environment in the target areas was improved by the project in terms of a quantitative aspect, as almost all of the facilities were utilized for their planned purposes. To measure the project's effect from a qualitative perspective, a user satisfaction survey was administered to the students (the number of valid responses was 264[34]) and teachers (the number of valid responses was 111[35]) of the target schools. The results of the survey are shown in Figure 1, Figure 2, and Table 8.

Although the satisfaction level of the students and teachers was not very high, they indicated that the educational environment had been improved by the project, as they are currently able to perform their necessary practical work—the reason for "very satisfied and satisfied." On the other hand, the reason for "somewhat dissatisfied and dissatisfied" involved insufficient classrooms and teachers' housing units due to a larger number of students and

[34] The sample size is the same as footnote No. 29.

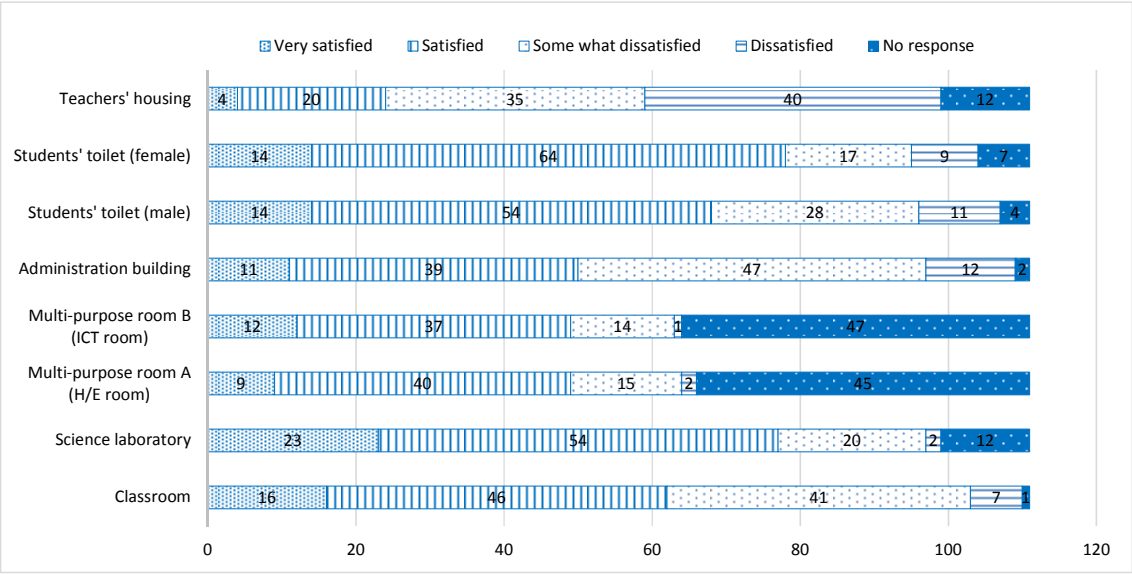
[35] The sample size and the number of respondents were 111 (Mabhensane 9, Mabondvweni 10, Nyetane 8, Nhlambeni 11, Mliba 10, Mandulo 9, Mlambo 10, Mpakeni 9, Hawane 7, Dinani 9, Sobokazana 10, and Masibekela 9). Teachers were designated by respective schools.

teachers than was estimated. Other reasons involved complaints about facilities caused by inappropriate daily use, and the seeking of better educational environments. Therefore, it can be considered that users thought the educational environment had been improved by the project; meanwhile, they desire more complete school facilities.



Source: Beneficiary survey (students' group interviews)

Figure 1: Student Satisfaction with Facilities[36]



Source: Beneficiary survey (questionnaire with teachers)

Figure 2: Teacher Satisfaction with Facilities[37]

[36] The number of respondents to questions about satisfaction with multipurpose room A (home economics room) and the students' toilets were fewer because the question was asked only to the students who use those facilities.

[37] There are two reasons that many respondents did not respond to questions about the satisfaction with multipurpose rooms A and B. One reason was that they could not recognize the purpose of the multipurpose rooms: A is for home economics, and B is an ICT room because this was not mentioned in the questionnaire. Another reason was that

Table 8: Major Reasons of Responses

Facility	Respondent	Reasons for "Very satisfied; Satisfied"	Reasons for "Somewhat dissatisfied; Dissatisfied"
Classroom	Students	・Sufficient number and space of classroom ・ Kept clean	・Insufficient number of classrooms compared to the number of students ・No shelf for books and school bags
	Teachers	・Educational tools, such as chalkboard, desk, and chair, are available ・Latest structure	・Insufficient number / space of classrooms compared to number of students ・Floor is damaged (hole on the floor) ・Bad ventilation
Science Laboratory	Students	・Sufficient space ・Experimental tools are available	・Insufficient number of classrooms compared to number of students ・Respective laboratory for junior and senior students is needed ・Insufficient experimental tools
	Teachers	・Good design ・Latest experimental tools are available ・Kept clean	・Drawer is broken
Multipurpose Room A (H/E room)	Students	・Sufficient space ・Practical equipment is available ・Separated from classroom	・Insufficient space compared to number of students ・Respective rooms for junior and senior students are needed ・Insufficient number of equipment
	Teachers	・Kept clean ・Good educational environment	・Insufficient space compared to number of students ・Separate room for fashion and fabrics is needed
Multipurpose Room B (ICT room)	Students	・Sufficient number of computers ・Equipment such as a printer and projector are available ・Air conditioner is available	・Insufficient number of computers ・Projector is not available ・Not connected to the Internet
	Teachers	・Good teaching environment ・Educational equipment is available	・Insufficient space compared to number of students ・Bad ventilation
Student Toilet (Male)	Students	・Sufficient number of booths ・Private booth is available	・Urinal is needed ・Emits bad smell ・Flush toilet is needed
	Teachers	・Sufficient number of booths ・Private booth is available ・Good location ・Standard design ・Kept clean ・Easy to maintain	・Insufficient number of booths compared to number of students ・Flush toilet is needed ・Urinal is needed ・Not maintained in a hygienic manner ・Some doors are broken ・Located close to the kitchen
Student Toilet (Female)	Students	・Sufficient number of booths ・Private booth is available	・Emits bad smell ・Some doors are broken ・Close to classrooms ・Distant to hand washing area
	Teachers	・Sufficient number of booths ・Private booth is available ・Good location	・Insufficient number of booths compared to number of students ・Inappropriate location (close to male

teachers who do not teach science, home economics,or ICT do not use those rooms.

		・Standard design ・Kept clean ・Easy to maintain	toilet) ・Flush toilet is needed ・Not maintained in a hygienic manner ・Some doors are broken
Administration Building	Teachers	・Furniture is available	・Insufficient number / space compared to number of teachers ・No storage room
Teachers' Housing	Teachers	・Good design ・Furniture is available ・Modern structure	・Insufficient number compared to number of teachers ・Need to share room with two families ・Some furniture is broken ・Bad ventilation

Source: Beneficiary survey

In the three years since the project's completion, respective schools have constructed new facilities, such as an agriculture laboratory, poultry house, new classroom structure, and school hall, via the school fees and a grant from the micro-project program[38]. Educational equipment, such as a projector, photocopier, and printer, has been purchased through school fees. Internet connection in the ICT laboratory is available in six of the twelve target schools[39].

(2) Improving Students' Commuting Environments by Decreasing their Commuting Distances and Times

The secondary schools constructed by the project, except Masibekela, were in rural areas where there were no secondary schools within walking distance (within 10 km) (3 schools) or there was a long commute (over 5 km) (8 schools) to the nearest secondary school. Thus, the project was expected to reduce students' commuting distance/time[40]. As stated above, it is considered that 2,522 students have been enabled to enroll in nearby secondary schools by the project. Thus, the commuting environment of the children in the target area has been improved by reducing their commuting distance/time.

[38] The micro-project program supports the project, which is a community-based, small-sized, self-help development effort. It is operated by the Microprojects Programme Coordinating Unit (MPCU), a semi-independent unit of the Ministry of Economic Planning and Development. A community can apply to the micro-project program under the condition that more than 25% of the project's costs is borne by the community. The micro-projects program grants the remaining balance up to 75% of the investment cost for an approved project (refer to http://www.microprojects.co.sz/). According to the interview with MOET, MOET also supports the project cost recently. In case construction is stopped due to the failure of the project cost covered by the communities/schools, MOET covers the remaining project cost for communities/schools, and requests MPCU to complete the construction.
[39] JICA dispatched the senior volunteer of ICT to Swaziland twice; the first period was from July 2012 to June 2013, and the second period was from April 2014 to February 2015. He supported the network building of secondary schools in Swaziland, including the target schools.
[40] Before the implementation of the project, the commuting distance to the nearest secondary school was approximately 5.5-12 km. The activity designed and implemented a catchment area policy that will allow students to have a school within 5 km walking distance of their home, which is stated as one of the activities for securing 100% progression from primary to junior secondary education in the Strategic Plan for the Education Sector, both at the time of planning and ex-post evaluation. Although the Masibekela area had a secondary school within 5 km, it was selected as one of the target sites because of the high demand for a secondary school due to the overcrowded classrooms in the secondary school at the area.

In addition, given the results of the student's group interviews[41] as shown in Table 9, it is supposed that most of the students have been able to go to a secondary school within one hour (walking distance) after they enrolled in the target schools, otherwise, they had to take a long time to get to secondary school because there were no secondary schools within walking distance.

Table 9: Commuting Means and Times for Students in Target Schools

Means of transportation	Number of Respondents	Commuting time			
		Less than 30 minutes	Less than 1 hour	Over 1 hour	Over 2 hours
On Foot	217	86	83	43	5
By Bus	28	11	14	3	0
By Guardian's Car	3	2	1	0	0
Combination of Foot and Bus	16	4	9	3	0
Total	264	103	107	49	5
Percentage	100%	39%	40%	19%	2%
Percentage of "on foot"	*82%*	*33%*	*31%*	*16%*	*2%*

Source: Students' group interviews

Furthermore, according to the questionnaire survey to teachers[42], approximately 95% (105 teachers) responded that the educational opportunity of secondary education in their rural areas had been improved. Concerning the reason for this improvement, approximately 62% (65 teachers) among them mentioned the reduction of commuting distance/time by the project.

Guardians also brought up the following issues as a good result of the reduction of their children's commuting distance/time in their group interviews[43]; "Children were exhausted by commuting long distance to school before the project but it was improved by the project."(Nyetane), "Before the project, guardians were worried that their children were forced to come home in the dark during the winter but now they don't need to worry about that because of the project" (Mabhensane), "Children are able to go to school even in rainy season now."(Mandulo, Mabondvweni)

3.4 Impacts

3.4.1 Intended Impacts

As stated, the project was expected to contribute to the reduction of the disparity in secondary education in terms of educational opportunities and quality between urban and rural areas.

[41] The sample size was the same as in footnote No. 29. The commuting distance before the project set the distance to the nearest secondary school from the target areas, as it is presumed that most of the students enrolled in the target schools are Form 1 because all schools were newly constructed.
[42] Sample size is the same as footnote No.35.
[43] Sample size is 35. (Mabhensane 2, Mabondvweni 14, Nyetane 7, Mandulo 12) Some of them are the member of school committee and were designated by the head teachers in respective schools.

To see the project's contribution to the reduction of the disparity in secondary education between urban and rural areas, "disparity in secondary education" was analyzed in both quantitative and qualitative aspects, which were "disparity in educational opportunities" (quantitative aspect) and "disparity in quality of education" (qualitative aspect). Since the figure of the number of students enrolled in secondary schools after 2013 was not officially available, for the analysis, the former was examined by the number of JC exam applicants[44], and the latter was examined by a ratio of the successful applicants of the JC exam and those with "Grade C and above[45]" on the SGCSE; these figures were available on the Examinations Council of Swaziland (ECOS)[46] Web site[47].

(1) Contribution to the Reduction of the Disparity in Educational Opportunities

Table 10 shows the changes in the number of JC exam applicants in urban and rural areas. The number of JC exam applicants has not increased in proportion to the increase in secondary schools and enrolled students, as the ratios of repeater and drop-out students are high in Form 1 and Form 2[48]. The percentage of target schools among the number of JC exam applicants in rural areas was 2.3% (2014) and 5.0 % (2015).

Table 10: Number of JC Exam Applicants in Urban and Rural Areas

	2010	2011	2012	2013	2014	2015
Urban *(Changes from previous year)*	3,671 *(-)*	3,633 *(▲38)*	3,685 *(52)*	3,657 *(▲28)*	3,475 *(▲182)*	3,888 *(413)*
Rural *(Changes from previous year)*	10,086 *(-)*	9,382 *(▲704)*	8,946 *(▲436)*	9,665 *(719)*	9,286 *(▲379)*	10,210 *(924)*
Number of Applicants in Target Schools among Rural Areas *(Changes from previous year)*	- -	- -	- -	- -	216 *(-)*	513 *(297)*
Percentage of target schools among the number of JC exam applicants in rural areas	-	-	-	-	*2.3%*	*5.0%*

Source: Analysis from the ECOS data

Note: Students in 3 of the 12 target schools did not take the JC exam because those three schools did not have Form 3 students in 2014, as they had accepted Form 1 (starting year of junior high school) and Form 4 (starting year of senior high school) when opening the school in 2013. In 2015, students in all 12 target schools took the JC exam.

[44] The number of SGCSE applicants were not examined because it was difficult to obtain the total number of applicants as the number of applicants was only available per subject.

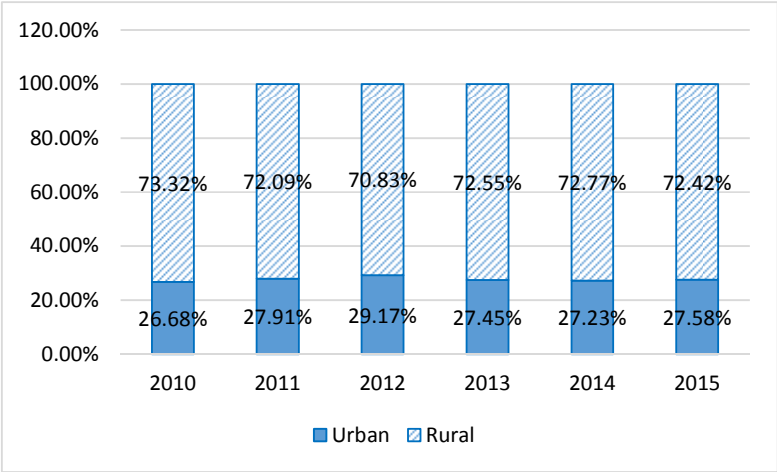
[45] According to the data available on the ECOS Web site, the grade of the SGCSE exam is indicated as A*-X (grade A* is the highest). The ratio of "Grade C and above" is also calculated on the Web site. Therefore, "Grade C and above" means "higher grade."

[46] ECOS is a "quasi-government organization" established in 1981. They have the mandate to administer examinations and issue certificates to primary, junior secondary, and senior secondary school graduates (ECOS Web site).

[47] The classification of urban and rural schools were based on the "School List 2011" (MOET) and the hearing to ECOS. Peri-urban schools were classified as urban. The schools that cannot be classified were excluded from the analysis.

[48] Though the data in 2014 has not yet been published, the repeat rate and drop-out rate of Form 1 and Form 2 have been high. According to the Annual Education Census Report 2013, the repeat rate in 2013 was: Form 1: 12.3 % (Female), 14.2 % (Male); Form 2: 14.6 % (Female), 17.5 % (Male). The drop-out rate in 2013 was: Form 1: 4.1 % (Female), 3.7 % (Male); Form 2: 4.5 % (Female), 3.7 % (Male).

As shown in Figure 3, the percentage of the number of JC exam applicants has not changed dramatically over the period of 2010 to 2015. Therefore, the project's contribution to the reduction of disparity in terms of the number of JC exam applicants between urban and rural areas has not been seen at the time of ex-post evaluation; although it can be said that the project somewhat contributed to the increased number of JC exam applicant in rural areas.



Source: Analysis from the ECOS data

Figure 3: Ratio of the Number of JC Exam Applicants in Urban and Rural Areas

(2) Contribution to the Reduction of the Disparity in Educational Quality

- Ratio of successful applicants in JC exam

Regarding the project's contribution to the reduction in the disparity of educational quality, the "difference in the ratio of successful JC exam applicants in urban and rural areas" was examined.

Table 11 shows the average ratio of successful JC exam applicants in urban and rural areas. Although the difference between urban and rural areas has tended to decrease since 2010, the difference extended in 2015. The average ratio in target schools has been lower than the average ratio of rural areas, because the ratio of respective schools was uneven. (refer to Table 11 and Figure 4). Thus, the disparity in terms of the ratio of successful JC exam applicants had not improved at the time of ex-post evaluation.

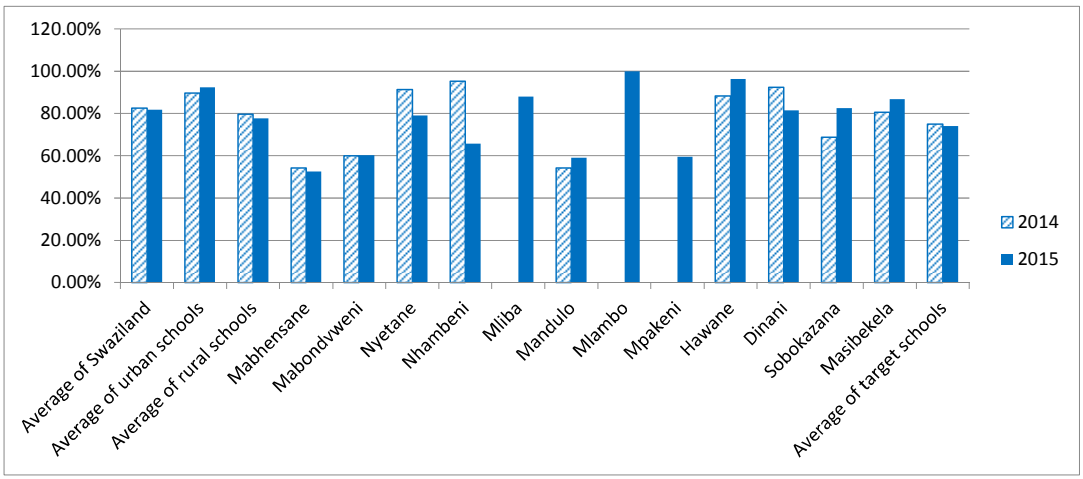
However, when examining the results of the successful JC exam applicants per subject, the average ratio of successful applicants in target areas has been higher in several subjects, such as Siswati, religious education, home economics, and consumer science, than the national average.

Table 11: Average Ratio of Successful JC Exam Applicants in Urban and Rural Areas

(Unit: %)

	2010	2011	2012	2013	2014	2015
A. Urban	91.5	90.3	90.2	89.2	89.7	91.5
B. Rural	79.4	80.8	77.8	79.4	79.7	77.7
(FYR) average ratio of successful JC exam applicants in target schools	-	-	-	-	*75.0*	*74.1*
Difference between urban and rural areas (A-B)	*12.1*	*9.5*	*12.4*	*9.8*	*10.0*	*13.8*

Source: Analysis from the ECOS data



Source: Analysis from the ECOS data

Figure 4: Ratio of Successful JC Exam Applicants per Target Schools (2014 and 2015)[49]

- Ratio of "Grade C and above" in SGCSE exam

As shown in Table 12, the difference in the average ratio of "Grade C and above" on the SGCSE exam between urban and rural areas was reduced in 2015. The average ratio in target schools also improved in 2015 compared to 2014, and it was higher than the average ratio of rural areas. In addition, it is considered that students' study performance at most target schools has improved because ten of the twelve schools improved their ratio in 2015 compared to 2014.

Therefore, the disparity in terms of the ratio of SGCSE exam "Grade C and above" between urban and rural areas has been improved (refer to Table 12 and Figure 5).

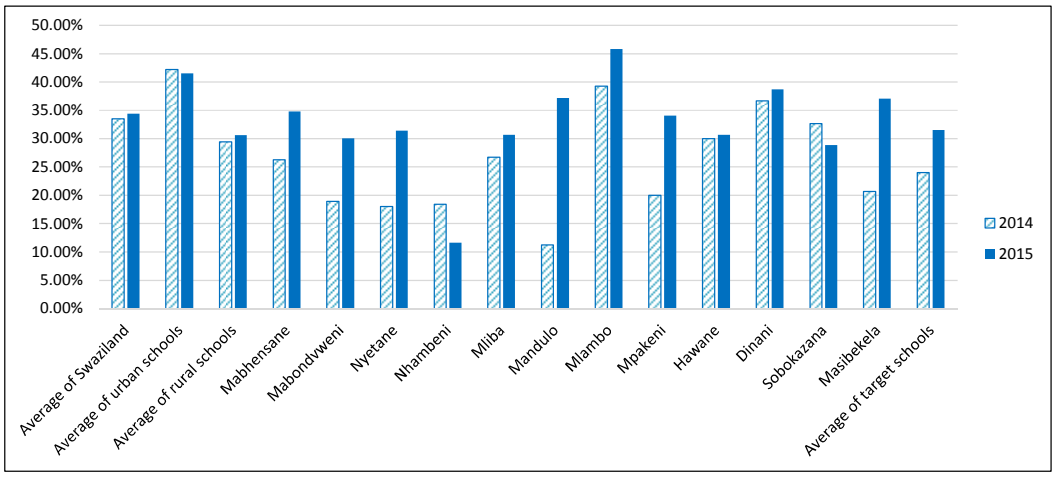
[49] Data in 2014 were not available in some schools. This is because no students took the JC exam in those schools as they did not have Form 3 students in 2014.

Table 12: Average Ratio of SGCSE Exam "Grade C and above" in Urban and Rural Areas

(Unit: %)

	2013	2014	2015
A. Urban	41.7	42.2	41.5
B. Rural	29.4	29.4	30.6
（FYR）Average ratio of SGCSE "Grade C and above" in target schools	-	*24.0*	*31.5*
Difference between urban and rural areas (A-B)	*12.3*	*12.8*	*10.9*

Source: Analysis from the ECOS data



Source: Analysis from the ECOS data

Figure 5: Ratio of SGCSE Exam "Grade C and above" per Target Schools (2014 and 2015)

3.4.2 Other Impacts

(1) Impacts on the Natural Environment

In Swaziland, it is mandatory that an Environmental Impact Assessment (EIA) is conducted by the Swaziland Environmental Authority (SEA) before the commencement of construction works of all development projects. An EIA for this project was also conducted before the commencement of the project.

As the result of EIA, the SEA requested MOET to submit assessment report for four sites (Mabhensane, Mabondvweni, Mliba, and Nyetane). According to MOET, the reports for the respective sites were duly submitted, and planned monitoring was also implemented[50].

Regarding waste management in the target schools, it was observed that some schools burned combustible waste in a pit, and then buried it together with the incombustible waste on

[50] The hard copies of report were confirmed during the field survey

their premises. It is common in Swaziland that waste generated from a school in rural areas is classified as "household waste," and the school has the responsibility to dispose of it. It is generally managed by digging a pit, which is located at a safe distance from living areas and drinking sources, and burning the waste in it[51]. A site visit also confirmed that the waste of target schools was burned in a safe place away from the building.

Therefore, any negative impact to the natural environment by the project was not seen at the time of ex-post evaluation.

(2) Land Acquisition and Resettlement

In regard to the land acquisition of the project, the ownership or usage rights for the land that can be confirmed in writing was listed as a precondition of the project, and the confirmation was also done in writing[52].

As for the resettlement of the residents, residents in three areas (Mandulo, Mpakeni, and Sobokazana) were required to resettle. Among them, residents of Mandulo and Mpakeni were given substitute land. The residents of Sobokazana, who were living close to the school boundary, have not been given substitute land although the negative effect to the project's implementation has not been reported. However, the head teacher mentioned that it will be a challenge for further expansion of school premises in the future.

(3) Unintended Positive/Negative Impact

Positive impacts of the project, raised by the beneficiary survey, are as follows:

- Provision of employment opportunities in the area

  By constructing a new secondary school in twelve target areas, employment opportunities of the positions of cook (total: 12), grounds man (total: 4), security (total: 17) and secretary (total: 10) have been created. Furthermore, the project has contributed to increasing work opportunities for the community by providing work for laborers when simple repairs to the school facilities are needed.

  [Details of respondents[53]: a total of 7 teachers at 5 schools (Mabondvweni, Nyetane, Mandulo, Hawane, Masibekela), 2 schools from students' group interviews (Dinani, Mliba), and 1 school from guardians' group interviews (Mabondvweni)].

[51] Referred to Water Regulation 2000 and hearing with officials in Swaziland Environmental Authority

[52] The land of Nhlambeni was originally for an agriculture project of community youth, but as it was not utilized for a long time, the community chief granted use of the land to the project. After the project's commencement, the youth began to claim the land, but it was solved with an allocation of alternative land for the youth.(Interview with MOET)

[53] Here is mentioned the number of teachers and schools. This is because the number of teachers is easy to mention, as the questionnaire survey was given to teachers. On the other hand, it is difficult to mention the number of students and guardians, because both interviews were conducted as group interviews. Group interviews to guardians were only conducted in 4 schools: Mabhensane, Mabondvweni, Nyetane, and Mandulo.

- Reduction in the number of students engaged in crime and illegal business

Before the secondary schools had been constructed by the project, some children whose parents could not afford their transportation costs were engaged in illegal business, such as the cultivation of marijuana, in order to have cash income. The project has contributed to preventing such crime by enabling children to go to nearby schools without having to afford transportation costs.

[Details of respondents: 4 teachers at 4 schools (Sobokazana, Mlambo, Dinani, and Mandulo), and 1 school from students' group interviews (Sobokazana)].

- Improved mindset of guardians in terms of secondary education

According to the guardians' group interviews, the following comments regarding their mindset in terms of secondary education were raised:

- Guardians recognized the importance of secondary education after the school was constructed near their residence, because they could come to school to see what their children were doing.
- Before the school was built, their children were very exhausted when they came home from school, and they could not do chores. What was worse, their study performances were bad, as their children had to go to distant schools. Thus, guardians had doubts about sending their children to secondary school. However, since the school had been built in their community, the guardians noticed the importance of secondary education, because their children were then able to do chores and their study performances also improved.

[Details of respondents: 6 teachers at 4 schools (Nyetane, Mandulo, Mpakeni, and Masibekela), and 4 schools from guardians' group interviews (Mabhensane, Mabondvweni, Nyetane, and Mandulo)].

- Improved mindset of the community in terms of education

By sending the students to university from the target schools, the community has been able to have confidence and hope for a bright future in their community.

[Details of respondents: 14 teachers at 8 schools (Mabhensane, Mabondvweni, Nhlambeni, Mandulo, Mlambo, Mpakeni, Hawane, and Sobokazana), and 4 schools from guardians' group interviews (Mandulo, Nyetane, Mabhensane, and Mabondvweni)].

- Promotion of education opportunities for repeater and drop-out students in the community

Before the schools were built, students who failed the exam gave up on continuing to secondary education. They dropped out because they could not afford the lodging and

transport costs of another year. After the schools were constructed in the community, those children were able to restart their secondary education. Furthermore, students who had dropped out of secondary education due to pregnancy were able to restart their secondary education while taking care of their baby without being a financial or physical burden.

[Details of respondents: 12 teachers at 9 schools (Mabondvweni, Nhlambeni, Mliba, Mandulo, Mlambo, Mpakeni, Hawane, Masibekela, and Sobokazana), 1 school from students' group interviews (Mpakeni), and 2 schools from guardians' group interviews (Mabhensane and Nyetane)].

As explained above, 2,961 students enrolled in the twelve target schools in 2015, the time of ex-post evaluation. Thus, opportunities for secondary education in the targeted areas were enhanced by the project. It can also be said that the educational environment in the targeted areas was improved, as 222 teachers were allocated to rural target schools, and the results of the satisfaction survey to students and teachers regarding the school facilities were generally positive. The commuting distance/time of the students to school has been reduced because children in the target areas are able to enroll at the nearby secondary schools. According to the students' group interviews, many students responded that they can commute to school in less than one hour on foot. Thus, their commuting environment has been improved.

Regarding the project's contribution to reducing the educational disparity between urban and rural areas, the reduction of such disparity in terms of educational opportunities was not confirmed at the time of ex-post evaluation as the project's contribution was not high in light of the fact that the twelve target schools constituted only 4.4% of the total number of secondary schools in Swaziland (total of 273 schools in 2013). However, the project has contributed in terms of educational quality. Furthermore, several positive impacts were observed through the beneficiary survey.

From the above, this project largely achieved its objectives. Therefore, the effectiveness and impact of the project are high.

3.5 Sustainability (Rating: ②)

3.5.1 Institutional Aspects of Operation and Maintenance

The school committee, consisting of a head teacher, teachers, representatives of guardians, and representatives of the community chief, has a responsibility for decision-making regarding the operation and maintenance of their school facilities. Periodic checks of the school facilities are conducted by the school committee. Simple repair work, such as fixing furniture and facilities, is performed by grounds men employed by the school or by guardians. Repair work

that requires technical skills, such as electric repair and water problems, is outsourced[54].

3.5.2 Technical Aspects of Operation and Maintenance

The simple maintenance of the school facilities is done by the grounds men (including the security officer who also works as a ground man in some cases) or by guardians in most of the target schools. Guardians are not only providing their support to the facility's maintenance, but they also provide their support to the construction of new school facilities. For example, it was observed in one school that guardians were mortaring the interior wall for a newly constructed agriculture laboratory. The maintenance that requires technical skills, such as electricity and water is outsourced. Given this, no major problems have been observed in the technical aspects of operation and maintenance.

3.5.3 Financial Aspects of Operation and Maintenance

Salaries and transportation costs of the teachers are covered by MOET's budget allocated from the national budget. The percentage of budget allocation to MOET has been 17-18%, and it has been stable since 2011 (refer to Table 13). However, according to the interview with MOET, it is not definite that the same allocation will be sustained continuously in the future because the government's income has been decreasing in recent years due to a decline in Southern Africa Custom Union (SACU) revenue, as the major source of government income is SACU revenue sharing. Thus, MOET needs to consider mobilizing funding from other sources other than the government.

Table 13: Budget Allocation to MOET

(Unit: Thousands emalangeni)

	2011/2012	2012/2013	2013/2014	2014/2015	2015/2016
National Budget	**9,968,129**	**11,553,765**	**13,236,150**	**15,306,807**	**15,952,241**
Allocation to MOET from National Budget	**1,800,264**	**2,146,886**	**2,223,797**	**2,640,935**	**2,758,360**
Operating Budget	*1,744,705*	*2,039,480*	*2,170,867*	*2,453,039*	*2,758,194*
Development Budget	*55,559*	*107,406*	*52,930*	*187,896*	*166*
Percentage of the National Budget	18.1%	18.6%	16.8%	17.3%	17.3%

Source: MOET's questionnaire response

[54] According to MOET, the Ministry of Public Works and Transport is responsible for maintaining government buildings, including public schools. According to the site survey, there were cases wherein the school requested the maintenance of teachers' housing units and the construction of playing fields. However, due to the long process of accepting the request, urgent issues have not seemed to be requested. Although the official response from the Ministry of Public Works and Transport is not received, they seem to not be interested in small maintenance jobs, such as school maintenance, as they are also responsible for maintaining public infrastructures like the country's roads (Official site of Ministry of Public Works and Transport, Preparatory Survey for the Education Programmes in the Kingdom of Lesotho and the Kingdom of Swaziland 2009).

On the other hand, the expenditures related to the maintenance and operation of school facilities are covered by school fees collected by each school. The amount of the school fee is set by the respective schools. Nevertheless, as mentioned below in Table 14, more than half of the students in most schools are "orphans and vulnerable children (OVC)," and their school fees are exempted. The school receives a grant from the government for OVC students that is 1,950 emalangeni for respective students of Form 1, 2, 3, and 5 and 2,500 emalangeni for respective Form 4 students per year. The OVC grant for Form 4 students is set higher than other forms in consideration of the need to prepare learning material for senior secondary schools due to the starting year of senior secondary school education[55].

Table 14: School Fee per Year and Percentage Number of OVC Students in Target School (2015)

Target School	School Fee (owed by guardians) / Year / Student（emalangeni）	Number of Students	Number of OVC Students	Percentage of OVC Students
Mabhensane	2,750(F1-F2), 2,850(F3), 3,080(F4-F5)	280	252	90%
Mabondvweni	3,248(F1-F3), 3,410(F4-F5)	258	245	95%
Nyetane	3,465(F1-F3), 4,070(F4-F5)	300	197	66%
Nhlambeni	4,250(F1-F3), 5,050(F4), 4,950(F5)	210	114	54%
Mliba	3,575(F1-F5)	392	246	63%
Mandulo	3,730(F1-F5)	244	184	75%
Mlambo	2,535(F1-F3,F5), 2,885(F4)	198	100	51%
Mpakeni	3,115(F1-F3), 3,145(F4-F5)	238	206	87%
Hawane	3,900(F1-F5)	183	120	66%
Dinani (Etfuntini)	3,520(F1-F5)	265	144	54%
Sobokazana (Hhelehhele)	3,650(F1-F5)	182	93	51%
Masibekela (Mantabeni)	3,950(F1-F5)	211	103	49%

Source: Questionnaire survey with target schools

According to the interviews with the head teachers, there is no school whose expenditure exceeds its income, as they adjust the operation and maintenance expense by prioritizing in accordance with their income[56]. However, it is difficult for each school to secure the sufficient amount for operation and maintenance costs due to the large proportion of OVC students, as

[55] "Orphans and vulnerable children" is defined as children whose parents (one or both) have died, or children from destitute families (hearing with target schools). The numbers of OVC students are counted by the head teacher according to requests from the community, then they make an application to MOET through the Regional Education Office (Preparatory Survey for the Education Programme in the Kingdom of Lesotho and the Kingdom of Swaziland 2009). Some schools collect top-up fees for exam fees and textbooks from guardians, even if the students are acknowledged as OVC students.

[56] Actual income and expenditure of target schools in 2014 and 2015 have been confirmed by questionnaire and balance sheets submitted by the schools.

OVC grants are less than the school fees set by respective schools[57].Furthermore, it was pointed out from the head teachers that one of the challenges is a delay in payment by both guardians and government.

As a result, the schools are facing the following challenges: “They cannot repair their facilities quickly,” “They often cannot ask technicians to fix water and electricity problem as they cannot provide for the transportation cost for the technicians who lives far away,” “They have to rent textbooks instead of purchasing as the price of textbooks is high, and they currently cannot afford them,” “They cannot or are taking time to update school facilities such as new classroom structures and school halls,” and “They cannot or are taking time to construct additional school facilities, such as an agriculture laboratory, fashion and fabric room, and sports field, to provide a better curriculum quickly.”

3.5.4 Current Status of Operation and Maintenance

Through the visual observation during the site survey, the condition of the school facilities and furniture was generally good, and well maintained, though it varies depending on the respective schools. The major issues that were commonly observed were shown in Table 15. The reason for these issues is considered to be the delay of repairs due to the financial problems mentioned above. Damage to the fireplace as well as the broken door handles were pointed out and a suggestion regarding the daily use was given by the Japanese consultant at the time of the defect inspection one year after completion. Thus, it is conceived that those issues are caused by the daily use of facilities.

The termite issue was observed in the science laboratory at Mabondvweni. An anti-termite soil poisoning was required in the principal building agreement with the contractors and MOET and the schools have a right to claim under the “latent defect” for five-year period from the date of final completion. Therefore, the issue is expected to be resolved through MOET.

Table 15: Major Issues of Facilities Observed During the Site Visit

Issue Observed	Number of Schools Observed [58]	Details of Observation
Damage to the fireplace (kitchen)	7	It has a risk; the cooking stove will not be used due to the damage of the base supporting the cooking stove, if it will be left unrepaired.
Damaged floor (classroom, science lab)	6	The following were pointed out, although no serious problem was found: -Difficult to wipe the floor -Not good in appearance

[57] According to the interview with MOET officials, the amount of OVC grant has not been raised for last five years although the increase of the OVC grant has been discussed.
[58] Those numbers of schools exclude the school that had fixed up the same issue.

Broken door handles and loss of keys (students' toilets)	4	Toilets' doors cannot be locked
Water leaking from the sink (H/E room)	4	Cabinet under the sink is damaged and cannot be used due to water leaking

As stated above, some minor problems have been observed in terms of the financial aspect of the operation and the maintenance system. It has brought about the small challenge in the current status of the operation and maintenance.

Therefore, the sustainability of the project's effects is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The project aimed to improve the educational opportunities and environments in secondary education in target areas by constructing new secondary schools in twelve rural areas in Swaziland. This was expected to contribute to reducing the disparity in secondary education between urban and rural areas as desired by the Swazi government.

Swaziland has consistently focused on human resource development and has defined the importance of secondary education in its policy. However, the educational disparity between urban and rural areas has been a problem; at the same time, the number of secondary schools has been insufficient, while the number of students enrolled in secondary education has increased. Under such circumstances, the project's aim was consistent with Swaziland's development policy and needs. Thus, the relevance of the project implementation is high. The efficiency of this project is high, as both the project period and the costs were mostly as planned.

As a result of the project's implementation, the targeted areas' educational opportunities and environments have been improved. Although the project's contribution to reducing educational disparities between urban and rural areas has been limited because the target schools are small in proportion to all secondary schools in Swaziland, the project has contributed in terms of education quality in those target areas. Furthermore, according to the beneficiary survey, some positive changes have been observed, such as the positive changes in the perception that guardians/communities have towards secondary education. Therefore, the effectiveness as well as the impact of this project are high. Minor problems in terms of the financial aspects have been observed in respective schools; thus, the sustainability of the project's effect is fair.

In light of the above, this project is evaluated to be highly satisfactory.

4.2 Recommendations

4.2.1 Recommendations to the Implementing Agency

<Recommendations to MOET>

(1) Careful consideration about free junior secondary education

The OVC grant from the government is less than the school fee, which has been set by the respective schools annually. It brings about financial challenges for the school's operation and maintenance; for example, they can neither repair nor construct the school facilities in a timely manner. However, under such circumstances, most schools have managed to construct new school facilities, such as an agriculture laboratory, by using the micro-project program grant in combination with school fees. Regarding the free basic education (primary and junior secondary), it will phase-in after a careful investigation in primary education, which has already been implemented since 2010 according to MOET. It is desirable that careful consideration be made in advance, such as how the government would cover the cost that is now covered by school fees, as well as how communities led by guardians would cover the 25% cost for applying to the micro-project program grant, after free education would be implemented, in order to keep the sustainability of the project.

(2) Promotion of good practice-sharing among target schools

Among the twelve target schools, Mliba constructed the fashion and fabric room in the space between the H/E room and the kitchen. During the site survey in other schools, the head teachers said they wanted to construct the fashion and fabric room in the same way as Mliba did. In addition, many good practices in terms of school operation and the construction of educational facilities were observed in each school. For example, some schools obtained the other funding resources than the school fees, and others are trying to construct barrier-free facilities with the elimination of difference in level on the floor. On the other hand, some issues such as inappropriate setting of school fees could be prevented if close information-sharing had been implemented.

It is effective for the schools, which were constructed under the same design and local condition to share and incorporate their good practices about the effective use of school facilities and school management in order to maintain the sustainability of the project.

For the enhancement of information-sharing among schools, it is desirable that MOET, which is in the position to grasp the situation of all the schools, takes initiatives to establish information-sharing framework such as:

(i) To provide the opportunity such as an annual meeting among schools to share good practices annually

(ii) To consider using the information-sharing tools such as a mailing list, as most teachers at the schools can access e-mail and social network services

(iii) To introduce good practices through MOET Web site

<Recommendations to target schools>

Consideration for the effective operation and maintenance of school facilities

As stated above, the common issues of maintenance observed at some target schools are regarded to be resulting from the improper routine management and the way of daily use. On the other hand, each school depends upon the school fee for the maintenance, which is insufficient and makes it difficult to repair facilities in a timely manner. In this way, shortage of financial resources is hindering daily maintenance. As for the school fee, the proportion of OCV students is high, and the guardians are not able to afford additional fees due to their financial situation. As a result, it is a serious issue for schools to secure financial resources for maintenance of the facilities.

Under such a situation, about half of the target schools have made an effort to collect funds for operation and maintenance from other financial resources, such as constructing new facilities by using the micro-project grant in combination with their school fees. Mliba and Nyetane high schools receive funding from institutions such as universities, NGOs, and churches.

It is desirable for the school to make a proactive effort to explore the possibility of collecting funds from other sources as well as involving community/guardians.

At the same time, it is recommended that the schools educate students about the appropriate use of school facilities persistently for the sake of efficient maintenance.

4.2.2 Recommendations to JICA

None

4.3 Lessons Learned

Close information-sharing among stakeholders and the involvement of the community during the project's implementation

This project is evaluated to be highly satisfactory. It is considered that a high commitment of implementing agency (namely MOET) and a high ownership from the communities for school operation and maintenance have contributed to this evaluation result. The background, which education sector, including secondary education, was one of the priorities in Swaziland, and which the target sites were selected from the communities that were interested in the project, is also related to their high commitment and ownership.

Also, it is considered that the close information-sharing among stakeholders and the involvement of the community in the project's implementation worked effectively for a smooth implementation of the project as well as the enhancement of the project's effect and the

promotion of ownership to stakeholders.

Although the project sites were geographically dispersed in several sites, it was agreed at the time of the project's commencement that monthly site meetings (1 lot/month) among stakeholders, i.e., MOET (implementing agency), a Japanese consultant, and local contractors, would be held at each site (6 lots x 2=12 sites). Based on this agreement, close communication among stakeholders has been done at the construction sites frequently. In addition, these site meetings were opened to the community chiefs for the purpose of promoting the community people's participation in the project. As a result, active discussion was held among the stakeholders, and sometimes the community demanded an explanation from the contractor regarding the progress of the construction when the progress was not good. It is considered that this site meeting involving the community people brought about good progress management by providing a stimulus to contractors. The construction of the school fence was implemented by the Swaziland side as a way to demarcate between MOET and community: MOET offered the building materials to each community, and the communities themselves built the fence. The community in which people participated in the project actively was able to complete the fence in a short period.

At the time of the defect inspection and at the time of ex-post evaluation survey, it was observed that the communities in which people participated actively during the project's implementation period were making efforts to further improve the environment of the education facility by voluntarily planting trees on cut-slope. Thus, frequent site visits by the implementing agency during the project's implementation period lead to understanding the situation and the needs of the community in more detail. Also, it is effective for the implementing agency to frequently communicate with the community people, who are beneficiary of the project and to involve the community from the project's implementation stage.

This leads to a smooth implementation of the project, the enhancement of project's effect, and the promotion of ownership of the stakeholders.