



Link Community Development

Extract from Malawi School Solar Network external evaluation report, 2015

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3.7 Impact

3.7.1 General impact

The key element of the MSSN was its influence on the cohesion between the district education office and the schools and the contribution to EMIS through good quality, accessible data. The main aspect mentioned by all stakeholders was the improved communication.

The school is now connected to the zone, the zone to the district office, the district office to DIAS, and Dias to "Capital Hill". (DIAS)

The beneficiaries were all capacitated as planned and the Theory of Change for each beneficiary held true when scrutinised, using evidence from a wide range of sources. The following section describes the correlation and the additional benefits and impact that were generated, including the unintended effects and unintended beneficiaries.

3.7.2 Beneficiaries theory of change

The project stipulated expected Theory of Change (ToC) for each of the main beneficiary groups. The resulted changes due to the MSSN project for each of the targeted beneficiaries groups are discussed. This analysis focuses on checking the relevancy of the ToC through evidence and explaining how the change resulted. In the absence of a control group this analysis attempts to present attribution.

Head Teachers

Head teachers, will have improved management capacity via better performance monitoring using up-to-date and accurate school data allowing more targeted instructional leadership; and improved communication between schools and the district office via an Information Management System. This will progress the education quality provided to learners, thus improving retention and completion rates, and leading to poverty reduction for successful learners; and also reduce travel time and costs as admin information can be exchanged online (LCDI estimates head teachers spend up to 25% of time away from school on admin).

The head teachers all increased their **knowledge** of ICT. Some head teachers were not part of the project as they were appointed after the training. It seemed that this was not a problem as the teachers share the knowledge and skills.

The most frequently stated benefit to the school management was the improved **communication** between the school and the district office (including the zone office). The ability to email the PEA

and request assistance, and often getting a reply via email was highly appreciated. The submission of reports and data significantly **reduce travel time** and time that head teachers had to use to travel to either the zone or district offices.

There was also improved **networking** between schools. Schools with connectivity are able to network and share experiences and there is also improved networking between schools in a zone.

The ability to print and photocopy information also contributed to improved **management**. Most of the schools indicated that they improved their record keeping. This pertains to both hard and soft copies. Head teacher management capacity was improved through:

- It brought new skills of managing the school
- Ease of updating administrative records using the computer
- Saves time of having to go to the DEMs office
- Teachers help in the other duties of the head teacher because there is capacity to use a computer

According to the DEM one of the biggest challenges is the lack of good **leadership** at the schools. Most head teachers are not trained in management, leadership and all that is required in the role of the head teacher. Due to the high cost of training (e.g. at Malawi Institute of Education two weeks training costs MK196000) the districts can only send four head teachers at a time. Through the ICT training is possible. This was evident from the schools reporting that 65 people received management training by the PEAs using the ICT.

The **motivation and work satisfaction** of head teachers improved.

The head teachers' motivation improved through them being able to use the laptops.
(DEMIS)

The charging of cell phones was the most common way to use the solar system to **generate income**. This income was used in different ways. Vulnerable and poor children were assisted with supplies and food. Schools also bought soap and salt for the school feeding programme. The money was also used to buy paper and ink that was used to print test and mock exam papers. One school reported that they used the funds to appoint a security guard. This improved the security at school, but also created a job. They are planning to recruit and fund another guard.

The project reduced expenditure on exams since printing and typing are done in-house.
(Head Teacher)

There was also a **saving** of cost in being able to print tests at school. There was also savings for parents of learners as they need not contribute to the feeding scheme or printing of mock exams anymore.

Teachers

Teachers, will develop a wider knowledge base, including teaching methodologies and ICT knowledge; through access to continuous professional development (CPD) opportunities and online distance learning developed by the MoEST and Malawi Institute of Education (MIE). This will attract, motivate and retain teachers in rural areas and provide better quality education to learners.

Teachers acquired computer knowledge. They are able to source **teaching** information from websites. One teacher physically use the equipment to illustrate aspects related to technology when teaching about modern technology and its uses. This improves the teaching abilities and ultimately contributes to learner performance.

I can search for diagrams on specific topics (e.g. the structure of a flower) on the internet, print it and show the learners. They do not just have an opportunity to see other diagrams, but they also have a permanent visual copy. (Teacher)

The MSSN also changed the **assessment** tasks of teachers. They are now able to type and print tests instead of copying test onto the blackboard.

Teachers at Mgawi School are able to use the laptop when typing or printing exams. (PEA)

Head teachers commented on the **motivation** level of teachers. The teachers are also more motivated to stay longer hours at school. They feel proud to be able to use the laptop and internet. This motivates them to search for information and to further themselves. One teacher commented that he is able to study via distance education using the internet.

Teachers are motivated to stay at school even after knocking off. (Head Teacher)

Teachers can prepare lessons at night of necessary. (Head Teacher)

Most of my teachers have developed an ambition to upgrade their Malawi School Certificate of Education Examination (MSCE) because they do use the computer equipment for browsing information. (PEA)

The PEAs reported that there is an increase in **retention** of teachers at the school. This is confirmed with the data indicating that there was 100% retention rate of teachers at the schools and an additional 20 teachers were recruited at the schools.

District level

District, will be better able to monitor and support their schools because of access to more accurate and timely information about school performance. The performance indicating data will allow the district to better target their limited resources to support priority needs, CPD and more effectively implement national initiatives.

LCD's model and work focuses on working with existing structures and capacitating the systems for long term results. The impact of the LCD work on the Education system in Dedza was visible on many levels.

Primary Education Advisors

The delivery of ICT equipment to TDCs and capacity building of PEAs had a significant impact on the PEAs. There was a high **awareness** of the value of the equipment.

The presence of the printer at the school made me understand the importance of having a printer and a photocopying machine for the zone. This made me buy a photocopying machine for the zone using the Zonal Improvement Grant (ZIG). (PEA)

The majority of PEAs reported that they have enhanced **access to information**. This includes access to websites and downloading e-books for teacher development.

I am able to access some important information related to my work via google. (PEA)

The ICT enabled me to acquire teaching methodologies from the website. (PEA)

The PEAs reported improved **communication** as some information is sent online. The improvements benefitted networking between TDCs, between the TDC and district education office and also with schools. The reported improved communication with schools and DEO. It also decreased time and costs in travelling to deliver reports.

I am able to interact with fellow PEAs through the internet. (PEA)

We don't spend much to go to the DEM's office to deliver reports. We just send through e-mails. (PEA)

The PEAs are able to **source information** which not only helps them with their tasks and reduced their travel time, but also enhance the development of schools (including those who were not targeted for the project). That is schools that did not were not provided with equipment or connectivity still benefitted from the project.

More than two thirds of PEAs (67%) reported that the MSSN affected their work and improved their reporting "very much" or "a lot". The only one who responded that there was no influence was the PEA who did not have a laptop at the time of the survey. Some of the additional benefits mentioned include:

- Report writing and storage has been simplified.
- The laptops and training in the templates further enabled some data to be processed at zone level. The DEMIS now provides quality control rather than data entry from handwritten hard copies.
- Upkeep of teaching and administrative records improved.

District education officials

There was a clear impact on the **communication** between the PEAs and the DEO. There is also a reduction in **travel** expenses and significant time saving. Previously the district was able to visit 53 to 56 schools per year, now all 236 schools are visited.

The district benefitted from the use of templates for data entry by the PEAs. The DEMIS reported a significant increase in the quality of the **data** submitted by the PEAs and schools. This was also due

to the fact that all 19 PEAs have laptops. This include 15 provided by MSSN and others funded by funded by Scottish Government, EU and individual donors and schools in the UK.

The DEMIS already foresee using Geographic Information System (GIS) in the *future* that will link school information on a map. This will increase the ease of accessing information such as infrastructure at schools and data such as enrolment rates.

Learners

Learners, will benefit from improved teaching and learning and improved teacher motivation, develop IT skills through computer clubs, and vulnerable learners will receive support in the form of learning materials purchased using funds generated by Solar Connect (e.g. charging mobile phones).

Learners recognised the importance of the solar project; however, girls were less likely to mention it during discussions. Learners acquired basic computer skills and are able to access the internet to search for *information*. Most head teachers reported an increase in enrolment, both from other schools (as the school reputation improved) and from drop-outs returning to school as they feel there is something better on offer.

Learner enrolment has increased from 691 to 834. (Head Teacher)

As reported under the outcome indicator 2, standard 8 **drop-outs** in project schools dramatically **decreased** by 57%. In contrast the standard 8 drop-out rates for all schools in the district **increased** by 39%. It is clear that the MSSN project had a very significant outcome on project schools (see Figure 7). The fact that this effect is not seen on district level most probably has to do with the fact that the target schools were only 6% of the total schools and the short time since the project started. The long term effect and impact will probably be seen in another few years.

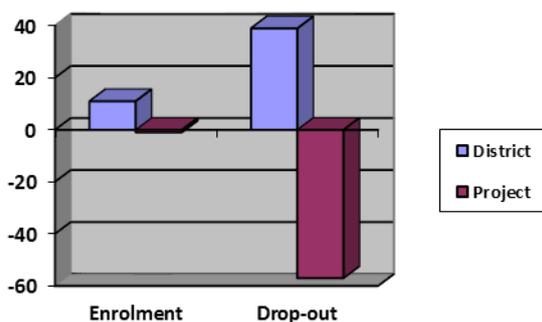


Figure 7: Comparison of enrolment and drop-out rates between district and intervention schools

Many stakeholders confirmed the impact of the project on drop-outs returning to school. It seemed that some of the enrolments were from other schools in Dedza district and others were drop-outs returning to school. Overall this affected the impact on project schools positively but reflects negatively on district drop-outs rates. If the project continues for longer to show impact on the

whole district and is rolled out in more schools it will have a larger effect to enrol new learners who never attended school and not just drop-outs or learners from other schools in the district.

Drop-outs in project schools are returning to school. (DEM)

The **attendance** of learners improved. Various stakeholders mentioned that learners (from the project schools and neighbouring schools) are able to **study at night** as there is light at the school. This is sometimes the only power source other than kerosene.

Learners are now able to study in the evening. (DOPE)

The solar enables us to study in the evening. (Boys)

Learners from other schools come in the evening to study by the light. (Head Teacher)

The availability of teaching and learning materials and the improved **performance** of teachers also contributed to the learners' performance. More learners are now selected to secondary school, which improves the school reputation (again leading to increased enrolment).

The schools are able to administer **typed exams** and mock exams. Previously teacher wrote tests on the blackboard. As more than one blackboard had to be filled with questions and the teachers had to wipe the questions and copy the rest of the question paper it wasted time and learners were more prone to cheat. Learners now have printed test that not only afford them an opportunity to practice and prepare for the Primary School Leaving Certificate Examination (PSLCE). Most students previously had no opportunity to write on a printed test. They also now have a printed copy of the test to use for studying and test preparation. The zone is also able to administer mock exams on zone level. Zonal mock exams now cheaper because they use their own resources; some schools also print their own tests and do not need to travel far to have the tests printed. This also increased the performance of learners as is evident from the increased pass rate.

Learners are now able to write printed exams. (Partner organisation)

The learners can use question papers for revision as the questions are not wiped after the test. They can compare the questions and answers. (DOPE)

Learners are exposed to more questions and more types of questions as they keep the question papers. (DOPE)

The pass rate has increased due to the fact that teaching are administering typed exams and learners are used to the typed exams compared to the past when teachers were writing question items on the chalkboard. (PEA)

Printed exams reduce fear of government exams and have resulted in improved quality of standard 8 results. (SGB member)

There is an increase in the pass rate for all standards at the school where there is solar power. (PEA)

There is an improvement in the general pass rate and the PSLCE pass rate at the MSSN schools. (PEA)

Community

Community school governance bodies will be able to better target their support, analyse the latest school data and exchange good practice.

School Management Committees

All schools reported that the SGBs access data during their monthly meetings (especially SIP and enrolment data). The SGBs reported that they feel their status improved due to the solar project (“*other schools in the community look up to us*”). The rest of their results were regarding the IGA and their work such as the feeding schemes.



Income Generating Activities: Phone charging

The solar communities manage resources and provide labour needed to run the IGAs (e.g. managing the cell charging process).

Community members

Community members significantly benefitted from the project. The income generating activities of the school mostly included community members’ **cell phone charging**. The fee charged for this was significantly lower than at other power suppliers. The community members do not need to travel far to recharge their phones. Ultimately it also improves the availability of communication to community members.

Community members are charging mobile phones at the school. They are charging their phones at a reduced rate thereby benefitting from the solar equipment. (PEA)

PEAs reported that community members also benefitted from the **typing, printing and photocopying** of documents. Other stakeholders in the community also benefit from the project. A teacher indicated that many young persons are now able to type and print their CVs and be able to apply for jobs. Another reported having documents such as contracts for selling property printed at the school.

There is also acquisition of computer knowledge by other stakeholders in my zone. (PEA)

A young person from the community is now studying through distance education. He often comes to type and submit his assignments. (Teacher)

Indirect beneficiaries

Girls

Girls have received the same intervention as boys. The impact on girls was due to motivation and encouragement to be involved in seemingly technical activities. Some individual girls excelled and even took highest order in class performance.

Girls learn how to open, close and name documents. They see their own names on documents. (DOPE)

Learners in my zone are writing well typed exams and this has increased motivation of completing primary education. For example: Kaimvi school used to have less than three girls in standard eight, but in the past two years has had more than eight girls. (PEA)

Vulnerable children

Orphans and poor children benefitted indirectly. The schools used some of the income generated through the MSSN to buy things like soap and food for the vulnerable children.

Other schools

Schools reported that **other schools** have access to the ICT and printing facilities, resulting in a spill-over effect of the benefits, as mentioned for the stakeholders above, to those schools.

Teachers are typing exams for the other schools in my zone. (PEA)

Other schools bring their SIP to be printed here. (Teacher)

I sometimes have to hide the laptop when other schools want to use it. They all want to have the same benefits as us at the school. (Head Teacher)

Individuals

All the interviewees who benefitted from the ICT directly commented on what it has done for them on a personal level. Some are able to improve their qualifications through internet access and ability to participate in distance education. For others having additional skills were important and most respondents felt that the MSSN project improved their self esteem.

Other sectors

One teacher reported that **health workers** can access information via the internet. This provides an opportunity to network with other service providers and to indirectly contribute not only to the worker's knowledge, but also to improved health care.

Acronyms

CPD: Continuous Professional Development

DEM: District Education Manager

DEMIS: District Education Management Information System

DEO: District Education Office

DIAS: Directorate of Inspection and Advisory Services

DOPE: Desk Officer for Primary Education

FTN: Female Teacher Network

ICT: Information and Communication Technology

IGA: Income Generating Activity

LCD: Link Community Development

LCDM: Link Community Development Malawi

MG: Mother Group

SGB: School Governing Body

SIP: School Improvement Plan

SMC: School Management Committee

PEA: Primary Education Advisor

PTA: Parent-Teacher Association

TDC: Teacher Development Centre

