## FINAL REPORT

<table>
<thead>
<tr>
<th>Project title</th>
<th>AHF/REED Solukhumbu Education Rebuild Project (ASER)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project location</td>
<td>Solukhumbu, Nepal</td>
</tr>
</tbody>
</table>
| Project duration and budget | July-1-2016 to April-30-2018  
NPR. 25,113,174/- (300,647/-AUD) |
| Name of implementing agency with address | Rural Education And Environment Development Center (REED Nepal)  
Pulchowk – Bakhundole, Lalitpur, Nepal  
P.O.Box: 8260  
Phone:(977) 1 5521942/5010980  
Email: info@reednepal.org |
| Project administrator with contact details - phone number and email | Ujjwal Amatya  
Pulchowk – Bakhundole, Lalitpur, Nepal  
P.O.Box: 8260  
Phone:(977) 1 5521942/5010980  
Email: Ujjwal@reednepal.org |
| Agreements and partnerships: | Australian Himalayan Foundation |
| Project summary: | On 25 April, a 7.8 magnitude earthquake struck Nepal followed by hundreds of aftershocks. More than 5,000 schools were completely destroyed and thousands more damaged. (Ministry of Education, 2015)  
Solukhumbu was one of the worst earthquake affected districts in Nepal. A huge proportion of school facilities were totally destroyed or severely damaged due to the earthquake. Schools that were still standing were being... |
used as shelters by displaced populations. AHF aided immediate humanitarian challenges. It was vital that Nepal’s children go back to school. Some kind of normality and the feeling of being in safe spaces would help them to recover gradually from the terrible trauma. AHF along with REED Nepal and Nepal Government completed rebuilding schools in different parts of Solukhumbu district. ASER project focused in providing quality construction to create safe environment for the quality education.

I. PROJECT DESCRIPTION

1.1 Goals, Objectives and Outcomes of the Project

Goals:
- Earthquake awareness capacity development
- Earthquake resistant school building handover
- Quality construction under the budget
- Improve the seismic safety of the school building
- Improve the educational environment

Objectives:
The project intended to demonstrate a people-centered, cost-effective, environment-friendly earthquake resistant school building reconstruction strategy that ensure sustainable quality construction for the earthquake-affected communities.

Outcomes:

<table>
<thead>
<tr>
<th>School</th>
<th>Type of classroom by design</th>
<th>Number of classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garma Secondary School</td>
<td>Retrofit of steel frame blocks with stone walls</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>TTW/HASSEL/DFA RP2 classrooms(lgsf)</td>
<td>6</td>
</tr>
<tr>
<td>Jana Jagriti Basic School</td>
<td>TTW/HASSEL/DFA RP2 classrooms(lgsf)</td>
<td>2</td>
</tr>
<tr>
<td>Basa Khali Secondary School</td>
<td>TTW/HASSEL/DFA RP2 classrooms(lgf)</td>
<td>4</td>
</tr>
<tr>
<td>Kalika Basic School</td>
<td>HTNz design - one room classroom (masonry)</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total number of classrooms**: 17
1.2 Implementation and Management

**Implementation**

ASER Project Implementation plan (PIP) was executed in following framework:

Strategic analysis → Case for change → Project planning → Project funding → Project Delivery → Concept
→ Design
→ Documentation
→ Construction
→ Review

**Concept**

Post disaster needs and assessment were carried out immediately after the earthquake. The schools were categorised as minor and major damaged with technical description. The project team developed the project brief and concepts to the point where there were sufficient details to demonstrate that the concept design is viable and acceptable, the costs are within the agreed budget.

**Design**

Design professionals from TTW/HASSELL/DFA contributed their expertise to ensure the design to meet the functional and high level standard for the classrooms.

**Documentation**

The detailed drawings and specification were prepared to form the basis of the construction contract documentation. It included the preparation of the drawings, specification, approval from the Nepal government, and conditions of contract for the required construction contracts.

**Construction**

Construction included the formation of SCCs, MoU, and procurement of local and non-local materials, transportation, on-site activities by labours and community contribution that resulted in the quality classroom.

In remote sites like Kalika and Basa School, a functional School Construction Committee (SCC) oversaw activity implementation with technical and administrative support from the Field Supervisors and Engineer with systematic reporting.

**Review**

It included feedbacks, social audits, ensuring all construction work has been completed appropriately and there was a smooth handover of the project to the School Management Committee. It also included monitoring the performance and making adjustments as required.

**Management**

Project management structure was created to meet the various project needs at different stages of the project. The purpose was to facilitate the interaction of people to achieve the project ultimate goals within the specified constraints of scope, schedule, budget and quality.

The objective in designing project structure was to provide a formal environment that the project manager can use to influence team members to do their best in completing their assignments and duties.

SCC comprised of at least 5 members including Head Teacher. SCC managed separate construction properly with the orientations, technical and administrative support from supervisors. For quality construction SCC facilitated donor/designer monitoring in field, use of skilled manpower, reporting to the supervisors, and coordination with the local government, followed safety guidelines and organised social audits during the handover program.
2. KEY ACHIEVEMENTS

Key results achieved:

<table>
<thead>
<tr>
<th>Activities</th>
<th>Key results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detail structural assessment of damaged schools</td>
<td>4</td>
</tr>
<tr>
<td>Number of students benefited</td>
<td>1500 (45% girls)</td>
</tr>
<tr>
<td>Number of new classrooms constructed</td>
<td>13</td>
</tr>
<tr>
<td>Number of classrooms retrofitted</td>
<td>4</td>
</tr>
<tr>
<td>Number of local builders trained</td>
<td>64</td>
</tr>
</tbody>
</table>

Special attention was given to safety and security with provisions of protection equipment, first-aid and labour insurances. All the labours, teachers and community members engaged in the project interventions were orientated on safety measures.

The project strictly followed the Environment Protection Act-1997-Nepal Law Commission and also monitored its implementation.

School Management Committee (SMCs) were oriented about the project and were involved in the monitoring and community contribution. SMC members were involved in regular meetings for labours management, collections of building materials, arrangement of tools and equipment, local transportation of the materials and safe storage of the construction materials.

3. SIGNIFICANT CHALLENGES

Please describe the challenges faced throughout the project

1) During the start of the project, one of the major issue was an insufficient number of qualified and experienced workers to meet the demand. Local labors were inexperienced in the construction of earthquake resistant buildings. Steel structure was completely new task for them.

2) Deficient communication during the start of the project delayed the approval of the designed drawings. The key to any project is getting it done right, the first time. Communication issues aroused during the construction phase delayed in the real-time communication concerning construction project progress and updates. The communication gaps were due to the poor networks for text messages, emails and phone calls.

3) Nepalese steel companies were not capable to supply the designed steel. It took more than three months to deliver the steel from India to Nepal including manufacturing process. Transportation of steel to respective sites was a tough task. The procurement of the steel almost took 4 months after the government approval of design.

4) Risk management in long term planning, construction, operations and maintenance.

5) Safety management was another challenge. Work injuries were reduced by providing safety gears, gloves, helmets, glasses and first aid tool box to the school. Workers accidental insurance from the REED before signing the MOU with the school.
6) Factors like rainfall and low temperature were challenges during the foundation, cladding and roofing works.

7) Collection and transportation of the local materials up to the site was difficult due to the poor earthen road conditions.

8) Regular supply of electricity, fuel for the generators, damage of the tools and drivers, shortage of screws, lack of availability of machine blades, etc. were other challenges.

9) On time payment to the schools and labors

10) Quality control and budget optimization by continues supervision and monitoring was a great challenge

11) Community contribution by convincing local community

With transparency, real-time data, and tracking, time delays minimized in disputes during construction. Using it strategically to improve project management was the bigger challenge.

4. LESSONS LEARNED

Please reflect on the challenges outlined in the above section and explain what lessons were learned. If you were to implement the project again what would you do differently?

ASER project has been successfully completed despite of the challenges with the desired quality and allocated budget within the specified time. Some of the lessons learned during the project cycle are:

Inadequate Skilled Personnel:
Lack of skilled manpower delays the project time and affects the budget and quality. The PM needs to determine the needed competencies and assesses the available employees. If needed, training can be recommended, as can outsourcing the job and hiring additional workers.

Scope Changes:
This describes the extension of the scope beyond the original objectives. Since the changes are not planned, they typically cause delays and cost money that isn’t in the budget. The Project Manager needs to evaluate change requests and decide whether or how to implement them. The PM then communicates to all stakeholders the impact the change will have on the schedule and/or budget.

Lack of Accountability:
If the team members aren’t taking responsibility for their goals and activities, the PM should provide the leadership to direct (or herd) the team towards the goal laid out in the plan.
**Improper Risk Management:**
Risk tolerance is part of the make-up of a PM. To avoid risk management shortcomings, the PM learns to gather input, develop trust between team members and have a good idea which parts of the project are likely to veer off course.

**Ambiguous Contingency Plans:**
Part of the PM’s planning includes what to do for a variety of scenarios when things aren’t going to plan. These contingencies should be identified ahead of time. A good PM learns to ask others to help identify potential problems.

**Poor Communications:**
Poor communication is a morale killer and a project delay mechanism of the first order. It is up to the PM to keep communications and feedback open between donor, upper management, field supervisors, as well as SMCs.

**Impossible Deadlines:**
Another morale killer, impossible deadlines can result in a loss of productivity. The project manager is there to respond unreasonable requests and negotiate a more realistic deadline.

**Resource Deprivation:**
If resource needs are adequately defined by the PM and approved by management from the beginning, this should not be an issue. The PM is responsible for assigning and prioritizing resources for the duration of the project.

**Lack of Community Engagement:**
The project manager must strive to keep communications open and encourage feedback from everyone at every step of the project.
Project managers have other ways to handle the challenges listed above, depending on the nature of the issue and its impact on the project. If the PM cannot come to an agreement with both parties involved, it may be time to try mediation, a mini-trial, or arbitration. These actions cost time and money. It would behoove management to provide appropriate and adequate resources to avoid these types of problems.

### 5. Monitoring and Evaluation

Please use this section to provide a general description of M&E, how it worked etc. In addition to this please fill out the “Performance Indicator Achievements” column in the table below.
The main goal of monitoring construction projects was to identify any negative deviations from the approved plan. The work plan was prepared and agreed by all the schools. Construction progress report was sent to Nepal Reconstruction Authority (NRA) and Social Welfare Council (SWC) before and after the work. The field monitoring was carried out for the verification of the drawings and check of the material specifications and quality during the construction of the classrooms and to bridge the gap between labour and SCC for solving issues. Financial monitoring with the district and central finance team was carried out during the procurement of construction materials and payments to the vendors and labours. Technical monitoring from District Education Office (DEO) was done during and after the completion of the project before the handover of the school building. SCC meetings were held once in a month with the REED staffs to assure the work going as per the plan.
SCC sent weekly report to field supervisor and PM to become more functional. The final level monitoring and evaluation was carried out during the school handover with social audits.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Activities</th>
<th>Performance Achievements</th>
<th>Indicator</th>
<th>Means of Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective 1</strong>: To ‘build Nepal back better’ with seismic design principles for classrooms in the Solukhumbu region damaged by the 2015 earthquakes.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1. A functional school construction committee (SCC) is overseeing construction activities and financial management</td>
<td>-SCC formed and active -SCC trained on roles, responsibilities and accountabilities -SCC managing activities</td>
<td>4 functional school construction committee overseeing construction activities and financial management</td>
<td></td>
<td>-Field supervisor reports -Monitoring visits by AHF and REED -Review of training materials, reports and attendance records -Social audit</td>
</tr>
<tr>
<td>1.2. Communities are fully engaged and supportive of the project</td>
<td>-community informed and mobilised -community perspectives inform project scope and delivery</td>
<td>20 community members are well aware on project scope and delivery and are fully engaged and mobilized</td>
<td></td>
<td>-Social audit -Progress reports -Senior Engineer weekly updates</td>
</tr>
<tr>
<td>1.3 Schools are upgraded with safer and higher quality classrooms using seismic design principles</td>
<td>-construction of new classrooms using seismic design, materials and construction</td>
<td>4 new schools with 13 classrooms are constructed using higher quality seismic design and construction materials 4 classroom retrofitted and upgraded with earthquake resilient</td>
<td></td>
<td>-Field supervisor reports -Project completion report -Photos -AHF monitoring visit report</td>
</tr>
<tr>
<td><strong>Objective 2</strong>: To build capacity for and assist in institutionalising disaster preparedness and disaster safety concepts in schools.</td>
<td></td>
<td></td>
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</tbody>
</table>
### Objective 3: To ensure the principles of safety, inclusion and dignity are upheld throughout all aspects of the project cycle

<table>
<thead>
<tr>
<th>Objective 3</th>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
</table>
| 3.1 Children are safeguarded throughout all project activities | -construction workers are trained in child protection  
-SCCs are trained in child protection  
-MOU between SCCs and REED document child protection obligations | All SCC members are well aware on child protection  
Children of ASER project area are safeguarded throughout all project activities  
Child protection obligations is in high priority in MOU between SCCs and REED Nepal is documented and applied |
| 3.2 Builders and engineers have appropriate equipment and knowledge to remain safe during construction activities | -appropriate equipment is procured  
-builders and engineers are trained in the use of specialised equipment | 60 builders, 1 engineer, 2 sub-engineers have appropriate equipment and knowledge to remain safe during construction activities |
| 3.3 School construction incorporates some accessible design | -schools are built with ramps | TTW Hassel design incorporated in 3 schools with 12 classrooms and 1 school having 1 room is constructed with HTNz design |
| 3.4 SCCs are gender inclusive | -both men and women are represented on the SCCs, including in positions of leadership | 8 female and 12 male represented on the SCCs  
No female representation in leadership position on SCCs |

- Training on disaster risk reduction and disaster preparedness to the school teachers and local community members

Not achieved. However, it is plan to deliver training on disaster risk reduction and disaster preparedness to the school teachers and local community members in next TTQE project.

- Training report  
- Field supervisor reports  
- AHF field monitoring observation

- Field trip discussions  
- MOUs showing obligations

- Field trip observations  
- Progress reports referencing training/orientation

- Field trips  
- Photos  
- Design drawings

- SCC meeting minutes  
- SCC member documentation
6. **FINANCIAL MANAGEMENT**

*Please use this section to provide a summary overview of expenditure per school. A detailed acquittal should be attached in Annex 5.*

7. **ANNEXES**

*Please attach the following Annexes.*

- Annex 1 - Donor Pro Forma
- Annex 2 - Compliance monitoring checklist
- Annex 3 - Case studies *(Please provide two case studies of people who were directly impacted through this project. This could include teachers, students, builders or other community members)*
Binod Singh Tamang, the head master of Garma School is 48 now. He has completed MEd in Educational Planning and Management and is serving in the education sector since 28 years. He worked as a teacher for 13 years and government resource person for 3 years to serve the remote schools in Solukhumbu. He has received various awards from government for his good service.

During the 2015 earthquake more than 12 classrooms including the student hostel were heavily damaged in Garma School. About 400 students were directly affected due to the unavailability of the safe classrooms. Binod with the help of the community started teaching the children inside the tarpaulin. Later the school built the temporary learning centres (TLCs) made of corrugated iron sheets which helped in continuing the education to some extent. TLCs were just fine during the sunny days but it was very hard for running classes during the rainy and winter days. The school faced a lot of difficulties in running the classrooms. He had the responsibility to safe guard 400 children including 15 deaf students and 30 orphans. AHF did the prefeasibility survey of Garma School and prioritise the school to make it a dream project creating a masterplan. He convinced the community to rebuild school and support ASER project. With his support to the labourers, teachers and the school management committee ASER project has successfully conducted 12 days mason training, 15 days steel demo training with 4 retrofitted classrooms and 6 new classrooms. He has replaced the TLCs with the new classrooms from ASER project.

Binod is very thankful to AHF, REED Nepal, teachers, students, school committee and the village community for supporting him in rebuilding the Garma school which has helped his vision to create safe environment for the students of Garma school. His dedication for providing the quality education inside the quality classrooms has finally been fulfilled by ASER Project.
Saroj Rai (Head Mason)

Saroj Rai (42) worked as head mason for ASER schools at Garma, Jana Jagriti, and Kalika School Necha. He is from Necha Salyan Rural Municipality, 25 km away from Garma. He lives with his wife, a son (2) and a daughter (10). He has been working as carpenter and mason for over 20 years. He has completed his school studies. He works as carpenter, mason and farmer for living.

After the 2015 earthquake, Saroj worked for building temporary shelters for villagers. He helped the community in clearing up the debris and rebuilding houses. He received 7 days mason training about retrofitting and earthquake resistant building construction organised by REED Nepal under ASER project. He took the lead in completing two retrofit buildings in Garma School. He also received the light gauge steel structure building construction training under ASER Project in Garma. He took lead in constructing six TTW/HASSELL/DFA classrooms in Garma School, four classrooms in Kalika School Necha and two classrooms in Jana Jagriti School. He has acquired theoretical and practical skill in constructing the masonry and steel structure buildings through ASER project. Utilising the skills obtained from the trainings, he has constructed more than ten earthquake resistant buildings in his community after the earthquake. He guided his team members best enough to provide the desired quality in the allocated project time period.

Saroj is delighted to receive the national level training and certificates for masons from REED Nepal under ASER project. He now utilises his skills training his juniors on the earthquake safe building construction. His vision is to create the community with the people inside earthquake resistant building. He has contributed in ASER project from the beginning. He is heartily thankful to AHF and REED Nepal for providing such a platform for learning useful skills that supported his vision to create safe community.
Annex 4 - Photos

Project information board
A) **Mason training** (22nd November -3rd December ,2015)

Training Activities for construction of earthquake resistant building and retrofitting

Participants from first shift 22nd November-28th November 2015
Participants from second shift 29th November - 3rd December 2015

Copy of Certificate for participants
B) Retrofitting

First and Second Retrofits at Garma Secondary School, Solukhumbu

Donor Plaque in the retrofitted building
ECD classroom inside the retrofit

Junior classroom inside the retrofit
C) RP2 classrooms construction

Site Layout for new RP2 classroom

Reinforcement works during the monsoon
Steel Demo training at Garma

Demo Prototype building
First and second RP2 buildings after the steel assembly

School building construction area
First completed RP2 classrooms at Garma
Second and Third RP2 classrooms at Garma

Inauguration of the RP2 classrooms at Garma
Thanks giving to AHF

Appreciation Award to AHF from Garma School Family
Appreciation award to the head master and the chief mason from REED Nepal and AHF

Primary class inside the completed RP2 classroom
Agriculture class inside the finished RP2 classroom

Junior class inside the finished RP2 classroom
Jana Jagriti Basic School RP2 classrooms during construction

Completed RP2 classrooms at Jana Jagriti Salleri
Basic Class inside finished RP2 at Jana Jagriti School

Primary classroom inside the finished RP2 at Jana Jariti School
Foundation and stone soling works at Basakhali School

Work during progress at Basa Khali School
Donors visit for field monitoring

SMC meeting with donors
Inside the finished classroom at Basa

Farewell to the labours after the school completion in Basa by SMC and students
Donor plaques in RP2 classrooms

● Annex 5 - Financial expenditure