Taking Trail Bridges Outside Nepal: South-South Cooperation by Helvetas

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This document consolidates the learning of Helvetas South-South cooperation in transferring trail bridge technology and experience to Laos, Indonesia, Burundi and Ethiopia. The principal author is Niraj Acharya, Programme Development Coordinator at Helvetas Nepal and civil engineer. The author would like to thank all collaborators who provided their valuable opinions for the document and enriched it with their insights. Thanks are also due to the Helvetas Nepal colleagues who contributed to the content of this document. Last but not the least, the author accepts responsibility for any unforeseen error in the document.

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Detailed information about the work of Helvetas in Nepal can be found at:
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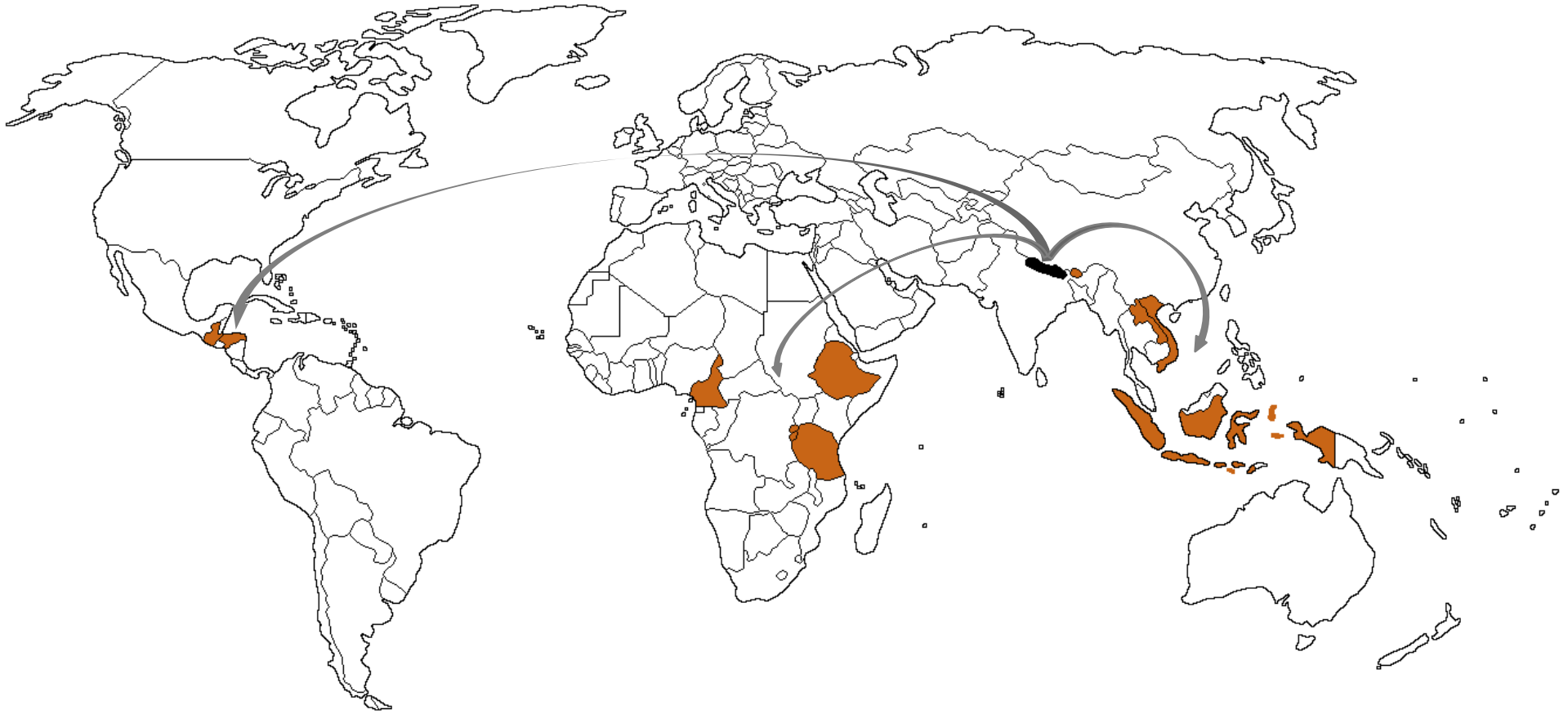

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1. Backdrop

Helvetas Nepal is synonymous with trail bridges. It has been supporting the Government of Nepal in the development of trail bridge technology and the implementation of such approaches since 1974, thanks to the continuous financial support of the Swiss Agency for Development and Cooperation (SDC). Because of this extended engagement, Helvetas has developed a *'state of the art'* capacity in the trail bridge sector. To transfer this knowledge and experience beyond Nepal and to facilitate rural access to millions of people in developing countries, the South-South Cooperation was initiated. The range of support it provides includes feasibility studies, setting up a trail bridge project, survey and design of trail bridges, on-site construction of trail bridges, quality monitoring of civil works and steel parts, and capacity building of local stakeholders. Up to now, Helvetas Nepal has supported trail bridges in Bhutan, Tanzania, Ethiopia, Indonesia, Laos, Burundi, Honduras, and Guatemala. Besides, Helvetas Nepal has also conducted feasibility studies of trail bridges in Vietnam, Rwanda and Cameroon, surveyed/designed trail bridges for Rwanda and Cameroon and designed a couple of bridges for Switzerland.

The chronological evolution of Helvetas Nepal's South-South cooperation is presented on the next page. This document compiles the experience of collaborators and the lessons learned by Helvetas Nepal (following the establishment of SSCU in 2009) through working in four countries – Laos, Indonesia, Burundi and Ethiopia - where SSCU's engagement has been extensive, both in terms of activities and duration.

Year	Activities
Before 2007	• Supported Helvetas Bhutan in adapting short-span trail bridge technology • Survey and design of trail bridges and on-site construction support in Tanzania
2007	• Conceptualisation of South South Cooperation Unit
2008	• Organised trail bridge training for Ethiopian engineers in Nepal followed by on-the-job training for two engineers and one sociologist • Feasibility assessment of a trail bridge programme in Ethiopia, survey of trail bridges
2009	• Feasibility study of trail bridges in Laos and Vietnam • Establishment of South-South Cooperation Unit (SSCU) • On-site technical backstopping to Helvetas Ethiopia for the construction of trail bridges
2010	• Support to ILO for setting up a trail bridge component in Rural Access and Capacity Building Project, and survey/design of trail bridges in Indonesia • Continued on-site technical backstopping to Helvetas Ethiopia for construction of trail bridges • Feasibility Study of trail bridges in Burundi and survey of bridges
2011	• Continued feasibility study and survey of trail bridges in Burundi • Feasibility study and survey/design of trail bridges in Rwanda • Continued on-site technical backstopping to ILO in Indonesia for survey/design, construction of trail bridges, fabrication of steel parts and quality monitoring of steel wire ropes
2012	• Survey and design of trail bridges in Laos • Continued on-site technical backstopping to ILO in Indonesia for survey/design, construction of trail bridges, fabrication of steel parts, and quality monitoring of steel wire ropes. • Technical support for the identification, survey and design of long span trail bridges in Ethiopia • Capacity assessment of trail bridge sector and the stakeholders in Ethiopia • Backstopping support to Helvetas Honduras and Helvetas Guatemala for the institutionalisation of trail bridge capacity in the respective government institutions and universities
2013	• Technical support for layout of “tractorable” and pedestrian trail bridge in Laos • Design of 2 trail bridges for Switzerland • Technical support to Helvetas Ethiopia for survey of a bridge over the Nile river
2014	• Trail bridge design and quality control training in Laos • Continued technical support to Helvetas Laos for quality monitoring of civil works and fabricated steel parts • Implemented Trail Bridge Pilot Project in Burundi • Exposure visit of representatives from Burundi government and African Development Bank to Nepal
2015	• Feasibility study and survey/design of trail bridges in Cameroon • Technical support to Helvetas Ethiopia for the development of a trail bridge training curriculum and manual (for university) started
2016	• Continued quality monitoring of bridge construction in Laos • Trail bridge training to Burundian engineers in Nepal
2017	• Survey of trail bridges in Burundi for phase-2
2018	• Final assessment of bridges and bridge users’ awareness training in Laos • Submission of phase-II Trail Bridge Programme proposal to African Development Bank through Office des Routes, Burundi

2. Supported Countries

Country: Burundi

Project Partner: Office de Route, Burundi
Donor: African Development Bank
Support Provided

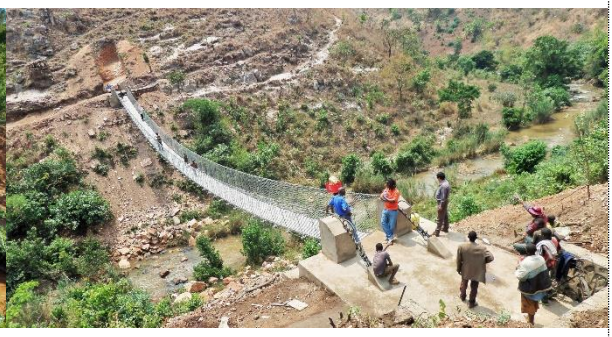
In 2010, Helvetas, on request of the Office de Route (Road Office), conducted a feasibility study and surveyed 4 bridges in Burundi. Later in 2012, it surveyed a few more bridges and submitted a trail bridge pilot project proposal for 7 bridges. Upon approval of the project, funded by the African Development Bank, Helvetas implemented the project and constructed 7 pilot bridges in 2014. As a contractor, Helvetas carried out the following;

- Procurement of steel wire ropes and bulldog grips from India, fabricated steel parts from Nepal, and transported them to Burundi
- Procured locally available materials (e.g. cement, stone etc) in Burundi
- Recruited local community mobiliser and supervisors
- Mobilised the local community for bridge construction
- Conducted quality assurance of the civil works and other procured materials
- Coordinated with Office des Routes as a client over the project period
- Conducted capacity building of local people, technicians and government officials
- Provided trail bridge training to Burundian engineers in Nepal

Nyakijima bridge, Photo by Padam Gurung

Ruvubu Bridge, photo by Padam Gurung

Kugatio bridge, photo by Padam Gurung



Miyobhoji bridge, photo by Prem Khadka

Country: Ethiopia

Project Partner: Helvetas Ethiopia
Donor: Helvetas
Support Provided

Helvetas Ethiopia showed interest in developing a trail bridge programme and thus requested Helvetas Nepal to conduct a training for Ethiopian engineers. Subsequently, Helvetas Nepal organised trail bridge training in Nepal in 2008 and conducted a feasibility study and survey of 13 short-span trail bridges in 2008. In 2009, Helvetas Nepal deployed four technicians to Ethiopia to support Helvetas Ethiopia in constructing nine bridges. The cooperation furthered with the implementation of more bridges and simultaneous capacity enhancement of local stakeholders – technicians, skilled labourers, fabricators etc. Upon successful construction and local capacity development for short-span trail bridges, Helvetas Ethiopia showed further interest in long span trail bridges. Thus, Helvetas Nepal supported the survey and design of the same. To ensure the institutionalisation of the knowledge at university level, Helvetas Nepal further supported the development of a training curriculum and manual. The specific support provided was;

- Survey and design of short span and long span trail bridges, totalling 36 in number
- Facilitation of the procurement of steel wire ropes and bulldog grips from India
- Onsite technical backstopping for 21 short span trail bridges (four truss, four suspension and 13 suspended bridge)
- Quality monitoring of fabrication of steel parts and civil works
- Capacity building of Ethiopian technicians, social mobilisers and community including trail bridge training for Ethiopian engineers in Nepal
- Developing a trail bridge curriculum at university level and a training manual for the same

Adyem bridge, photo by Padam Gurung

Srimajangar bridge, photo by Padam Gurung

Endamino bridge, photo by Padam Gurung

Kawa bridge, photo by Padam Gurung

Country: Indonesia

Project Partner: International Labour Organisation
Donor: Australian Aid
Support Provided

ILO was engaged in the reconstruction of Tsunami hit Nias island in north Sumatra of Indonesia. It requested the senior engineer of Helvetas's trail bridge programme to provide a consulting service and subsequently utilised his support in the survey, design and construction monitoring of a few bridges. Later, ILO entered into an agreement with Helvetas Nepal in 2010 to provide technical assistance for a trail bridge programme under the Rural Access and Capacity Building Project. The support provided was for:

- Setting up a trail bridge component under Rural Access and Capacity Building Project
- Survey and design of 35 bridges
- On-site technical backstopping for the construction of 27 bridges
- On-site quality monitoring of civil works
- Technical backstopping for the maintenance of existing pedestrian bridges
- Quality monitoring of steel wire ropes and fabricated steel parts
- Technical backstopping to steel parts fabricators
- Capacity building of ILO engineers and technicians

Moro'o bridge, photo by Bindu Khumbu

Oyo bridge, photo by Bindu Khumbu

Iraonogambo bridge (maintained), photo by Bindu Khumbu

Baukhe Steel Truss Bridge, photo by Bindu Khumbu

Country: Laos

Project Partner: Helvetas Laos
Donor: Poverty Reduction Fund financed by WB and SDC
Support Provided

Helvetas Nepal conducted a feasibility study of trail bridges in Laos in 2009 which recommended trail bridges as a potential rural transport infrastructure. Subsequently, Helvetas Laos requested Nepal to extend technical support in piloting two "tractorable" bridges (which can accommodate a power tiller) and one pedestrian bridge. Through a partnership agreement signed in 2012, Helvetas Nepal provided the following support:

- Survey of six bridges
- Design of two "tractorable" bridges and one pedestrian bridge and their layout on site
- On-site technical backstopping for construction of the bridges
- Quality monitoring of civil works, steel wire ropes and steel part fabricators
- Orientation to the steel part fabricator about the quality of the work awarded
- Trail bridge design training to Lao engineers
- Final assessment of completed bridges
- Bridge user's awareness training

Chappe Pedestrian Bridge, photo by Bindu Khambu

Skan "Tractorable" Bridge, photo by Bindu Khambu

Mokjong Pedestrian Bridge photo by Bindu Khambu

Skan "Tractorable" Bridge, photo by Bindu Khambu

3. From the mouth of stakeholders

I am better off, and I thank the BAD for the bridge. Before the bridge, we took off all our clothes, put them in plastic bags, and swam to cross the river. Some people drowned while crossing; happily all that is behind us since the acquisition of the bridge. There are many pupils in the hills who abandon their studies because of the diffciulty of access

Audace Bayubahe, Karibu (Welcome) hill, Rutana, Burundi

It's easy to go to the fields, the forest, and to school, and there's no worry about constructing temporary crossings each year. The daily traffic consists of 400 people, 80 motorbikes and 10 tractors. Besides, 50 students are crossing the bridge everyday.

- **Bridge users, Skan bridge, Luang Namtha Laos.**

The bridge is used by approximately 300 pedestrians and 200 motorbikes daily. Farmers ride tractors to transport agriculture produce. Women, particularly, can cross the river more safely; prior to the bridge construction they needed support to cross the river during the rainy season. However, the community can't construct this type of bridge"

-Bridge users, Mokjong Bridge, Luang Namtha, Laos.

In 2014 I fell into the river one night when returning home. I spent the whole night in the water, I had broken ribs and I lost some teeth. I spent many days in hospital and I was operated on the mouth. When the river rose everyone stayed on the side that he was for the night."

Emmanuel, Runyoni hill, Musongato municipality, Nyamabuye river, Burundi

"Before the bridge, I used to pay FB 1,600 for the transport of my bananas – and sometimes the canoe capsized. Today with the bridge, I've acquired a bicycle for my business which means that I can avoid paying for the transport of my bananas. I make banana wine, and can sell one 20-litre can per day – if it's top quality I can sell it for FB 30,000 and if second quality, it's FB 11,000. Depending on the quantity of bananas that I can obtain, I can sell two 20-litre cans of top quality and four 20-litrecans of second quality wine per week; whereas before the bridge [was built] it was one can on market day."

Ntakirutimana, Mushikanawa hill, Gihogazi municipality, Ruvubu bridge, Karuzi Province, Burundi

Source:

- The quotes of bridge users from Burundi are drawn from ***Ex-post evaluation of the socio-economic impact by beneficiaries***, conducted by African Development Bank
- The quotes of bridge users from Laos are gathered by Bindu Khambu during his mission to Laos in May 2018.

The modus operandi for collaboration between Helvetas Ethiopia and Nepal on the transfer of trail bridge technology was based on the most successful support model in Nepal. Initially, the Helvetas Nepal technical experts were assigned at site together with Helvetas Ethiopia personnel and provided support through on-the-job training by the former to the latter. As the capacity of Helvetas Ethiopia developed, subsequent support from Helvetas Nepal changed from site level focus to more mobile quality monitoring, backstopping, support on adaptation/ development of systems and coaching of Ethiopian personnel. As the result of support from Helvetas Nepal, Helvetas Ethiopia staff members have reached the level of independently planning, implementing and assuring the quality of the construction of more than 103 short-span D-type and N-type bridges. Trail Bridge Program is integrated within the Ethiopian Road Sector Development Program (RSDP). Local government as well as multi-lateral agencies such as the World Bank have started covering 60% of bridge construction costs, with gradual increase in their share of funding for bridge construction up to 100%. The technology/knowledge transfer in terms of local capacity building helped Helvetas Ethiopia personnel to build the capacities of around 30 local contractors and consultants, who will assume bridge planning, construction and quality assurance contracts through a public-private-partnership approach. Technical university staff have started advising research projects of their students on trail bridges. The tradition and cultural exchange (Nepal-Ethiopia) has been a two-way observable fact where Nepalese have shared their culture and gained insights into the traditions and culture of Ethiopian people. The technology transfer coordinated under SSCU has even been taken as an example which has been replicated or adapted by other projects of Helvetas Ethiopia (e.g., Skill and Knowledge for Youth Project, Natural Resource Management Project, to cite a few). The added value of SSCU, among other, are:

- the multi-faceted support provided by Helvetas Nepal in the framework of SSCU which has greatly contributed to the development of national Trail Bridge Capacity Building Program (TBCBP) in Ethiopia;
- first hand transfer of technology from the pioneers of trail bridge building;
- no reinvention of the wheel but simply adaptation of technology to the Ethiopian context.

The SSCU provided valuable knowledge transfer and mutual learning. This has also triggered additional demands for trail bridge technology from other African countries (e.g. Burundi) that needs to pilot the technology based on the practically proven experience in Ethiopia and Nepal.

In general, the achievements made so far through SSCU are encouraging. However, it is premature to conclude that the trail bridge technology knowledge base in Ethiopia is fully developed, especially with regard to long span trail bridge technology. Hence, continued and systematic backstopping support from SSCU is required in long span trail bridge technology in the years to come. Although the cooperation is mainly focused between Helvetas Ethiopia and Helvetas Nepal, more has to be done to widen the scope of cooperation to include Nepalese private contractors and consultants as well as Nepalese government agencies to share their experiences and look for potential ways of working business together with the Ethiopian counterparts. Looking for ways of collaboration (i.e. Helvetas Ethiopia and Nepal/SSCU) for trail bride projects in other African countries could be another area that we could further exploit and work on. I am hopeful that the SSCU will continue to be the source of stimulation for further rolling out and institutionalisation of the trail bridge technology in Ethiopia at various levels while Ethiopia aspires to be the centre of excellence in trail bridge technology in the African continent.

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Lack of decent trails and roads isolate numerous remote villages in Laos from services and markets, particularly during the rainy season. Improvement of access to villages is often one of the most important needs expressed by communities. However, the capacity in Laos to build bridges in rural areas is very low, especially the suspension bridges. Those suspension bridges which are built often become unusable after a few years due to poor design and construction. There is a need for permanent, safe and cost-effective small-scale river-crossings for people and their produce.

Hence, a South-South cooperation demonstration project was developed by Helvetas to transfer trail bridge technology and know-how from Nepal to Laos. In addition, the project innovated new designs to enable village hand tractors to be accommodated by the bridges. As a pilot, trail bridges were constructed at three sites in Luang Namtha province – Mokjong, Skan and Chapee. These bridges serve some 7,000 people living in around 20 villages within their catchments. The bridges were finally completed in 2017. The project has established that the trail bridge technology developed in Nepal is safe, appropriate, sustainable and cost-effective solution for remote locations in the Laos context. The project has imparted the knowledge required to fabricate steel parts and construct trail bridges with minimal outside support however, design support is still required.

In the beginning of this South-South collaboration between Nepal and Laos, an exchange visit to Nepal was organised so that Lao engineers could comprehend what trail bridges look like, and a concept note and bridge designs were then elaborated. Based on the field visits and specific request from the communities, the bridges were adjusted to allow for hand tractors. Nepalese engineers from SSCU visited regularly on missions with specific Terms of Reference. Knowledge was transferred through the exchange visits, a number of training events with local engineers on design of trail bridges, and on the job training and coaching of contractors and engineers by the Nepalese engineers from SSCU. Nepalese engineers regularly shared feedback on improvements to be made in construction, including photos for clear illustration. As the technology was new, no factories or contractors had any experience, and thus required close follow up and coaching during the entire process. This was underestimated at the beginning of the project and required much more time and effort than anticipated. On hindsight, a closer follow up would have been needed during the procurement process.

The Nepalese engineers were patient in explaining all technical details to the factory, the local engineers and contractors and overcame language barriers. Despite many setbacks, they persevered in pushing for quality, not allowing for any short-cuts or mediocre standards. In the end this earned them the respect of the Lao colleagues. A number of reports and a document with lessons learned was produced for future reference, available upon request.

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Laos PDR has a similar geography and terrain to Nepal. Pedestrian bridges are a perfect solution to enhance the rural access especially in the northern part of the country. The collaboration between Nepal and Laos was initiated to transfer the trail bridge technology to Laos. Laos engineers visited Nepal to get exposed with the utility of trail bridges and the technology. Then Nepalese engineers visited Laos for the survey of the bridges based on which the bridges were designed. Nevertheless, during the implementation, the design, drawing and the implementation model were slightly modified considering the field situation in consultation with Lao engineers. Particularly, the local capacity building approach adopted by Nepalese engineers was good approach for the local community and engineers to learn on the job for sustainable technology transfer. I acknowledge this to be the best way for transferring the technology and knowledge from one country to another and thank the Nepalese engineers on behalf of the Poverty Reduction Fund, Laos. Nepalese engineers were specialised in the specific technology. Besides, Helvetas in Nepal and Laos are good organisations supporting the poor communities in rural areas. The openness shown by the team, professional way of working and reporting were commendable aspects of the collaboration.

However, there were too many engineers from Helvetas Nepal over the collaboration period causing difference in understanding of the mission and approach while working with local consultants. It was also realised that a certain level of sensitivity towards Laotian culture is needed by the engineers for making community interaction smooth and effective. We also realised that while defining the scope of the work three parties (PRF, Helvetas Nepal, Helvetas Laos) should do it together and that Nepalese engineers alone should take technical responsibilities together with PRF engineers thereby not necessitating an extra engineer from Helvetas Laos. We also think that the capacity building of the Laos engineers be taken up continuously, and that the documentation of designs, implementation processes and learnings should be done and made available for future reference.

We again thank Helvetas Nepal and welcome it for future collaboration and thank SDC for supporting the fund to PRF to build the bridges and closely work side by side with the PRF team.

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The South-South Cooperation Unit of Helvetas implemented seven model trail bridges in Burundi in 2014. Besides, three Burundian engineers also received theoretical training on the design and construction of trail bridges in Nepal. Through this collaboration between Office des Routes and Helvetas Nepal, we learned the new technology i.e. the trail bridge and its installation especially the construction of trail bridge foundations, erection of steel wire ropes and fabricated steel parts. The approach adopted by the Nepalese team was to work directly with the rural people (the masons, the assistant masons and other workers) and the local administrations. Therefore, beneficiaries of these bridges and local administrations were sensitised that they are the owner of these bridges and are thus responsible for the maintenance of the bridges. They also learned something on the routine maintenance of the bridges.

The Nepalese team was friendly and amicable to local people. They adapted themselves quickly and easily into the habits/mentalities of Burundians, which greatly facilitated good collaboration during the work. They were social and helpful. One example of such a gesture is when one of the workers in the bridge site (*over Ruvyironza river in Gitega*) was sick, and the Nepalese trail bridge expert took care of him. Another example is when there was quarrel among workers at the bridge sites, and the Nepalese team facilitated a reconciliation. The biggest strength of the Nepalese team however is that they strictly followed the technical standards of the bridges.

There are a few areas in which the Nepalese team needs to improve. As they do not speak French, the in-depth communication between them and Burundian people was not possible. It would be better if they could speak basic French. There were however some grievances from the workers in the post-construction stage. They complained about different wage rates in different bridge sites and unpaid occasional overtime they had to work, such as in the concreting of the foundation block. These are management related aspects to which the SSCU team needs to give more attention in future.

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4. From the mouth of SSCU team members

Local capacity building has always been at the core of SSCU's working modality. That is why we worked through local technical supervisors and social interpreters at each bridge sites in Burundi. Because of this, seven technical supervisors, seven Social Interpreters and more than 42 masons got the chance to develop their capacity, if not fully, in trail bridge construction. The collaboration between Nepal and Burundi was smooth and conducive. The Office de Routes was very supportive and appreciative of the SSCU team. The Office de Routes' trail bridge team regularly monitored the work in major construction milestones e.g. bridge layout, concreting, tower erection etc. Besides, local government officials and the community people were very friendly and interested to learn about the bridge construction process. For the institutionalisation of capacity building, a responsible entity (institution) is necessary. In the pilot phase no such unit was in place. For future collaboration, a trail bridge unit under the Office de Routes could be a solution to develop the local capacity in Burundi for sustainable technology transfer. SSCU can support in developing the capacity of the unit including human resources and could then gradually reduce its engagement as in Ethiopia.

Padam Bahadur Gurung, Trail Bridge Officer of SSCU, engaged in Burundi for the implementation of pilot bridges. For more information: padam.gurung@helvetas.org

Helvetas Nepal and Helvetas Ethiopia collaborated to develop the latter's trail bridge programme and enhance its capacity for the same. The collaboration has been able to build the capacity of the trail bridge sector in Ethiopia in such a way that SSCU support is no longer needed for short-span trail bridges. This has been possible because of various capacity building approaches adopted such as specialised trail bridge design training for Ethiopian engineers in Nepal, on-the-job training of Ethiopian engineers and technicians while designing and constructing the bridges in Ethiopia, technical backstopping, coaching to steel parts fabricators, and developing trail bridge design courses for universities etc. The team worked with the local and regional government thereby gradually institutionalising the knowledge in the government units. During my engagement in Ethiopia as a trail bridge technician, I have enjoyed the support and appreciation received from the Helvetas Ethiopia team and the local communities. A point to highlight is that Nepal has improved its design and drawing for monolithic foundation blocks (i.e. tower and gravity structure) based on the learning from Ethiopia.

Prem Kumar Khadka, Trail Bridge Officer of SSCU, engaged in Ethiopia for implementation of pilot bridges. For more information: prem.khadka@helvetas.org

I have been involved in the transfer of trail bridge technology in different countries including Laos and Indonesia. In Indonesia, the technology for both long span and short span trail bridges was transferred. The local engineers were trained and coached on the job to enhance their capacities not only for the construction of new bridges but also the maintenance of existing bridges. While engaging with the Nepalese team in the construction of some 30 bridges, the Indonesian engineers developed their capacities to independently design and construct short span trail bridges and to some extent for long span trail bridges. What remains are the institutionalisation of the technology into the government standard, and further capacity building of the sector to scale up the bridges for the benefits of numerous rural people.

In Laos, SSCU supported the implementation of two “tractorable” bridges and one pedestrian trail bridge. The bridges have been regarded by the local people and the government officials as being of the highest quality. SSCU built the capacity of Lao engineers in the design and construction of trail bridges. The important point is that a fabricator has been developed with the required capacity to deliver quality fabricated steel parts in Laos, which otherwise should be imported from the neighbouring countries. It was only a pilot phase, there is still a long way to go. An institutionalised capacity building approach is necessary to take it forward if the government of Laos is to develop the sector.

Bindu Khambu, Trail Bridge Engineer of SSCU, engaged in survey, design and construction monitoring of trail bridges in various countries including Laos and Indonesia for the implementation of pilot bridges. For more information: bindu.khambu@helvetas.org

Even though trail bridges are regarded as small infrastructures, with small capital investment, they bring tremendous joy and benefit to rural people by connecting isolated communities with access to health, education and economic opportunities. That is why the Trail Bridge Programme in Nepal is so popular and a priority-I programme of the government.

I had always known that there were many developing countries in Africa, Asia and even in South America, where rural people face hardships due to the lack of safe river crossings. Considering this, my immediate thought would always be that the trail bridges, developed in Nepal, would be a promising solution. My dream was to transfer trail bridge technology and know-how from Nepal and replicate it to the other countries. However, there was one main obstacle - the lack of awareness of their utility and cost effectiveness, as most engineers and bureaucrats neglect trail bridges and only focus on roads and road bridges.

Nevertheless, there was a breakthrough in 2007 when Helvetas Nepal conceptualised the idea of South-South Cooperation (SSC) and subsequently initiated a collaboration with Ethiopia. I had the opportunity to be a member of an exploratory mission to Ethiopia for a feasibility study and project formulation and later during the implementation phase. Presently, after years of support and systematic capacity building measures, the Ethiopia team is implementing the programme independently. This is a fantastic achievement which was made possible through their commitment and enthusiasm. I still however have one dream left: building a suspension bridge over the Nile as a signature bridge in Ethiopia.

After Ethiopia, my next major collaboration was with the International Labour Organisation for the setting up and implementation of a trail bridge programme on Nias island in Indonesia. Similarly, I had the opportunity to participate in exploratory missions (and subsequently project design) in Laos, Vietnam and Burundi. I have also had the opportunity to provide backstopping support to Honduras and Guatemala for institutionalising the trail bridge know-how within government and educational institutions.

The learning from my engagement in South-South cooperation is that the major barrier to replicating the programme is the lack of knowledge on the utility of trail bridges, as one cannot find the trail bridges in any engineering text book. Another important reason is that for most bureaucrats and engineers, a trail bridge is small and thus unattractive and not saleable.

One way of overcoming these biases would be to organise exploratory tours to Nepal for government decision makers/planners and donors from potential countries, facilitated by the Helvetas Country offices. This would demonstrate both the utility and cost effectiveness of trail bridge technology, especially for developing countries. Further, Helvetas Country Offices can be the ambassador of SSCU for disseminating this small but needed infrastructure for improving rural connectivity.

Overall, it has given me great pleasure to participate and be involved in South-South cooperation. I am deeply grateful to the late Mr. Jan Roukema, the then Program Coordinator of TBSU, who was the visionary and initiator of South-South cooperation. It was his vision, later carried on by others, that made the project such a success.

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