

Trail Bridge Technology Transfer through “South-South Cooperation (SSC)”: Outcomes & Lessons



Orientation by Nepali technical officer on survey of Trail Bridge sites, July 2008, Ethiopia

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1. Background

The transport system in Ethiopia is one of the least developed in the world to support an efficient production and distribution system. Most of the rural population in Ethiopia live away from motorable roads, travelling by foot on narrow trails, which often involve crossing rivers - small and large -- are quite common. Such risky crossings result in loss of human life and livestock particularly in rainy season.

The Government of Ethiopia has recognized the integration of complementary transport technologies or trail networks as an integral and indispensable part of the rural transport programme. In view this, the Government of Ethiopia is opening up various policy processes and action plans which lead to new opportunities to adjust crucial sectors like infrastructure, decentralization (more investments, better service delivery), agriculture (better regulation, less direct intervention, credit facilities, more market forces) and education (more on quality aspect).

The water and rural infrastructure working area of HELVETAS Swiss Intercooperation is contributing and complimenting to the policy framework of the Ethiopian Government. Given the significant unmet need of and ever increasing demand for trail bridges in Ethiopia, on one hand and the capacity limitations of Helvetas Ethiopia to address the demand on the other, was the challenge for Helvetas Ethiopia. This led to the conceptualization of South-South Cooperation (SSC) between Helvetas Nepal and Ethiopia.

2. Pilot Trail Bridge Project in Ethiopia (2003-2007)

2.1. Initiation of Trail Bridge Project in Ethiopia (2003-2005): Bridges to Prosperity

Helvetas Nepal is pioneer in terms of trail bridge technology development. Nevertheless, the promotion and testing of the technology in Ethiopia was first initiated by, an USA based NGO, Bridges to Prosperity (BtP), whose staffs were trained by Helvetas Nepal. In September 2003, BtP signed a memorandum of understanding with Ethiopian Roads Authority and Amhara Rural Roads Authority to launch the first trail bridge projects in Ethiopia. In the meantime, Helvetas Ethiopia initiated its country programme in Ethiopia in September 2003. Based on the understanding made between BtP and Helvetas Ethiopia, the former constructed 7 suspended type bridges in South Wollo Zone of Amhara region and the latter financed the implementation of some of these bridges.

2.2. Launch of Pilot Trail Bridge Project in Ethiopia (2005-2008): Helvetas Ethiopia

In July 2005, BtP phased out of its operation in Ethiopia and handed over all outstanding works including two of its staffs (1 engineer and 1 social worker) to Helvetas Ethiopia. Helvetas Ethiopia implemented pilot trail bridge project in Ethiopia (2005-2007) which led to the construction of 13 trail bridges. The focus was to construct bridges wherever the demand and financing for the bridges are available.

2.3. Outcomes and lessons of pilot phase

- Though technology was new to the community and local authorities, the bridges constructed were highly welcomed by the users enabling them to get access to social and economic service centres triggering increased demand.

- Continuous, more systematic and coordinated capacity building support efforts are needed to improve the technical know-how and performance of Helvetas Ethiopia so as to build the capacities of its partners (Rural Roads Authorities, Woredas and communities).
- The importance of meaningful community participation for full ownership of communal properties is clearly observed from the process of constructing and protecting these bridges in different sites. However, inclusive participatory planning, monitoring and evaluation should be the basis for articulating the demands and screening and prioritizing the bridges in a transparent manner. Thus, a bottom up dialogue/planning forum needs to be promoted and strengthened, where the community, regional/local authorities and technical experts mutually agree on bridge prioritization as per the established criteria and indicators.
- Considering the very low road infrastructure development in Ethiopia and the very high road construction costs and bridges for motorized vehicle in areas with very rugged terrain, the trail bridge technology could be an important complement to the country's endeavours in providing basic infrastructure access to the rural community.
- A step-by-step transfer of knowhow and specialization on trail bridge technologies from Helvetas Nepal to Ethiopia is essential to ensure the sustainability of the technology,

3. Phase I Trail Bridge Capacity Building Programme in Ethiopia (2009-2011)

Learning from the experiences of Nepal and the pilot phase implementation in Ethiopia on the one hand and expressed demand for the trail bridge technology in Ethiopia on the other, Helvetas Ethiopia initiated a nationwide Trail Bridge Capacity Building Programme (TBCBP). The nationwide trail bridge programme has undergone a number of evolutionary processes. In September 2007, Ethiopian Roads Authority (ERA) organized a donor conference, where Helvetas Ethiopia presented its trail bridge technology as a solution to crossing problems in rural areas. In November 2007, Helvetas made a presentation to Rural Roads Authorities about the modalities and approaches of the envisaged programme. In December 2007, a team constituted from Helvetas Ethiopia and ERA made a fact finding mission to Nepal on trail bridges programme development and management. In March 2008, a planning team consisting of Helvetas Nepal and Ethiopia carried out a fact finding mission in three regions namely Oromia, Amhara, and Tigray Regions and elaborated a "Report on Establishing Trail Bridge Programme, Phase I, 2008-2011". In May 2008, ERA and Helvetas Ethiopia signed a "Cooperation Agreement", which became the basis for the elaboration of phase I trail bridge project document. In June 2008, a "Trail Bridge Implementation Launching Workshop" was organized where ERA ultimately accepted and endorsed a three year (2009-2011) Phase I TBCBP Project Document. As a national programme, TBCBP was designed to be implemented in 8 Regions of the country. However, due to resource limitations, the focus was changed to address four priority Regions (Amhara, Tigray, Gambella, and Southern Nations, Nationalities & Peoples' Region (SNNPR)). The implementation and co-financing of Phase I TBCBP was carried out within the decentralized structures of the government's Ethiopian Rural Transport and Travel Programme (ERTTP).



Interaction between Nepali experts and Ethiopian personnel, November 2008, Pokhara, Nepal

The role of Helvetas Ethiopia was on direct implementation and promotion of the technology at all levels (federal, regional, Woreda and community). Initially, 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 the site level focus to more on mobile quality monitoring, backstopping, support on adaptation/development of systems and coaching of Ethiopian personnel.



Backstopping by Nepali trail bridge technical officer about masonry structure, March 2010, Ethiopia

3.1. Objectives of Phase I TBCBP

The objectives of the Phase I TBCBP were to build on the results of Piloting Phase and further development of a national programme. The focus was on four major components:

- a) Construction of trail bridges in tandem in-house capacity building through South-South Cooperation (SSC) between Nepal -Ethiopia;
- b) Adaptation and integration of the locally adapted version of Nepal trail bridge manuals into Ethiopian national standards,
- c) Develop and/or adapt processes, systems and procedures for trail bridge Project Cycle Management (PCM),
- d) Promotion of trail bridge technology through participation in national and international forums and networks and documentation of lessons learnt.

3.2. Outcomes, challenges and lessons drawn in Phase I from South-South Cooperation

- Twenty trail bridges are constructed in six regions (Amhara, Tigray, SNNPR, Gambella and Addis Ababa and Oromia); of which, 4 are N-type, 2 Truss type and 14 D-type. These bridges are contributing for improved access to socio-economic service centres. Phase I of TBCBP focused on Short Span Trail Bridge (SSTB) technology, mainly of D-types and with limited exposure to N-type and truss bridge. The construction of SSTB bridges (truss, D-type and N-type) at the start-up phase has given the impetus to make appropriate implementation decisions of starting from relatively simple technology and gradually addressing the complicated ones, notably the N-type short span suspension bridges.
- The technical, social and management skills of Helvetas Ethiopia personnel are improved. This can be manifested by the fact that the support of Helvetas Nepal staffs has changed from site level to more of mobile quality monitoring and backstopping.
- The South-South Cooperation (SSC) between Helvetas Ethiopia and Helvetas Nepal provided valuable knowledge transfer and mutual learning. This has also triggered additional demands for trail bridge technology from other African countries (e.g. Burundi) where piloting the technology should be based on practically proven experiences in Ethiopia.
- Helvetas Ethiopia solicited funds from Ethiopian government partner (source DFID) for co-financing of direct construction materials and direct labor costs during project implementation. This was achieved in the context of the then prevailing unsound relations between government and NGOs and biased attitude of the former to the latter.
- The Nepal version Trail Bridge manuals for both SSTB D-type and N-type were adapted to the local context. Government partners are aware of importance of the quality norms and standards of the trail bridge and have integrated the adapted version of the trail bridge technology into national standards. In addition, it is imperative that local governments will pay for the construction of trail bridges using national and/or donor-allocated funds.
- The use of existing decentralized government structures for planning and implementation has laid down the foundations for subsequent institutionalized capacity building at all levels. Trail Bridge Programme was integrated within the Ethiopian Rural Transport and Travel Programme (ERTTP). DFID Ethiopia was the major partner of nationwide trail bridge project. DFID Ethiopia, through ERTTP, financed a portion of local road agencies' contribution amounting to 56% of the total project outlay. Helvetas Ethiopia financed the remaining investment balance.
- Trail bridge building in Nepal is implemented with community and contractor approach depending upon the technology (i.e., short span bridges by community and long span by the contractor approach). In case of Ethiopia, a hybrid of the two approaches was adapted,

where trail bridge project of Helvetas Ethiopia takes the lead of planning and implementation of trail bridge project supported by communities and local authorities.

- The decentralized multi stakeholder trail bridge implementation in Nepal has led to a Sector Wide Approach (SWAp). Signatories of this approach (coordinated group of donors) promoted and enhanced the effectiveness of the Rural Transport Infrastructure sector through coordinated donor support with a coherent, realistic and government-led approach, where trail bridge building is implemented in a sub-sector wide approach. In case of Ethiopia, the equivalent of such approach is already started in road sector development programme. In addition, from the beginning, the integration of locally adapted version of trail bridge manuals into national standards, willingness of local governments to allocate funds from their own sources, etc and subsequent efforts that are being underway to anchor the technology as part of sector policies may signal a move towards a trail bridge sub sector approach in the future.
- Despite excellent show cases, the resource base (finance, staffs, etc) of the project still remains limited. Absence of dependable mandates from local sources may jeopardize the programme expansion, up-scaling and institutionalizing the technology at all levels (federal to local).
- Government partners tended to orient too much towards the hardware and less to capacity building 'software' due to political pressure to deliver tangible results to the people.
- The tradition and cultural exchange (Nepal-Ethiopia) was a two-way observable fact where Nepalese have shared their culture and also gained insights into the traditions and culture of Ethiopian people, thereby strengthening the people-to-people ties between the two countries.

4. Phase II Trail Bridge Capacity Building Project (2012-2014)

The goal of Phase II TBCBP is to contribute towards poverty reduction and the improvement of livelihoods of rural communities by enhancing access to social and economic services

On the basis of experiences and lessons gained from Phase I, Phase II of TBCBP will focus on:

- **Bridge construction:** 40-45 new trail bridges will be identified, planned, designed and constructed in conformity with approved standards in a participatory manner.
- **Strengthen national policy dialogue and networking:** establish links to rural transport policies and promote inclusion of trails and trail bridges into rural transport master plan. Policy dialogue on integration of trail bridge technology and processes into curricula of educational institutes will be initiated at various levels.
- **Partnership:** involvement of private sector and CSOs in defined areas of expertise of the PCM will be initiated.
- **Institutional anchoring of the technology:** the creation of institutional capacities (preparing the basis for anchoring the technology at federal and regional levels, educational institutions, private sector and civil society) so that they can accordingly play their envisaged roles and responsibilities actively in trail bridge technology promotion and development.
- **Improving involvement of communities and ensuring good governance principles:** Facilitating local initiatives and commitment requires rigorous efforts through social mobilization. Ownership of the constructed bridge emerges with the bridge request articulated by the community themselves and, to a certain extent, through the community contribution, by primarily facilitating and incorporating a bottom-up inclusive participatory

planning process, mobilization of local resources and human labor. Participation of communities and social inclusiveness will be enhanced as essential prerequisites to ensure gender and social equity, wider participation in and ownership of the bridge which can also lead to diffusion of conflict situations. Transparency in information dissemination with appropriate channels and tools (e.g. public Audit) will be pursued to reach out the target audiences. Users' Committees (UCs) and Bridge Maintenance Committees (BMCs) will be formed and trained through and inclusive participatory processes.

- **Maintenance aspects:** the condition of completed bridges will be assessed and maintained where required.
- **Development of trail bridge training modules:** suitable training modules will be adapted/developed, introduced and trainings will be conducted at all levels.
- **Create a capacity to respond to trail bridge technology demands from other African countries**



Orientation by Nepali technical officer about chiselling of stones, February 2010, Ethiopia

5. The added value of SSC

- The multi-faceted support provided by Helvetas Nepal in the framework of a South-South Cooperation has greatly contributed to the development of national Trail Bridge Capacity Building Programme (TBCBP) in Ethiopia.
- First hand transfer of technology from the pioneers of trail bridge building.
- No reinvention of wheel but simply adaptation of technology in the Ethiopian context.
- The social and cultural ties between two Helvetas countries are strengthened.
- It can further be replicated in other working areas also.

In general, although the achievements made so far through SSC is encouraging, it is premature to conclude that the trail bridge technology knowledge base in Ethiopia is self-standing and far developed. Hence, continued and systematic backstopping support from Helvetas Nepal is required in the years to come. The SSC will continue to be the source of stimulation for further rolling out and institutionalization of the trail bridge technology in Ethiopia at various levels, and Ethiopia, ultimately inspires to be the centre of excellence in trail bridge technology in the African continent.