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Best Practices Database

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Community Bridge Building, Kathmandu *Nepal*

Best Practice

New for 2002

Categories: Technology, Tools and Methods:
- appropriate technologies
- infrastructure technology
- planning tools and techniques
- technology transfer
- training and capacity building
Infrastructure, Communications, Transportation:
- transportation and mobility
Civic Engagement and Cultural Vitality:
- civic education
- community participation

Level of Activity: Neighbourhood

Ecosystem: River Basin

Summary

BLL was established to aid Nepali Communities to revive their traditional bridge building skills and self-help attitude. The technology that was subsequently developed was built on the traditional bridge of Baglung-District while local materials and local labor were maximized and the environmental impact minimized.

Communities have proven to be very keen taking the initiative to build bridges conform to the BLL program themselves. A stepwise approach emerged that led to a bridge. Essentially, the Community organizes itself identifying the bridge site followed by securing locally available materials. Subsequently, BLL reciprocates providing drawings plus training on a bridge model followed by availing "foreign" materials (steel cables, deck, cross beams, etc). Then, the Community porters the materials from the nearest road head to the site and builds the bridge.

Communities have been very successful lobbying for funds from their Local Governments complementing their inputs. Furthermore, in many cases Local Governments are gradually taking over the support BLL used to provide. This has freed up BLL's time and resources to move on, to other Districts.

Since its inception ten years ago BLL has supported 840 bridges with an average span of 65 meters, maximum 180 meters and walkway width up to 1.06 m. The support for bridges gets artificially throttled as BLL cannot keep up with the demand.

"BLL bridges" open up markets, enhance local economies, provide access to dispensaries especially

for mothers and infants as well as access to schools. Furthermore BBLI has been doing its level best to target especially the remote poor and pays particular attention to equal opportunities for both sexes as well as marginalized groups.

Narrative

Situation at the Outset

People in the numerous isolated settlements in the Himalayas are totally dependent on trails and their river crossings. To cross such rivers, they either have to walk at best for hours (more likely days) to reach the other side or alternatively to wade across dangerous waters. Many people lost their lives.

Establishment of Priorities

The demand for trail bridges exceeds the number the Government can put in place by far. BBLI took initiative to upgrade traditional bridge building skills. Inspired by success, two priorities emerged notably developing the required technology plus a social approach so that Communities can build their own bridges and BBLI merely supports. It was later realized that to step up "production", one has to extend his/her efforts through Local Governments emerging in the next priority namely capacitating Local Governments from both a financial and a technical perspective. The approach that emerged resulted in the support of unprecedented number of bridges (195 in 2000/01).

Formulation of Objectives and Strategies

The objective is to develop a trail bridge that is labour intensive (as opposed to capital) so that local people will take ownership and benefit from investing their own labours. These objectives were elaborated by pilot-Communities. A step-wise approach emerged, in which the Project would reciprocate every initiative taken by the Community which eventually led to the construction of bridges up to 180 m span. Firstly the Community organizes itself and collects all locally available materials (gravel, sand, stone, etc) upon which the BBLI provides training on a model bridge followed by supplying foreign materials (cables and steel parts), followed by the Community building their own bridge.

Mobilisation of Resources

The pilot phase was funded by Helvetas/BBLI-proper and was realized by one expatriate engineer and twenty indigenous engineers and administrators. The successor phase was funded by the Swiss Agency for Development Cooperation (SDC), Local Governments and Communities. This phase led to expanding BBLI's indigenous staff now amounting to sixty in four Regional Offices.

The funding is tailored to the needs of a certain locality but is typically: 50% for foreign materials by SDC; 35% by Local Governments (DDC/VDC) and 15% contribution by the Community for local materials, portering foreign materials from the nearest road head to the site as well as the actual construction of the bridge.

Fifty craftsmen were involved from nine Districts during the pilot phase from the Communities followed by 1,652 respectively during the SDC-paid phase. Districts gradually take over the tasks the BBLI used to do namely that of surveying the site, designing the bridge, computing quantity and cost estimates and undertake supervision during construction. The work of the District closely follows the BBLI's Manuals.

Educational Institutes are being prepared to capacitate practitioners from Districts and their regular intake. Institutes will be paid per "student-head" and the funds are envisaged to come from SDC, Local Governments, ADB etc.

Process

BLL used to operate under the auspices of TBS' predecessor named the Suspension Bridge Division (SBD) of the Central Government. SBD stood for conventional engineering and a "top-down approach" in terms of planning. No wonder that SBD would scuff at BLL in the early stages as it stood for the opposite by promoting "Appropriate Technology" and a "Bottom-Up Approach".

Communities and Local Governments were quick in grasping that the "Bottom-Up Approach" resulted in a cost price that is less than half of bridges built through the Central Government. Moreover the total transparency of expenses in BLL's case was another major attraction. This realization led to Communities & Local Governments preparedness to match BLL's input with their own resources. The enthusiasm that followed resulted in BLL having to put on the brakes in early 2001 as the commitments led into 2004!

Once BLL's potential was realized it was no longer honed at but became a threat. Consequently maps that were produced earlier to identify "Main Trails" for planning bridges in a "top down approach" were now used to demarcate territories. Bridges falling on the Main Trail would be reserved for "SBD bridges" whereas off the main trail for "BLL bridges". Notwithstanding this "protection", BLL supported the construction of a multiple (app. 6 x in 2001) of that of the Central Government for less money.

It was only early 2001 that BLL had received such recognition that the two parties, SBD and BLL would discuss the areas of application of both types in an atmosphere of mutual trust. As a consequence, the technology developed under BLL was adopted as a national norm for bridges of a "short span". This was termed the Short Span Trail Bridge norm (SSTB) and the original SBD norms are now dedicated to bridges of "long spans". The old SBD norms have therefore been re-baptized to Long Span Trail Bridge norms (LSTB).

Furthermore after the appropriation of the BLL-technology (now SSTB), the temporary division SBD re-emerged as a permanent Trail Bridge Section (TBS). TBS subsequently received two wings notably LSTB and SSTB. A "demarcation policy" has been developed by both parties indicating when which bridge can be applied.

Although BLL has been very successful, it can not allow to sit on its laurels. Only upon having vested the technology at all levels of Local Government will BLL become sustainable and can the Project phase out. Given the high turn over of personnel in Local Governments this will become a major challenge for the near future.

Results Achieved

Studies revealed that the bridges have had a very high impact on the concerned Communities by opening up facilities that are on one side and not the other. More specifically, bridges have opened up local markets thereby stimulating the local economy, enabled children to attend school, enabled especially mothers and infants to attend dispensaries, etc. Furthermore there has been a marked difference in lives lost, particularly of children and elderly.

The approach of being totally Community oriented at the beginning has, due to the lobbying of Communities, evolved to one that now also includes Local Governments. Local Governments provide substantial financial resources and provide technical assistance taking over tasks, BLL used to do.

As BLL could not keep up with the demand, it empowered nine other NGOs to also build bridges conform to BLL's program. The total number of bridges built amounts to 234.

BLL has become a live example on how the Local Self-Governance Act can be put into practice and serves as a model for other projects

Institutional capacities at the national level have now not only institutionalized SSTB (BLL technology) and LSTB but have changed their focus from "doers" to facilitators concentrating on policies, norms, standards, coordination amongst all bridge building agents etc. Consequently tasks that used to be done at the national level are now being decentralized to Local Governments.

As a result of the exceptionally low cost price of BLL, other agencies (especially the Central Government) have as of recent date agreed to publish all costs of bridges, especially a linear cost price as well as to public enquiries. This, it is believed will improve good governance.

Sustainability

The financial participation by Local Governments amounts to about 50%. In recent date this contribution has come down by a couple of % due to the change over of wooden decks to the costlier steel decks in order to preserve scarce sal wood. It is to be expected that Local Governments will continue to compete and be quite prepared to increase their participation.

In terms of technical capacity, many Local Governments face serious staffing problems. In general, the turn over is high and the capacity is weaker in remote areas. The staffing problem is mainly attributable to the Central Government continuing to second its staff to Local Governments whose loyalty is usually not with the District. This phenomenon is compounded by Districts being strapped for cash thus not able to hire sufficient personnel hence being dependent on the Central Government. BLL favors fiscal decentralization but follows a diversified approach for the immediate future, that is, aiming at capacitating all cadres and not only senior staff. The experience appears promising and has so far enabled BLL to phase-out in two Districts. If the trend continues, it is feasible to phase-out, in at least 20 Districts during the current phase (ending mid 2006). BLL's current preparations to farm out Cap. Bldg to existing Educational Institutes will speed up this process.

In order to better serve remote areas, BLL has also commenced cooperation with RADC of the Central Government. This is a semi-autonomous body responsible for developing the infrastructure in remote areas. BLL has provided on-the-job training in 1998 to twenty staff members of the RADC who have ever since supported forty two BLL-bridges. A survey on the quality is still to be completed but preliminary results are positive.

Furthermore, in order to synchronize efforts between the different Bridge Building Agents, BLL has succeeded to convince TBS to commence a Trail Bridge Coordination Committee (TBCC). All agents meet at least once a year to exchange information on their plans and it is also used as a platform to disseminate norms such as SSTB and LSTB.

Lessons Learned

The social approach developed under BLL (termed Social Organizational Support: SOS) is rather universal and can be applied to products other than trail bridges. Experiments using the SOS-approach are being conducted on a trail project, a micro hydro power project, irrigation projects and sanitation projects. The results although not yet complete appear very encouraging.

In terms of technology, BLL has promoted a technique from Baglung District in other parts of Nepal, known as "dry masonry". Through carefully cutting natural stones in a slightly wedge shape and staggering them carefully, one can totally avoid cement. This makes bridges more environmental friendly, increases local labor in a sensible way, decreases the cost price markedly and reduces portering heavy bags over long distances. This dry masonry is through bridges, becoming more wide spread in Nepal on products other than bridges.

The loose modus operandi with the Central Government (the quasi "traditional" counterpart) combined with the newly introduced Self Governance Act, has enabled BLL to manage a multitude of contracts (52 Local Governments) and to reduce its dependency on any one partner. As partners (Local Governments) realize that they are not unique they commence a healthy competition. This in turn has

enabled BBLT too, to push for total transparency in accounts and to be open for public enquiries.

Communities have learned that they can take initiatives and that, given a bona fide product / program, they have a leverage over Local Governments to avail public funds for projects that are of interest to Communities and that do not siphon off to prestigious projects.

Furthermore Communities have also learned that by being totally transparent that they can assess the desirability of a particular bridge on the basis of a single criteria notably the cost price per linear meter. This has enabled them to make comparisons with Government funded bridges (top down approach) often putting the feasibility of such expensive bridges in question and questioning the effectiveness of how tax payers money is spent.

Transferability

The BBLT technology and program has, under the auspices of Nepal-Bhutan, been replicated in Butan by local Communities and the Central Government.

Mozambique-East Africa has submitted a request to introduce BBLT there. Negotiations are currently ongoing between BBLT and the "twin" from Mozambique envisaging a collaboration for a few years.

A Swiss Organization "ProNatura" has contracted BBLT to design bridges for a natural park.

The technology developed under BBLT, now termed SSTB is applied by all bridge building agents in Nepal.

Apart from the transfer of both technology and social approach as one package, parts of the technology alone or the social approach are also transferable.

Examples include the transferability of dry masonry mentioned above to other parts of Nepal and the social approach to building trails, irrigation facilities, micro hydro stations, etc. (vide 14.8).

The dry masonry has proven to be of particular interest to Bhutan, decreasing the cost price by as much as 35%.

"By-Products" include the use of BBLT produced Transport Infrastructure Maps. DDCs use and now upgrade said maps for planning and monitoring purposes of other infrastructural projects.

Furthermore the same maps are being used by many other agencies / development projects and are "hot cakes" in the bookshops for tourists going trekking.

Key Dates

1989 BBLT established, modelling Baglung Traditional Bridges.

1990 - 1995 Develop Social and Technology Approach.

1995 - 2000 Expand by Involving Local Governments.

2000 Government Appropriates BBLT Technology & Norms.

2000 - 2005 Capacitate Educational Institutes for Phasing-Out.

References

No	Author	Publication Title	Volume/ Number	Date	Page Number(s)	Remarks
1	Ms. Hemlata Rai	Nepali Times	Bridge Builders think nationally and act locally	N/A	15/11/01	N/A
2	BBLL	"Brochure"		1 01/11/01		N/A
3	F. Gaehwiler	Bridges for rural access in the Himalaya		N/A	2001 38, 39	In the Journal "Mountains of the World" prepared for the UN commission on sustainable Development and its 2001 spring session
4	BBLL	Project Document Phase II		7/97 - 6/01	13, 17	Ratified by Government of Nepal and Switzerland
5	BBLL	Routine Maintenance Manual for Trail bridges		1 15/07/99		Illustrating Routine Maintenance
6	BBLL	Short Span Trail Bridge (SSTB), Technical Manuals, Norms & Standards		3 Volumes	15/7/01	Dedicated to SSTB technology Can be mailed seperately if desired.
7	Good Governance	Correspondent Bridges over Himalayan water		Volume 4		
	No.1	July - Sept. 2001		28, 29		Journal of "Good Governance"
8	Prof. Dr. Wolf Linder	Local Bridge Build-ing as a participatory development process		1 15/3/99		Dedicated to BBLL. Review cum Advisory Support Mission to BBLL
9	BBLL	Transport Infrastructure Map 57 Districts		1998 - 2001	N/A	Developed for the purpose of planning and monitoring.
10	BBLL / Markus Engler	Participation in Rural Infrstructure Programmes		February	1994	

Contact

Jan S. Roukema
 Helvetas-Nepal,
 G.P.O.Box 688,
 Kathmandu, NEPAL
 Tel: 00-997-1-521 054
 Fax: 00-977-1-526 829
 e-mail: tbssp@helvetas.org.np

Type of Organization: Non-governmental organisation (NGO)

Nominating Organization

Same as above

Partners

Trail Bridge Section
 N.Shah
 Shree Mahal,
 Pulchowk
 Kathmandu
 Tel: 977-01-524681
 Fax: 977-01-524682
Type of Organization: Central Government
Type of Partner Support: Financial Support

District Development Committee
 Lal Kumar K.C.
 Charikot,
 Dolakha
 Tel: 977-049-20142
Type of Organization: Local Authority

Type of Partner Support: Political Support

Social Development Association
Mrs. Kamala Thapa
Banepa,
Kabhre
Tel: 977-011-62105

Type of Organization: Non-governmental organisation (NGO)

Type of Partner Support: Technical Support

Financial Profile

<u>Fiscal Year</u>	<u>Total</u>	<u>Building Bridges at Local Level</u>	<u>District Development Committee</u>	<u>Village Development Committee</u>	<u>Users Committee</u>
00/01	1,347,000	48	9	22	21
99/00	1,028,000	45	8	26	20
98/99	585,000	44	10	21	24
97/98	351,000	51	10	26	13

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