



## Seeking sustainability: Lessons from project experience

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IN THE PAST DECADE, there has been increasing awareness that the overriding developmental consideration is *sustainability* - that is, the provision of technical assistance in such a way as to initiate beneficial change that will then continue under its own momentum. This means helping people to help themselves, by means that fit naturally into their society and environment. Development projects are consequently expected to contribute to a broad technology transfer and skills development process, which may include courses and on-the-job training, but may also require linkages between institutions for a more substantial transfer of skills over a longer period.

Indeed it can be argued that the goal of the development process is essentially to enable the beneficiaries to gain a more effective control of their environment. This means that the objective is not just to provide resources or to develop a set of defined skills, but to deliver an operational and sustainable system. In most cases, to be truly sustainable, this system should be capable of being operated and maintained using resources that are locally available.<sup>1</sup> Although the principle of sustainability is clear, its achievement is difficult since development projects are so diverse in their technical demands, as well as in the range of target groups and circumstances involved. This paper aims to illustrate this diversity by offering lessons from six brief cases, with a view to demonstrating the need for a strategic framework within which appropriate technical assistance programmes can be designed.

The first two relate to organizations, the third to a national association established to assist its member corporations, the fourth to a regional support programme, and the fifth and sixth to international sectoral development programmes.

### Management information systems in Egypt

In the late 1980s, a large public sector contracting company operating within Egypt and elsewhere in the Middle East was faced with increasing competition as public construction enterprises were removed from the administrative control of sectoral ministries. Amongst other initiatives, it was urgent that effective management information systems should be developed, both to enable site management to improve the quality of short-term decision making and to enable higher levels of management to be aware of current performance and trends. This required extensive use of computer-based systems in two main applications:

- to provide timely and relevant information to site management); and
- to provide selective information to top management as a basis for more effective strategic control and planning.

A technical assistance project was developed by the International Labour Organization (ILO) which included the supply of equipment and software packages, international fellowships and study tours for selected staff, consultancy advice from international specialists and training courses and workshops within Egypt. A project of this kind is well defined, and it is possible to tailor training precisely to the needs of individuals in the light of their present and likely future roles within their organization. The inclusion of fellowships and study tours enabled senior staff to establish useful linkages with possible partner institutions, and select those with which they would prefer to work.

### Sri Lanka

Construction management has become an established discipline in the USA and Europe, where a Master's course in construction management is now seen as an important step for civil engineering graduates who intend to pursue a career in project management. Sri Lanka was one of the first Asian countries to appreciate the potential for postgraduate training in the discipline. The quickest and most cost-effective way of instituting such a programme seemed to be through a twinning arrangement with an established postgraduate programme, and the British Overseas Development Administration (ODA) agreed to fund a link programme with Loughborough University of Technology (LUT) through the British Council. LUT has two established MSc courses in Construction and Construction Management, which provided a framework, training material and a system which could be transferred and subsequently modified to suit local needs.

The twinning arrangement allowed junior staff from Moratuwa to undertake LUT MSc courses and a PhD programme, while LUT staff visited Moratuwa to support the programme in the early stages and to provide coaching assistance to other local staff. The programme at Moratuwa is now well established, and is underpinned by the University's strong industrial contacts (also a feature of LUT's courses) and a network of international contacts. The confidence of the industry creates a virtuous circle, since potential students appreciate that the qualifi-

cation is valued and past students demonstrate its value by their subsequent performance.

### **China International Contractors' Association**

In the context of the national objectives of "opening to the outside world and invigorating the domestic economy", during the late 1980s the large Chinese construction corporations began to compete aggressively in the international market for construction projects.<sup>2</sup> However, they also appreciated that the risks in this market are commensurate with the potential rewards, and were anxious to secure appropriate training for their middle-level and senior personnel so that they could identify suitable markets, bid realistically and install planning and control procedures that would enable them to execute projects successfully. The China International Contractors' Association (CHINCA) had been formed in 1988, and was designated as an appropriate vehicle through which the necessary training could be channelled.

The training covered a comprehensive range of topics that were eventually further developed by the ILO as its *International Construction Management* series of seven text books.<sup>3</sup> Due to heavy demand, 16 training workshops and seminars were delivered against 9 planned, and the number of direct participants was 870 against 450 planned. International experts were heavily involved in this pilot training, but the availability of the series of published text books will enable local institutions to establish a continuing training capability. The outcome of countrywide projects such as this is always difficult to measure objectively. However, the growing confidence of Chinese construction corporations is indicated by the fact that the total volume of their construction and labour service activities in 1992 (the final year of the project) was US\$ 6,585 millions, a 203 per cent increase compared to that in 1988, while four CHINCA members had figured in the list of the top 200 international contractors.<sup>4</sup>

### **Labour-based roads in Africa (ASIST)**

Interest in labour-based methods of construction in low-income countries has grown steadily over the past 30 years, and has been promoted mostly through individual field projects with intensive support from international specialists funded by international development agencies. In Eastern and Southern Africa alone, the growing recognition of the need to mobilise local skills and local resources has meant that national projects to a value of some US\$10 million per annum are currently underway. Training is a key element of all these projects, and has to be provided at all levels from managers and supervisors to site personnel.

The volume of activity in the region suggested the need for external support, and a number of development agencies cooperated with the ILO to establish a small regional support group, with the acronym ASIST (Advisory Support, Information Services and Training). ASIST is effectively a programme supporting a number of country

projects, and also provides a clearing house for information exchange between projects in the region.

### **Improve Your Construction Business (IYCB)**

The ILO *Improve Your Construction Business (IYCB)* programme is an international initiative to promote the effectiveness of small-scale local construction contractors. One of the characteristics of most national construction industries is that a relatively small number of major construction firms do a significant proportion of the available work, and a very large number of small firms do the rest.<sup>5</sup> Small-scale local contractors are a vital part of any developing economy, because they are available for all the multitude of small and domestic scale construction work that serves the daily needs a society. They are, as a consequence, a potent potential force for economic development, especially as employment generators in their own and associated industries such as building materials.

IYCB was initiated in Ghana, through a pilot technical assistance project supported by the Government of the Netherlands. An important element of the methodology was the direct involvement of local training specialists and contractors in the development and testing of the materials. The external assistance was mainly directed towards conceptual and general support, training of trainers, and documentation. The delivery of the training, and subsequent implementation, was the responsibility of the National Management Development and Productivity Centre and the contractors' associations, who had the "ownership" of this project. The programme was pursued enthusiastically by the Civil Engineering and Building Contractors Association of Ghana, who organised much of the field work, and found members to be trained as trainers. The IYCB material has been published as a series of three pairs of Handbooks and Workbooks: two pairs covering *Pricing and Bidding* and *Site Management*, and the third on the management of the construction business itself, *Business Management*.<sup>6</sup> The IYCB concept allows for these handbooks and workbooks to be accompanied by technical material for contractors specialising in certain sub-sectors, so as to form a series of integrated franchising packages. The first of these is a handbook and workbook package under development on a labour-based road maintenance project in Lesotho, entitled routine maintenance and regravelling (ROMAR), and this is likely to be followed by a further package covering labour-based road construction and rehabilitation (ROCAR).

### **Management of Appropriate Road Technologies (MART)**

Many developing countries are characterised by deteriorating economic conditions, a crippling scarcity of foreign exchange and an abundant supply of cheap labour. Efforts have consequently been directed towards developing and disseminating technologies which make more effective use of local resources (particularly human resources). Over the past twenty years, labour-based tech-

nologies have been proved to be effective and economic in a wide variety of countries, and demand for advice and assistance on their implementation continues to grow.

Since the focus has been on individual country projects, there was a need to draw together project experience and undertake generally relevant research on appropriate tools, equipment, training materials, documents and routines. The ODA-supported MART project will enable these lessons to be widely applied so that project interventions will not each have to retrace the same learning curve. Furthermore there will be an emphasis on private sector involvement, so as to mobilise entrepreneurial skills and create enterprises which are be sufficiently flexible to provide lasting employment opportunities while reacting promptly to changing client requirements.<sup>7</sup>

The MART initiative is intended to meet this need by codifying experience and undertaking essential research and development work in the four key areas of:

- handtools;
- intermediate equipment;
- private sector development; and
- institution building for sustainability.

The project commenced in April 1995, and will collaborate with a wide range of international associates which have the potential to develop into regional centres of excellence.

**The lessons**

The summary of the six cases set out in Table 1, illustrates the diversity of development problems, and the need for a specific focus on institution building in order to establish a local capacity to identify and meet new challenges without excessive reliance upon external resources.

Institution building is relatively (but only relatively!) easy to achieve where a single organization is involved, as in the first two cases. It becomes progressively more difficult as the target group becomes more diffuse and difficult to define, although cases 3 and 4 show how a single 'enabling' institution can provide essential support to other organizations within a defined area and cases 5 and 6 point to the scope for networking and support on a global scale.

One of the reasons why institutions are so central to sustainable development and growth is that they provide a foundation for management of change within the society which aspires to be developed, promoting an orientation away from reliance upon external assistance<sup>8</sup>. Those involved must define the mission of the organization, the target groups to be served, the types of external links to be forged, and the programmes to be developed to serve them. It is a very complex, delicate and time-consuming process. Nevertheless, there is no alternative to effective institution building, if the development process is ever to be truly sustainable.

**Table 1. Project objectives and sustainability criteria**

<i>Project</i>	<i>Target group</i>	<i>Project objective</i>	<i>Criteria for sustainability</i>
Egypt: Development of management information systems	Contracting company	To develop computer-based management information systems for both site management and top management	Systems are readily useable and provide timely and relevant information
Sri Lanka: Twinning arrangement to establish postgraduate construction management course	Academic institution	Course established within host university	Industrial links ensure that qualification is valued by past and potential students
China: International construction management	Chinese construction corporations (National)	Improved international competitiveness of large Chinese construction companies	China International Contractors' Association able to provide continuing support to member companies
Support to labour-based road projects in Africa (ASIST)	Project staff (Regional)	Advisory Support, Information Services and Training (ASIST) programme supports country projects in Eastern and Southern Africa	Local skills and local resources effectively mobilised
Improve Your Construction Business (IYCB)	Small-scale construction enterprises (Global)	Develop generally applicable material for self-study and use in training courses within the context of a national project	Small construction enterprises operate more effectively, based on a better understanding of basic management techniques and commercial risk
Management of Appropriate Road Technologies (MART)	Road contractors and employers (Global)	Improved hand tools and basic equipment, improved linkages between institutions and groups working on labour-based road projects	Labour-based techniques increasingly competitive, thereby maximising employment potential of road construction and maintenance projects by mobilising private sector

## References

- <sup>1</sup> MILLER E. From dependency to autonomy: Studies in organization and change. Free Association Press, London, 1993.
- <sup>2</sup> MILES D. and VAID K.N. A strategy for the China International Contractors' Association; CHINCA. Construction Information Paper CIP/4. International Labour Office, Geneva, 1991.
- <sup>3</sup> ILO (Various authors). International Construction Management series. ILO, Geneva, 1995.
- <sup>4</sup> UNDP/ILO Project CPR/88/024. Terminal Report by National Project Director. (Unpublished).
- <sup>5</sup> RELF C. Guidelines for the development of small-scale enterprises. ILO, Geneva, 1987, 16-17
- <sup>6</sup> ILO (Various authors). Improve Your Construction Business series. ILO, Geneva, 1994/5.
- <sup>7</sup> MART Bulletin No.1. Construction Enterprise Unit, Loughborough University of Technology, 1995.
- <sup>8</sup> MILES D. and NEALE, R.. Building for Tomorrow: international experience in construction industry development. International Labour Office, Geneva, 1991.