

Role of Research in Construction Industry Reform

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What is
construction
industry reform?

How much does
it cost?

How long does
it take?

What does
reform seek to
achieve?

How is it
assessed?

When is it most
effective?

Which countries
need it?

What does
reform need?

Who initiates it?
Who does it?
Who benefits?

Some questions on construction industry reform

How much
reform has been
done?

What have the
hindrances
been?

What has
helped where
positive results
are achieved?

What are the
main features?

What is next in
industry reform?

What have
been the
results?

What do reform
programmes
have in
common?

What are the
major
differences?

What are main
reasons for
differences?

Why does construction industry need reform?


- Clients' perspective
- Governments' views
- Users' response
- Industry's opinion – practitioners, institutions
- Stakeholders' perspective
- Researchers' views
 - researchers' universal view: construction industry's performance falls short of 'legendary' yardsticks in all respects
 - most research questions are formed on this basis.

Why does construction industry need reform? ..2

- Despite achievements in industry change programmes in many countries, further effort is required.
- Summarising 3rd revaluing construction conference, Courtney (2005) noted:
 - “Perhaps the **most positive outcome** from the conference was the evidence from both programmes and projects that **construction could be reformed**, that **new approaches to procurement and project management did produce better quality outcomes** and that, **over time and with consistent commitment, the industry could once again be valued for its contribution to social and economic aims.**”

Is the need greater in developing countries?

Huge gap between need, and stock and provision



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graph TD; A[Huge gap between need, and stock and provision] --> B[Backlog constraining development and improvement in quality of life.]; B --> C[Resources are scarce; need for low cost, high efficiency, high durability, low environmental impact]; C --> D[Institutions are weaker]; D --> E[Stakeholders more numerous, reliant on industry's professionalism];
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Backlog constraining development and improvement in quality of life.

Resources are scarce; need for low cost, high efficiency, high durability, low environmental impact

Institutions are weaker

Stakeholders more numerous, reliant on industry's professionalism

Is the need greater in developing countries? ..2

- World Bank (1984, p. 3) noted:
"Improving construction capacity and capability is important to most developing countries. First, the extensive basic infrastructure built up at high cost in earlier years, and especially during the 1960s and 1970s, have now to be maintained; and it is generally expensive, if not impossible, to bring foreign contractors back again for this type of work. Second, much of the continuing new investment is in small works that are scattered, which are also usually unsuited for execution by foreign firms. Third, there is a need to improve on the efficiency, timeliness, and quality of construction and maintenance work in many developing countries. And, fourth, there is a growing recognition that construction can be a more important generator of jobs and a source of managers and businessmen than it has been in the past."

Is the need greater in developing countries? ..3

- Rwanda's Ministry of Infrastructure (2009): **construction industry is indispensable to the development of Rwanda's economy.**
- Uganda's Ministry of Works and Transport (2008): developing a strong construction industry would yield these benefits:
 - a **skilled workforce** and a strengthened public sector for contract planning, financing, procurement, monitoring and evaluation
 - **improved quality and efficiency** leading to **better value for money in projects**
 - **reduced incidence of insolvency and failure to complete work by contractors**, leading to reduced costs to clients
 - improved prospects for greater share of national construction work being undertaken by local contractors and consultants
 - improved work continuity leading to greater employment security;
 - greater retention of construction profits in the country
 - **better quality and safety of infrastructure.**

What is industry reform?

- In construction industry, 'reform' has many names.
- They include 'development' and 'improvement'.
- 'Revaluing' has also been used.
- Many definitions of each of these words.
- For example, Department of Public Works (1997, p. 12) defined industry performance as: "doing the right job, at the right time, at the right cost and in the right way".
- CIB Priority Theme on Revaluing Construction aims to provide a guide to initiatives and programmes around the world seeking to change and improve performance of construction industry.
- CIB: definition of "Revaluing Construction" has been clarified as: "the maximisation of the value jointly created by the stakeholders to construction and the equitable distribution of the resulting rewards."

What is industry reform? ..2

- Definition of industry reform should consider:
 - the activity
 - the purpose
 - the objectives and broad targets
 - how it will be done
 - who will do it.
- 'Reform' ... subject has to be taken apart, and put back together; the result must look different from the original; the process should be radical, the change must be fundamental; it must be desirable; and it must be beneficial.
- Reform has benefits, but might also entail risks. There is uncertainty in many respects.
- The end result cannot be guaranteed.
- *Does construction industry need to be reformed?*
- *Are the programmes so far really reforms?*

What is the government's role?

- Arguments on government's role in reform ... more, or less of it?
- Many governments are aware of their responsibility here.

Preamble of Uganda's *Draft National Construction Industry Policy* (MoWT, 2008, p. xiii) states:

- **"Recognising** the need to have in place a clear, well-focused and people centred National Construction Industry Policy;
- **Appreciating** the important role the construction industry plays in the socio-economic development of Uganda; and
- **Bearing in mind** the commitment of the Government to economic and public sector reforms for the country's development;
- **Now therefore**, the Government of Uganda has formulated this National Construction Industry Policy to support the emergence and establishment of an effective and sustainable national construction industry. The NCI Policy intends to promote the growth and development of the construction industry in which both the public and private sector are informed, conscious and actively involved in decision-making on matters that affect them.
- The Policy is in line with the Constitution, National Vision 2035, PEAP, and the National Development Policy."

What is the government's role? ..2

- Rwanda's Ministry of Infrastructure (2009, p. v):
- "It is the duty of Government to ensure that there is a well-developed construction industry to implement infrastructure projects".
- It states also: "in fulfilling its mandate, the Ministry of Infrastructure has a number of key strategic objectives, one of which is to strengthen the national construction industry through deliberate and enabling policies and strategies" (p. v).

half a century of industry reform



1950 to 1980

- Initiatives to reform the construction industry first launched in early 1950s.
- Report of United Nations Group of Experts (1952) on housing in developing countries offered strategy for construction industry improvement.
- In national development plans some developing countries included strategies for reforming their construction industries.
- Committee on Construction Capacity in Singapore (1961) investigated ability of local construction industry to deliver the massive programme of infrastructure, housing, school, factory building; made proposals for improving the capacity and capability of the industry.

1950 to 1980 ..2

- Team of experts studied Tanzania's construction industry. Its report on industry development (Ministry of Works, 1977); one of the best works.
- Most notable measures: formation, in 1981, of National Construction Council, an industry development agency, first of its kind.
- Some international organizations have studied construction industry development in poorer countries.
- World Bank commissioned many studies; much work at University College London under Duccio Turin.
- International Labour Office (ILO): Construction Management Programme for 20 African countries in mid-1970s with donor funds.



Building Economics Research Unit

**Construction and Development :
a framework for research and action**

A paper prepared for the IBRD
London May 1972

University College
Environmental
Research Group



**LOCAL CONSTRUCTION
INDUSTRY STUDY**



GENERAL REPORT

MINISTRY OF WORKS TANZANIA 1977

1981 to 1995

World Bank (1984, p. 7) noted:

- “..most important, a comprehensive strategy is required to support the construction sector to integrate efforts channeled through the various sectors which make use of, or contribute to, construction activities. The strategy must address the general policy environment in which the industry operates as well as specific problems faced by the sector in each country.”

Bank also noted (p. 9):

- “Finally, one important point must be stressed: the strategies for developing the domestic construction industry will require concerted actions by a number of sectors and need to be sustained over long periods. They may also call for the implementation of difficult policy reforms. The strategies will only succeed if the government is committed to them and is willing to sustain the actions and implement the reforms that are needed.”

1981 to 1995 ..2

- United Nations Industrial Development Organisation (UNIDO) focused on technology and materials in its programme to develop construction industries in developing countries.
- United Nations Centre for Human Settlements (UNHabitat): many studies on development of construction industries in poorer countries.
- First Consultation on Construction Industry, UNHabitat and UNIDO, Tunis, 1993.

THE CONSTRUCTION INDUSTRY

Issues
and Strategies
in Developing
Countries



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World Bank Discussion Papers

The Consulting Profession in Developing Countries

A Strategy for Development

Syed S. Kirmani
Warren C. Baum

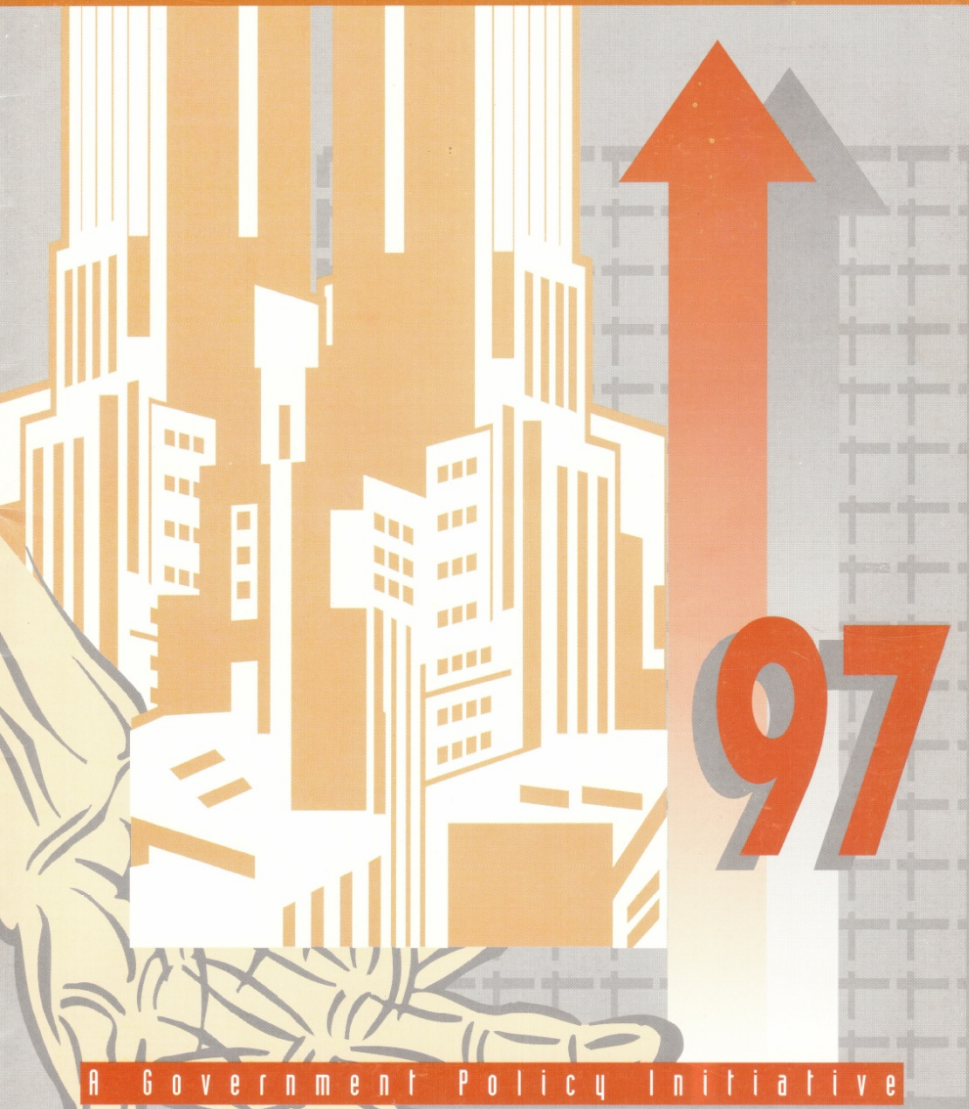
1981-95

- Australian government established Construction Industry Development Association (CIDA) to deal with labour relations problems in construction industry in the 1980s.
- It had a pre-determined five-year life, 1991-95. CIDA produced many guides on good practice.
- In 1995-96, Swedish government appointed 'Building Costs Delegation' to work with building sector to achieve long-term reductions in costs.
- Main target: 25% reduction in initial costs through greater industrialisation and prefabrication.
- Also:
 - encouraging new thinking and initiating R&D
 - initiating new forms of planning, negotiation and contracting that can assist competitiveness and quality
 - achieving improved long-term competitiveness in the building market.
- Delegation was succeeded by Building Costs Forum.

1996-2005

- South Africa's Department of Public Works (1997, p. 2):
- "The strategic aim of a construction industry policy is to establish an enabling environment in which the objectives of reconstruction, development and growth are realised in the construction industry.
- "The vision is of a construction industry policy and strategy that promotes stability, fosters economic growth and international competitiveness, creates sustainable employment and which addresses historic imbalances as it generates new industry capacity."

**CREATING AN ENABLING ENVIRONMENT
FOR RECONSTRUCTION, GROWTH & DEVELOPMENT
IN THE CONSTRUCTION INDUSTRY**



A Government Policy Initiative

**of the following participating Departments: Transport, Water
Affairs and Forestry, Housing, Labour, Education, Trade and Industry
and State Expenditure.**

Coordinated by the Department of Public Works

Programmes in South Africa's green paper

Developing a stable delivery Environment

- Counteracting demand volatility
- Towards a stable work performance

Enhancing Industry Performance

- Work process transformation
- Procurement strategies to effect best practice

Towards an Enabling Strategy of Human Resource Development

Promoting New Industry Capacity and the Emerging Sector

Developing the Capacity and Role of the Public Sector

- Delivery to target the marginalised
- Overcoming regulatory impediments to industry performance
- Improving public sector capacity to manage delivery
- Promoting regional integration.

1996-2005

- Industry reform does not take place in a vacuum; it must build on what exists. That further highlights the importance of context.
- In 1997, in time South Africa, many initiatives were underway, including:
 - National Public Works Programme aimed at infusing a community-based delivery into the creation of assets
 - development of guidelines and pilot projects for labour-based construction and training
 - procurement reform, aimed at targeting small and emerging contractors
 - creation of the pilot register to address access to work by previously marginalised groups
 - establishment of a database of emerging contractors to facilitate their participation in public works programmes
 - public sector transformation aimed at improving service and delivery management
 - enterprise development programme
 - launching of special presidential projects for urban renewal
 - establishment of three housing institutions – a housing agency, a housing finance corporation and a homebuilders registration council
 - programmes to provide work opportunities to construction industry.

1996-2005

- Report in US in 1995 found these barriers:
 - Lack of leadership
 - Adversarial relationships
 - Parochialism
 - Fragmentation of the industry
 - Inadequate owner involvement
 - Increasing scarcity of skilled labour
 - Liability.
- The report set 7 “National Construction Goals”:
 - 50% reduction in delivery time
 - 50% reduction in operation, maintenance and energy costs
 - 30% increase in productivity and comfort (of the occupants)
 - 50% fewer occupant related illnesses and injuries
 - 50% less waste and pollution
 - 50% more durability and flexibility
 - 50% reduction in construction work illnesses and injuries.

1996-2005

- Vision for National Construction Goals program:
 - High quality constructed facilities support competitiveness of U.S. industry and everyone's quality of life
 - U.S. industry leads in quality and economy in global market for construction products and services
 - The construction industry and constructed facilities are energy efficient, environmentally benign, safe and healthful, properly responsive to human needs, and sustainable in use of resources.
 - Natural and manmade hazards do not cause disasters.
- Products of plan to achieve National Construction Goals:
 - Leadership for Innovation
 - Regulatory Reinvention
 - Skilled Construction Workforce
 - Baselines and Measures of Progress
 - Human Factors
 - Information Systems
 - High Performance Materials and Systems
 - Automation.
- Thus, industries of countries at all levels of development require reform.

1996-2005

- In Tanzania, studies show that despite initiatives taken to improve performance of construction industry since the late 1970s, many problems persist.
- Mwamila and Mkamba (2001) highlighted these “characteristics” of the industry in Tanzania:
 - inadequate construction equipment; lack of financial resources
 - proliferation of unscrupulous and unqualified engineers
 - lack of official fee structure for engineering services
 - inadequate capacity and capability in construction management and engineering specialties such as safety, environmental protection, reliability, maintainability
 - unfair competition with foreign firms.
- Thus, in construction, ‘reform’ is not a terminal concept. It might be safer to consider it in terms of a series, and to design these series together, or at least, to enable successive change initiatives to build on preceding ones.



THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF WORKS

NATIONAL CONSTRUCTION INDUSTRY
DEVELOPMENT STRATEGY

DAR ES SALAAM
TANZANIA

FEBRUARY 1991

NATIONAL CONSTRUCTION COUNCIL



ASSISTANCE TO THE LOCAL CONTRACTING INDUSTRY

DRAFT
PROPOSALS FOR THE DEVELOPMENT
OF THE
LOCAL CONSTRUCTION INDUSTRY
IN TANZANIA

MARCH, 1993

Mansfield Street,
P.O. Box 70039,
Tel. 31321/2, Fax. 31323
Dar es Salaam
Tanzania

1996-2005

- National Construction Industry Development Strategy of Tanzania highlighted features, problems and constraints of industry, and outlined initiatives for addressing them. Key elements put into Draft Construction Industry Policy for Tanzania.
- Policy's goal:
"To develop an internationally competitive construction industry so that it can undertake most of the construction projects in Tanzania and export its services and products".
- Its objectives:
 - to improve the capacity and competitiveness of the local construction enterprises ... to enable them undertake most of the construction projects in Tanzania and export [their] services.
 - to ensure efficient and cost effective performance of the construction industry that will guarantee value for money on constructed facilities in line with best practices (p. 4).



THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS

CONSTRUCTION INDUSTRY POLICY

Dar es Salaam

2003

1996-2005

- Construction Industry Master Plan (CIMP) of Malaysia: strategic roadmap to develop construction industry into a world-class, innovative, knowledgeable global solution provider.
- Strategic thrusts were:
 - integrate construction industry value chain to enhance productivity and efficiency
 - strengthen image of construction industry
 - strive for highest standard of quality, occupational safety and health, and environmental practices
 - develop human resource capabilities and capacities in construction industry
 - innovate through R&D and adopt new construction methods; leverage on information and communication technology in construction industry
 - benefit from globalisation including export of construction products and services.

More recent reform programmes, 2006 to date

- Vision for construction industry of Uganda (MoWT, 2008): “to have an effective, efficient, sustainable construction industry in which both public and private sector are informed, conscious and actively involved in decision-making on matters that affect them”.
- Main objective of National Construction Industry Policy of Uganda: to improve regulation and development of construction industry.
- Purpose : to improve co-ordination, regulation and development of construction industry.
- Aim: put in place an effective institutional framework to address weaknesses in construction industry so that the private sector can effectively participate.
- Goal: enhance delivery, stability, improved performance, and growth of local businesses and professions within an organised and continuously improving institutional framework.

More recent reform programmes ..2

- Action plan for Uganda includes:
 - Strengthen, equip training centres and undertake capacity building to develop skills required by client agencies to administer contracts
 - Provide support to emerging consultants and develop small-scale contractors
 - Establish Uganda Construction Industry Commission as an advisory body to government for co-ordination of public, development partners, and private sector dialogue
 - Provide support to secretariats of regulatory bodies
 - Support and strengthen contractors' and other associations
 - Establish plant pool to provide access to equipment to local firms
 - Facilitate materials research and testing centres and incorporate findings of new technologies in specifications and standards
 - Provide training and sensitisation of stakeholders on integration of cross-cutting concerns in design and implementation of infrastructure facilities.



THE REPUBLIC OF UGANDA

MINISTRY OF WORKS AND TRANSPORT

Draft NATIONAL CONSTRUCTION INDUSTRY POLICY

Permanent Secretary
Ministry of Works and Transport
P.O. Box 10
Entebbe

October 2008

REPUBLIC OF RWANDA



MINISTRY OF INFRASTRUCTURE

RWANDA NATIONAL CONSTRUCTION INDUSTRY POLICY

Ministry of infrastructure
P.O. Box 24
Kigali

August, 2009

More recent reform programmes ..3

- National Construction Industry Policy of Rwanda aims to enhance delivery, stability, performance, and growth of local businesses and professions within an organized and continuously improving institutional framework.
- Main thrust: to develop an effective institutional framework for sustainable infrastructure development and maintenance in construction sector for buildings and transportation.
- Policy objectives (MOI, 2009, p. 10):
 - Harmonise the roles and responsibilities of public and private sector for effective NCI management
 - Establish National Construction Council of Rwanda (NCCR)
 - Develop and strengthen local capacity for effective participation in the industry
 - Strengthen and support regulatory and professional bodies;
 - Promote use of appropriate technology
 - Remove restrictive practices on women's participation in construction and protect children from exploitation
 - Ensure that construction industry supports sustainable national economic and social development.

research and industry reform agenda



Building blocks for industry reform

- Groupings of local institutions appreciating need for reform...
 - Construction Vision Forum in South Korea
 - Construction Industry Joint Committee in Singapore
 - Building Industry Presidents' Council in Malaysia.
- International groupings of professional or trade associations...
 - Southern African Construction Industry (SACI)
 - Federation of Consulting Engineers (FIDIC) playing a major role in procurement reform and enhancement of transparency and professional ethics
 - Asean Constructors Federation has a regular meeting with ministers of member countries in charge of labour to address common concerns.
- Associations of researchers on construction, some regional...
 - Malaysian Construction Researchers Association (MICRA)
 - Chinese Researchers in Construction Management (CRIOCM)
 - Association of Schools of Southern Africa (ASOCSA)
 - West African Built Environment Researchers (WABER).
- New CIB TG84.

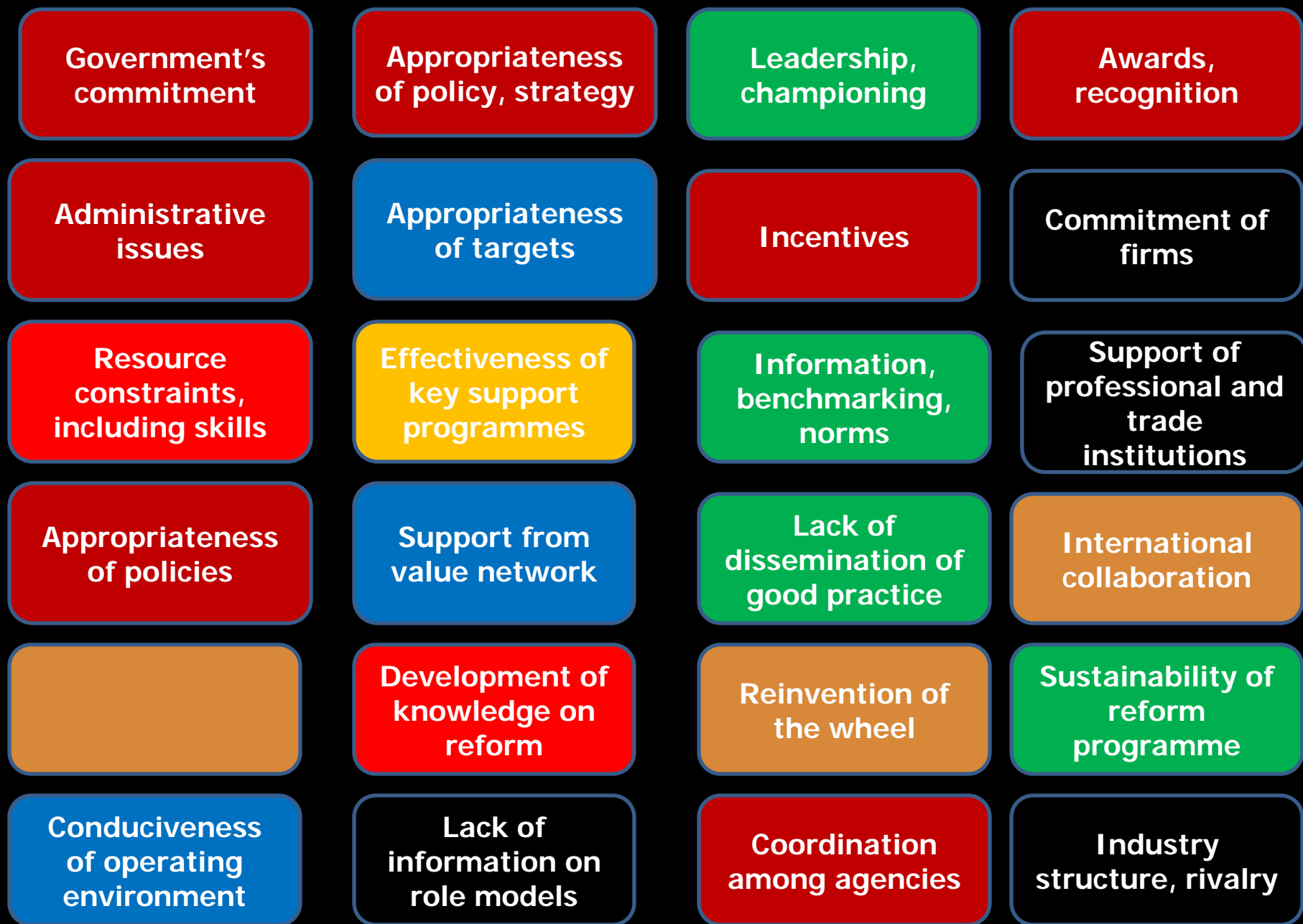
- Industry reform agenda ...
 - is long-term in nature, it should exist beyond being a TG?
 - should draw in all CIDB-type organisations.
 - should attract regional and international institutions like FIDIC and IFAWPCA.
 - should seek to involve the World Bank, ILO, UNIDO, UNHSP.
- Not be a task for TG84 alone; it is one for CIB itself, and for all of us.
- Procurement reform: significant global wave leading to real policy changes, powerful institutions in most countries.
- What about construction industry reform? 1999-2000 was a watershed period; a wave of key developments, but what has happened since then?
- What will happen after now?

CIB's Priority Theme

- CIB: around the world, client expectations stimulating radical reviews of how industry can be re-engineered to enhance its performance.
- Global agenda developed from international survey questionnaire and international workshops led to "infinity" diagram, reflecting need for continuous improvement in seven key areas for a more valued industry:
 - holistic idea of construction
 - shared vision amongst stakeholders
 - balance of markets and social capital
 - dynamic decisions and information
 - evolving knowledge and attitudes
 - awareness of systemic contribution
 - promotion of full value delivered to society.
- Three conferences on revaluing construction: 2003, 2005, 2007.

Some basic features of reform programmes

- Government plays a key role in reform.
- Reform is a multi-stakeholder activity.
- Reform programme is triggered by 'need'.
- Background activity is usually extensive; context is covered.
- Vision is usually ambitious, idealistic.
- Intention is for revolutionary change.
- Championing of change programme is given attention.
 - Hong Kong ... to set up an "industry co-ordinating body" to lead a change programme, Construction Industry Council formed in 2007
 - Malaysia ... inter-industry committee Works, Entrepreneur and Cooperative Development, Finance
 - Uganda ... Construction Industry Commission
 - Rwanda ... National Construction Council of Rwanda
- ... agencies established by Acts of Parliament
- Recommendations are framed under strategic thrusts.
- Targets and duration are set.



Possible obstacles to industry reform

Deficiencies in current reform programmes

- Not pan-industry, as sectoral divisions are strong in some countries.
- Not monitored, with appropriate feedback mechanisms.
- Not reviewed, fine-tuned or improved along the way
- Championing is often weak.
- New major programmes are not linked to existing initiatives which might require adjustment.
- No proper, or often, any closure; and no lessons learned are prepared.
- In developing countries, reliance on external funding. Possibility of bias towards current policy and economic orthodoxy, even if it is not in the country's interest.

What is the role of researchers?

- Sound conceptualization of construction industry, its capability, efficiency and effectiveness; industry reform.
- Need for continuous approach to construction industry development, to build on previous findings and proposals.
- Each reform strategy should build in next reform.
- Need for research on the most effective ways of studying industry-level matters.
- Action research – involving joint formulation of ideas continually on the project addressing practical issue facing the firm and results implemented.
- International collaboration would be most useful.
- Competitive building type graduate-study models.

What can researchers do?

- Report on 2nd revaluing construction conference, Courtney (2005) observed:
- “The conference was marked by a growing maturity in the analysis of the change initiatives, with a recognition that change programmes progressed through different stages and that their leaders needed to take strategic view of change, in order to ensure that initial impacts were made permanent. ... the conference pointed the way to an analysis framework for change programmes which would assist leaders and managers of reform programmes in maintaining the effectiveness of their programmes. The next conference might explicitly adopt such a framework in its programme.
- The CIB notes on its official website on revaluing construction:
- “Researchers can create exemplary cases, improve the measurement of benefits, redefine the economic models used, inform strategic debates... It can be hoped that as a result "society" will appreciate the excitement of construction, its multiple contributions, sheer scale, sense of aspiration, professionalism, sophistication and strong knowledge / skill base. However, the major focus of commitment and effort must come from within the industry itself.”

- **What do researchers want?**
- Assessment parameters for recognition, promotion and tenure might be disincentives, for research at the macro-level of the industry.
- Research evaluation criteria must give weight to impact of one's research, and contribution to society arising from it.
- **What do researchers need?**
- If construction industry is an important sector of the economy, then researchers on construction at macro-level are important assets of countries, and of society as a whole.
- Recent construction industry policies in a number of developing countries were prepared by consultants. In what way are they really national, or government programmes, and how really country-specific are they?
- Researchers on construction industry reform should contribute to change in mainstream knowledge.

Agenda for Industry Reform(?)

- Research agenda from “Conclusions and Recommendations” at CIB World Building Congress, 2007:
- “there is scope for further research... we highlight the following topics:
 - sustainable development in its whole range of ramifications, in particular, climate change, energy management and life-cycle assessment
 - design process, especially, cross-cultural studies on integrated design and its management
 - poverty alleviation and other societal issues relating to construction
 - development of small and medium-sized enterprises
 - skills and human resource development, including development of leadership, social contracting, and workers’ safety and health
 - integration among quality, environmental, health and safety issues and their management on construction projects
 - informal sector; features, capabilities, potential for integration with formal sector
 - knowledge management.”
- Relevance of industry reform.
- Need for agenda for industry reform?

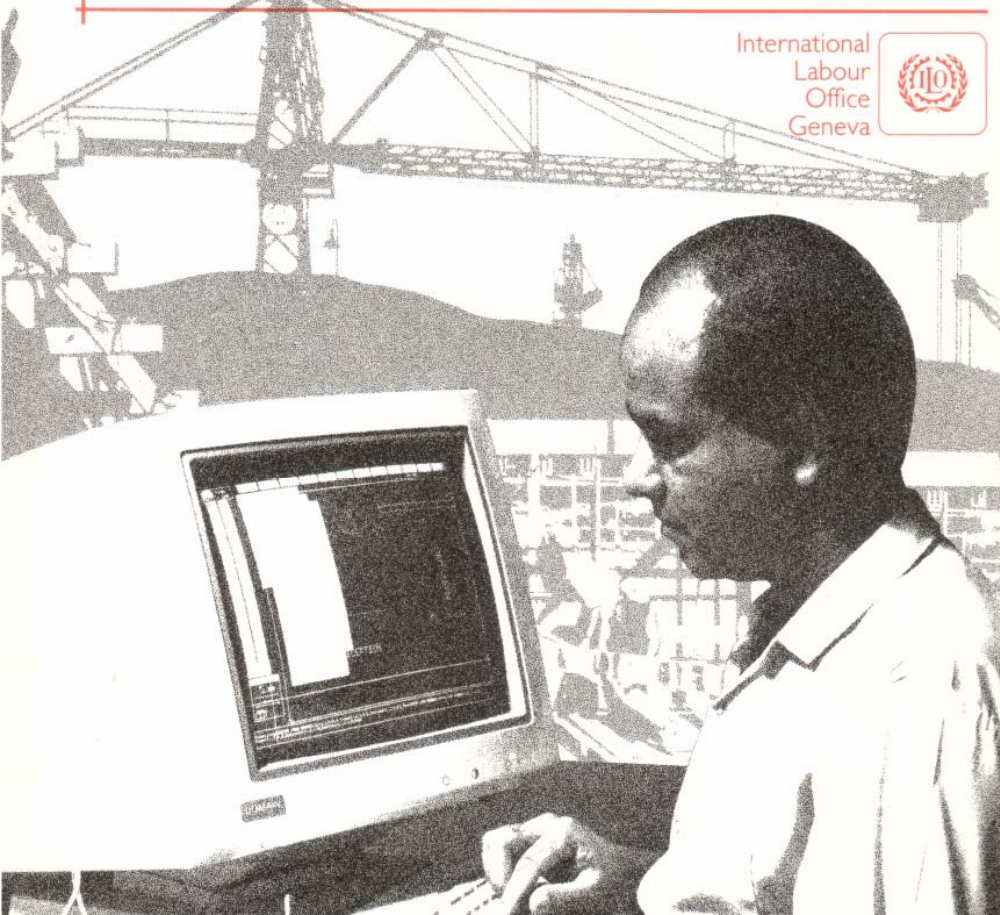
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BUILDING FOR TOMORROW: INTERNATIONAL EXPERIENCE IN CONSTRUCTION INDUSTRY DEVELOPMENT

Derek Miles and Richard Neale

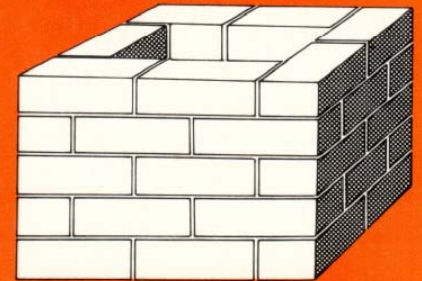
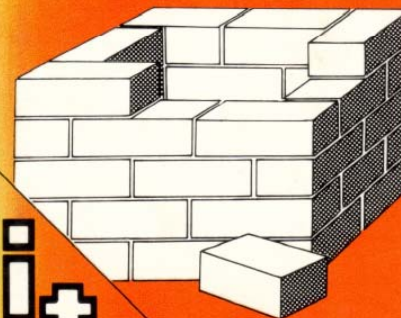
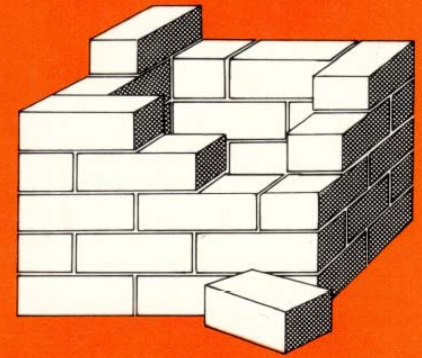
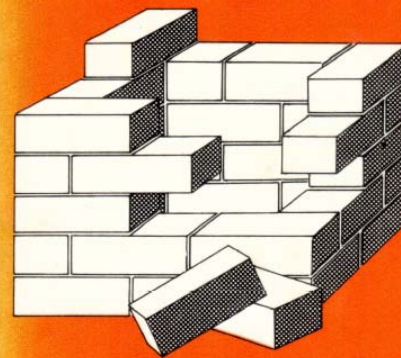
International
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Office
Geneva



FOUNDATIONS FOR CHANGE

G.A.Edmonds & D.W.J. Miles

Aspects of the construction
industry in developing countries



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End of presentation
Thank you for your attention

