

SlimBouwen® in Tanzania

Sustainable Innovative Construction through SlimBouwen and Construction Waste Materials Recycling

Subject

In Tanzania (TZ):

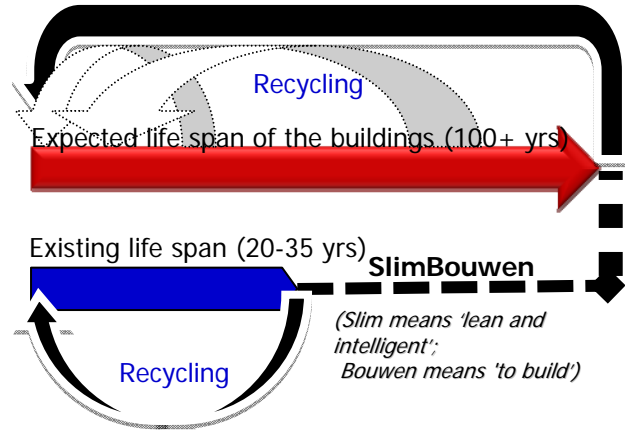
- ~10 million tonnes/yr of construction and demolition (C&D) waste produced annually
- population will triple 44m (2009) to 110 m (2050)
- in 2050, 75% of people will live in urban areas

Population growth increases: C&D waste, need of construction materials, etc

Disproportionate nature of demand to availability of building material resources will likely result in:

- depletion of natural resources
- conflict among users, etc

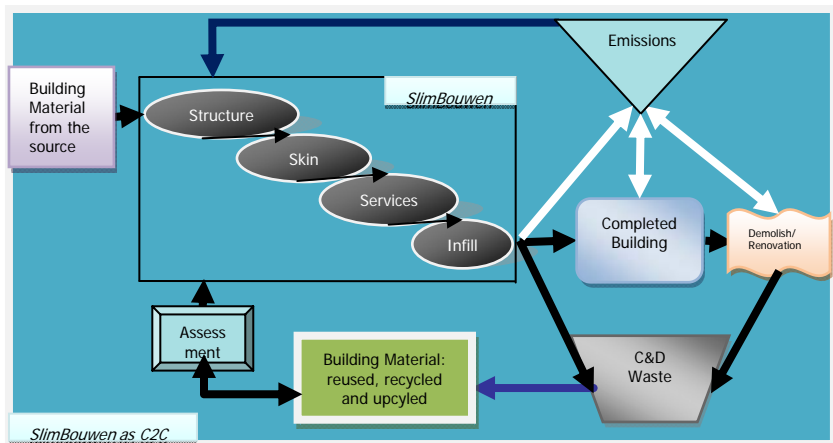
SlimBouwen based on recycling as innovative and sustainable building technology is required



Goal

Understand the opportunities and constraints in applying SlimBouwen (SB) & recycling in TZ:

- SB for sustainable const'ion in TZ
- recycle C&D into building blocks
- developed building blocks are laboratory-tested to conform stds
- assess blocks by sustainability tool



Expected Results

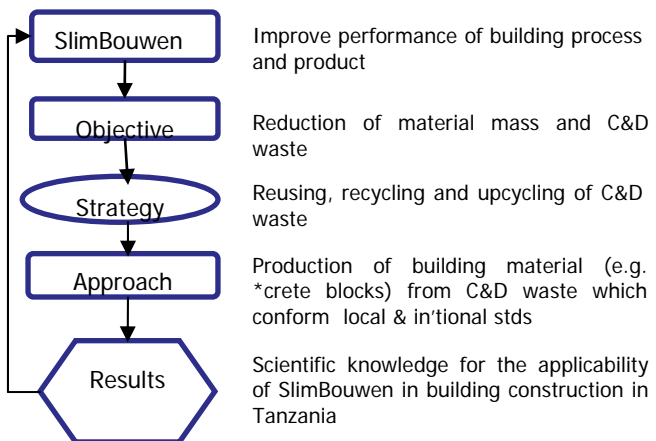
By applying SlimBouwen is capable to:

- reduce over-extraction of materials source
- reduce C&D waste by more than 50%
- increase the building service life time

Production of building blocks from recycled and upcycled C&D waste will:

- aid in increasing building material stock
- control effects of C&D waste disposal
- provide current solution for future demand

Thus, contributing to sustainable building construction industry through a cradle to cradle (C2C)



Slimbouwen® in Tanzania

Sustainable Innovative Construction through Slimbouwen and Construction Waste Materials Recycling: *Case of Tanzania*

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Subject

The Construction industry in Tanzania (TZ), faces a lot of challenges in terms of building material requirements as well as generation of construction and demolition (C&D) waste. This is also influenced by rapid population growth which is estimated to triple from 43.7 m in 2009 to 109.5 m in 2050. About 47% of presently used building materials are locally sourced: the rest is imported. The disproportionate nature of demands to the availability of building materials resources will result a decline of the natural resources and that could become a cause of conflict among users. The C&D waste generation is estimated at 10 million tonnes/yr. It is expected to increase with time. Instead of discarding and disposing C&D waste they can be reused and recycled to regenerate building materials.

Goals

Determine the proper technology which is capable of dealing with the decline of the stock of natural resources and the increase of C&D waste. Understand the opportunities and constraints in applying SlimBouwen and recycling in Tanzania

Research Question

What are the opportunities and constraints in applying SlimBouwen and recycling in Tanzania?

Strategy

Applying SlimBouwen as a best practice in The Netherlands, and reusing, recycling and upcycling C&D waste through generating building materials believed to reduce over-extraction of natural resources for future demand and at the same time control negative impacts that can be imposed by C&D wastes disposal

Expected Results

The expected results include the development of the SlimBouwen strategy for sustainable construction in Tanzania, the development of a proper technology on reusing and recycling C&D waste for production of building materials. Testing building materials blocks in the laboratory and assessment by using sustainable index will ensure quality. Finally, to produce a comprehensive PhD thesis that will contribute to increased C&D waste and understanding opportunities and constraints in applying SlimBouwen to solve some of the construction problems not only in Tanzania but other part of the World.

Preferred Partners Applications / Sponsors

Construction Industry, Environmental sector, Institutions/ NFP-NUFFIC

Prime Publication

Sabai, M.M., Lichtenberg, J. J.N., Egmond van, E. L.C, Mato, R.R and Cox, M.C.G.D., (2009), Accepted for conference proceeding (ISBN 978-979-17509-74), International Conference on Engineering, environment, Economic, Safety & Health, 26th -27th Oct. 2009, Manado Indonesia

Research Period

April 2009 - April 2013