

*The pilot VSBK kiln set up with technical collaboration from DA/TARA has crossed the one million mark and is a major step in Malawi's efforts to address deforestation, cater to improved housing demand and develop entrepreneurship . The added value has been the increasing employment of women in the entire process and the increased wages provided to the workers*

July 2015 was in a sense historical for Malawi. An attempt to address deforestation taking place due to brick production showed promising results. The efforts put in by Development Alternatives/ TARA for technology transfer from India to Malawi bore fruit as the number of bricks produced in the pilot kiln crossed the **one million mark** and began to be used in construction. The kiln was inaugurated in January this year.



This technology transfer took place under the aegis of the Knowledge Partnership Programme (KPP) supported by DFID in partnership with IPE Global.

#### Highlights of the technology transfer include:

1. Compared with traditional bricks, VSBK bricks:

\* Use **half the energy**

\* Are **twice as strong**

\* **Reduce deforestation** - avoid use of 30 tonnes fuelwood per 100,000 bricks (use 5 tonnes coal instead)

\* **Save 20-30% on construction costs** (per housing unit) due to lower volume of expensive mortar needed by higher quality bricks

2. **Demand is exceeding supply even in absence of marketing.** The market links made with local housing companies (e.g. 0.5 million bricks in one order) are absorbing the bricks.

3. **New jobs for women:** One third of 200 employees at the pilot kiln are women (path-breaking - women not employed in traditional construction industry) - earning monthly salary three times above average local wage (generally agricultural labour).

4. **Increased wage labour: Daily wage of 1,500 MKW** as compared to **MK 500-600** in traditional kilns.

5. **Strong policy engagement:** The Government of Malawi is actively promoting pilot and under the project, will develop policy measures to further incentivise production and use of VSBK technology.

6. Potential for **scale-up in Malawi** demonstrated: Scale of Malawi's urbanisation could support 1,000 kilns to meet construction demand.

7. Potential for **scale-up in region** demonstrated: Expressions of interest received from Nigeria, Kenya, Tanzania, Mozambique, Lesotho and Zambia. Already information has been shared and invitations to visit Malawi kiln issued.

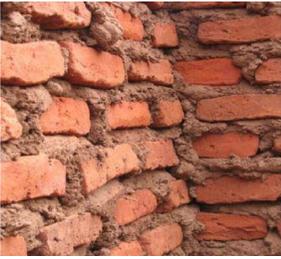
8. **Product diversification:** Concrete frames are being produced with support from DA/TARA.

9. **Sustainability:** Extensive troubleshooting by Indian experts has:

- \* Embedding good practice
- \* Addressed root causes of maintenance issues
- \* improved productivity (e.g. reducing breakage by two thirds)
- \* Addressed quality issues (e.g. ensuring that firing produces optimal colour - important for product to be locally accepted)

The pictures and data in the table below give an idea of the 'before' and after scenario

Parameters	Traditional Brick	VSBK Brick
<b>Fuel Consumption</b>	Wood: 30 Ton/100,000 Bricks 	Coal: 5 Ton/1000,000 Bricks 
<b>Firing Technology</b>	Open Clamp 	Kiln based Clamp 
<b>Specific Fuel Consumption</b>	Clamps: 1.5MJ/kg of fired bricks	VSBK: 0.7MJ/kg of fired bricks
<b>Quality of bricks</b>	Strength: 20 to 30 kg/cm <sup>2</sup>	Strength: 48 to 55 kg/cm <sup>2</sup>

<b>Wall quality</b>	With Local brick: 	With VSBK Brick 
<b>Socio-Economic Improvement</b>		
	<b>Traditional Malawi</b>	<b>At Eco-Bricks</b>
<b>Working Environment</b>		
<b>Type of work done by women</b>	Mainly agriculture 	All members of Eco-Crete Business unit are women 

The VSBK technology transfer to Malawi project is supported by DFID under the KPP in partnership with IPE Global. KPP is a South-South cooperation programme promoting knowledge sharing in the areas of Food Security, Resource Scarcity and Climate Change; Health and Disease Control; Trade and Investment; and Women and Girls. KPP is funded by the Government of UK's Department for International Development (DFID) and managed by a consortium led by IPE Global Private Limited under its Knowledge Initiative. The main objective of KPP is 'Gathering and uptake of evidence on issues central to India's national development that have potential for replication in LICs and impact on global poverty'.

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