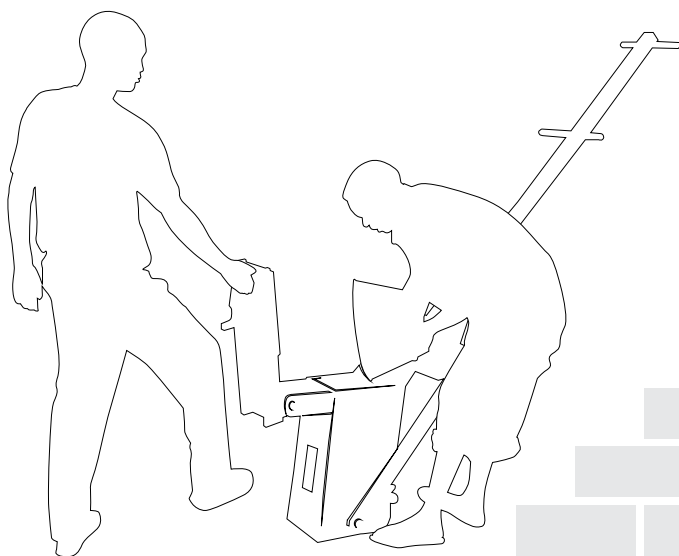


# Economic Benefits of **Stabilized Soil Block** **Technology** in Sudan



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## ACRONYMS AND ABBREVIATION

|            |                                                                      |
|------------|----------------------------------------------------------------------|
| BB         | Burned Brick                                                         |
| BMPTC      | Building Materials and Production Training Center                    |
| DDRR       | Disarmament Demobilization Rehabilitation and Reintegration          |
| DFID       | Department for International Development                             |
| GOS        | Government of Sudan                                                  |
| HRDF       | Housing Reconstruction and Development Fund                          |
| IDPs       | Internally Displaced Persons                                         |
| ILO        | International Labour Organization                                    |
| MPUD       | Ministry of Planning and Urban Development                           |
| NGOs       | Non-Governmental Organizations                                       |
| NHDF       | National Housing Development Fund                                    |
| PIU        | Project Implementation Unit                                          |
| PPP        | Public Private Partnership                                           |
| SDF        | Social Development Fund                                              |
| SGD        | Sudanese Pound                                                       |
| SSB        | Stabilized Soil Block                                                |
| TRI        | Technology Research Unit                                             |
| UNAMID     | African Union/United Nations Hybrid Operation in Darfur              |
| UNDP       | United Nations Development Programme                                 |
| UNEP       | United Nations Environment Programme                                 |
| UN-Habitat | United Nations Human Settlements Programme                           |
| UNHCR      | United Nations High Commission for Refugees                          |
| UNICEF     | United Nations Children's Fund                                       |
| UNOCHA     | United Nations Organization for Coordination of Humanitarian Affairs |

# Executive Summary



This assessment report presents the economic benefits of the use of the stabilized soil block technology in the Darfur and Khartoum states of the Republic of Sudan. The report recommends scaling up the use of the technology since it is a more environmentally friendly and affordable building practice than tradition technologies to be used in the reconstruction efforts of Sudan.

Sudan has a long history of war. A part of this history is the war in Darfur between the Government and its allied militia on one hand and, on the other, armed groups that have sprung up since 2003. The civil war between these two groups has resulted to tens of thousands people killed.

On 5 May 2006, the Government and the largest armed group, the Sudan Liberation Movement, signed the Darfur Peace Agreement. The deal marks the start of intense efforts to usher lasting peace to the region. In July 2011, a new Darfur Peace Agreement was signed between the Government and the Liberation and Justice Movement.

With these agreements some 300,000 households (average 5.6 persons per HH) still

thought to be displaced in Darfur are expected to return to their places of origin or integrate into already existing urban settlements. They all need to rebuild their homes.

Moreover, reconstruction of homes needs to be of superior quality to that which existed prior to the latest conflict. Past mistakes must be avoided. For example, past practices of large-scale felling of trees for firewood and making burnt bricks for homebuilding has resulted in massive deforestation of the country. Such destruction has given rise to the realization that alternative building methods are needed for Darfur. The region simply cannot afford to slash 16 million mature trees that would be needed for the reconstruction using traditional methods.

Therefore, the Government acknowledges the need for affordable “woodless” building technologies to support a sustainable return and reintegration of internally displaced persons in the state of Khartoum and the five that form the Darfur area. One such innovation is stabilized soil block technology (Box 1). This technology emerged in its present form approximately 60 years ago, evolving from unbaked earthen bricks. The technology has already proven its quality in South America and India. It is equally true for Sudan, where UN-Habitat has developed and integrated the technology into its programmes for rebuilding homes, schools, health facilities and other social infrastructure.

This economic assessment complements efforts of UN-Habitat and its partners to

scale up use of the technology in Darfur and Khartoum states, thereby supporting their recovery and sustainable urbanization.

Readily available, the stabilized soil block technology is cheaper and more environmentally friendly than the traditional building methods. Additionally, its production generates employment. All of these aspects can make the reintegration of the internally displaced persons easier; engender social cohesion; thereby laying the foundation for lasting peace and sustainable economic development of Darfur.

The economic assessment was conducted in cooperation with national institutions in Khartoum, and in Nyala, capital of Southern Darfur State. Additionally, stakeholders such as the United Nations Development Programme, the United Nations Office for the Coordination of Humanitarian Affairs, the World Food Programme, The Office of the United Nations High Commissioner for Refugees, the African Union - United Nations Mission in Darfur, etc. and targeted communities were consulted. The assessment reveals the following:

- Stabilized soil block technology is cost-effective and environmentally friendly
- Establishment of a Building Materials Production and Construction Training Centre stimulates employment and income generation
- Transfer of technology for local building material production can be achieved when there is an adequate local capacity and the means to sustain the proposed technology
- Establishing a Building Materials Production and Construction Training Centre will facilitate scaling up of the stabilized soil block technology by providing training to:
  - (a) Enhance housing construction, rehabilitation and upgrading of settlements and basic services for easier reintegration of internally displaced persons, ex-combatants and returnees.
  - (b) Facilitate expansion of environmentally friendly commercial production, marketing and application of affordable building materials.
  - (c) Support training of small-scale businesses and revolving funding mechanisms for commercialization of stabilized soil block technology.

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