Technology Transfer in Building Technology for Housing: Answering a Felt Need

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Abstract
Shelter comes in the second place, following the need for food, as a priority for human beings (Windapo et al, 2004). The shortage of adequate housing is prevalent in most countries over the world (Kateregga, 1983) like the situation in African countries where demand has always outstripped supply. The demand for housing is more critical in the main urban centers (Hammond, 1983) resulting in an extreme imbalance in the rural-urban population ratio (Tackle, 1983). In Africa, for instance, there was a rapid increase in the proportion of the world's urban population and `million-city' population between 1950 and 1990. Sudan isn’t an exception to the rapid urbanization which dominates the globe during the past decades. Khartoum, the capital city, has experienced high rates of growth in its urban population since the end of the last century. Wars, conflicts and escaping vulnerability contribute significantly to deepening the problems of urbanization; inadequate housing dominates the list.

There is a direct link between construction activities and human settlements development. The building materials constitute the single largest input to construction, accounting for 50 to 80 percent of its total value. Therefore, the supply of building materials is a key factor in the construction sector's response to the needs of human settlements (UNCHS, 1986). Accordingly, investigating the problems of building materials and component for housing might contribute to availing adequate housing. Building technologies and construction techniques are crucial in the context of exploring the building materials industry for housing.

International technology and knowledge flows (ITKFs) are employed as boosting mechanism for the development of industries and countries (Egmond, 2004). Therefore, the purpose of this
paper is to highlight the role that technology transfer and technology diffusion might play in developing the building materials industry in Sudan as a developing country. The focus of the paper will be on the technology transfer in the housing sector in the context of building technologies through innovative materials and construction techniques.

The authors relied on literature review to highlight the importance of technology transfer and innovation in developing the building industry with its formal and informal sectors. Three case studies are presented to draw an image of the application on technology transfer and diffusion of knowledge in housing in Sudan.

**Key Words:** Sudan, Housing, Building Materials, Technology Transfer, Building Technology