

# **SUSTAINABLE CEMENT REPLACEMENT IN CONCRETE AND MORTAR FOR EFFECTIVE LOW COST HOUSING DELIVERY**

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## **ABSTRACT**

Housing is the third most essential need of human beings after food and clothing. Affordable housing has become elusive to teaming populace of the world due to ever increasing cost of construction materials. Access to quality and affordable housing are indicators of economic growth of a country. Portland cement has been identified as the most widely and very expensive material used in building construction. The high demand for cement and its increasing cost is expected to be met by partial cement replacement. The search for alternative material for cement led to the investigation agricultural wastes as supplementary material for the binder. The study examined agricultural wastes that were used as partial cement replacement with a view to providing a sustainable and effective low low housing. The wastes considered are corn cob ash, corn husk ash, corn stalk ash, rice husk ash, sawdust ash, wood ash and neem seed husk ash. The chemical composition of the ashes were determine and their influence on the characteristics of cement, mortar and concrete produced were evaluated. It was concluded that proper handling of these agricultural wastes will aid green environment, reduction in construction cost and enhance sustainability.