

## **The Sustainable Innovation through indigenous, communal Designs, using locally produced raw natural fibre materials in South Africa-A value chain and integrated approach to community empowerment.**

***Thierry Alban Revert, Technology and Business Development Manager, ICOFE (International - Consortium Of Future Energies), Innovation through indigenous communal design using localized raw materials in South Africa.***

South Africa is now recognized as the cradle of human kind, the place where the journey of Man started.

The indigenous first nation are the Khoisan, known as bushmen in the West, the custodian of the original spirituality of the continent, are the inspiration behind the project of the 'Grow you House' project, dedicated to the intimate relationship of man with nature.

The hemp, a weed fiber plant, which gave birth to the expansion of civilization, after it was domesticated in China 6000 years ago, is the agricultural crop which cellulose component will enter the making of hemp concrete, together with lime, the binding composite.

The hemp cultivated by farming communities in the Western Cape, grouped in agro-ecology cooperatives as a rotational and annual crop, which will be a decorticated and processed in a peri-urban cooperative situated in the middle of a very populated township, hosting a local eco-housing project.

Hemp requires the users of the finished products, to harness the local value chain from the production of the seeds to the building of the housing schemes.

The project required a complex tissue of partnerships based on the PPP (Public Private Partnerships), which create the interface with community, municipality, provincial and national government and a team of designers – urban planners architects dedicated to the project.

The project aims at the hemp made building of low-cost housing in the various locations, and the erection of demonstration buildings, in the various regions

- A fibre technology center, hosting a traditional hand-made paper mill, to ensure its attractiveness
- A music center with an auditorium for the region's youth
- The national indigenous seed bank

These buildings, together with the erection of baseline housing structures to calculate the carbon sinkage potential of the project, will be designed to demonstrate the versatile, unique, isolating, ecological qualities of hemp construction.

The project is also linked to an alien vegetation eradication scheme to rehabilitate the local floral known as fynbos. Wood extracted from this project will be used a structural material in all buildings.

The whole exercise, despite of its hi-design component is also a CDM (Clean Development Mechanism) project, destined to generate Carbon Units to be traded on the world carbon finance markets, as per the Kyoto protocol regulations.

A specific methodology will be used to calculate the carbon unit of each element of the value chain: isolation materials, slabbing flooring, walking and design effectiveness, but also the impact of sustainable and integrated farming practices in the cultivation of industrial hemp.

The project claims to use communal and cooperative methodologies, which introduce the notion of sovereignty and dignity as a counter culture to intellectual property.

The objectives of the project are to enable local Artisans to create sustainable enterprises around the industrial hemp value chain, as well as their contribution to climate change, and global warming mitigation.

The African context of the project will affect all aspects of building and construction of the various structures of the project and will demonstrate that ecology, culture, economics and spirituality can be integrated in a social development multi-stakeholders project.

The creative designs, applied at all levels of the project roadmap, will be the innovation of a 'village' counter culture, to compensate the current trend of individuality, ego-centralism, competitiveness and instill a sense of humanity and togetherness in communities of various backgrounds.