

Harnessing Sugarcane Waste for Sustainable Farming

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Background

Sugarcane industry contributes \$2 billion to the Australian economy annually.

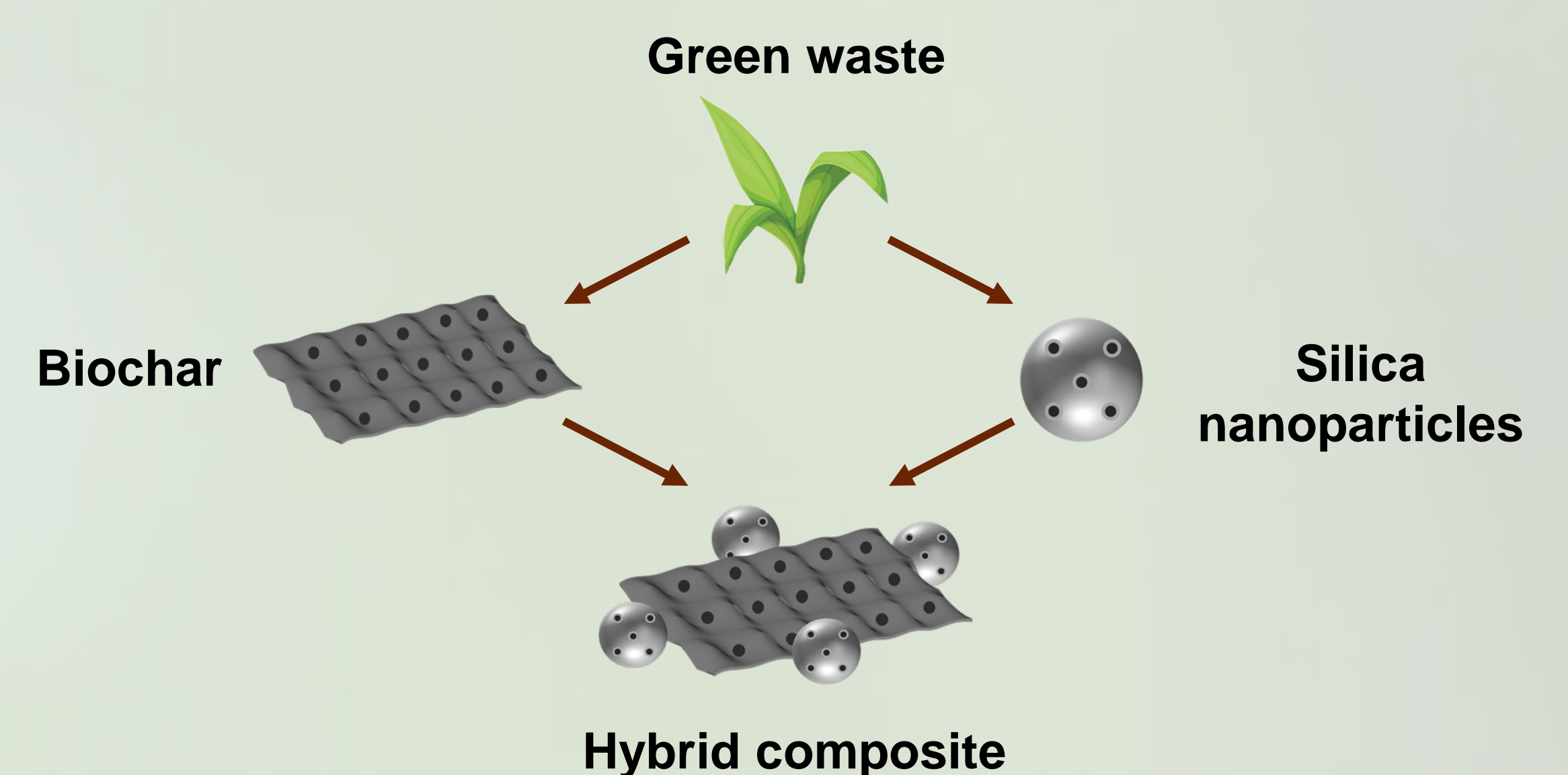
Present farming techniques are unsustainable for both the farmers and the environment:

1. Sugarcane soils are experiencing reduced soil fertility and availability of nutrients such as silicon.
2. Extensive use of nitrogen fertiliser has led to chemical leaching and threatens the great barrier reef.
3. Large volumes of green waste, primarily leaves, have to be burned which generates greenhouse gas emissions.

Research Approach

Our aim is to use this huge waste as a resource and transform it into a sustainable fertiliser product.

We will use sugarcane green leaves to synthesise biochar and silica nanoparticles and combine them into a functional hybrid for soil application.



Expected outcomes

This hybrid material will be an excellent source of carbon and silicon, both crucial for sugarcane crops.

It can be incorporated with fertilisers like urea for their effective and systematic delivery to crops.

It will serve as a circular tool for recycling sugarcane green waste.

It will help reduce leaching of harmful chemical fertilisers into the Great Barrier Reef.

