

An Indian-Australian research partnership

Project Title:

Sustainable design solutions for Agriculture practices
in India

Project Number

ID00687

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IDC

Research Academy Clusters:

Highlight which of the Academy's CLUSTERS this project will address?

(Please nominate **JUST one**. For more information, see www.iXXXXX.org)

1	Material Science/Engineering (including Nano, Metallurgy)
2	Energy, Green Chem, Chemistry, Catalysis, Reaction Eng
3	Math, CFD, Modelling, Manufacturing
4	CSE, IT, Optimisation, Data, Sensors, Systems, Signal Processing, Control
5	Earth Sciences and Civil Engineering (Geo, Water, Climate)
6	Bio, Stem Cells, Bio Chem, Pharma, Food
7	Semi-Conductors, Optics, Photonics, Networks, Telecomm, Power Eng
8	HSS, Design, Management

The research problem

Define the problem

India is in the top three producers for a variety of agricultural commodities such as fresh fruits, vegetables, milk, pulses, millets, and spices. Unfortunately, this, there always remains an opportunity to improve infrastructure and mechanization for primary agricultural tools. The adoption of technology and contemporary practices is inadequate due to the fragmentation of land size, high input costs, and poor education of farmers and farm help.

Project aims

Define the aims of the project

In response to these problems this project proposes to use a design intervention to investigate and create low cost and practical agricultural implements/ tools pertinent to the small land owner / farmer.

Expected outcomes

Highlight the expected outcomes of the project

This research will lead to the design and development of a set of tools and or machinery that will enable agricultural workers to improve their performance by embracing technology on one hand while maintain sustainable practices on the other hand. This will be demonstrated in prototypes and large scale deployment.

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.

These projects will address goals on the themes of (8) Design (primarily). In a supporting role, it will also demand a basic understanding of (1) Engineering, (2) Energy (3) Manufacturing and (8) HSS.

Capabilities and Degrees Required

List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.

A background in Industrial Design, preferably a Masters or high level Bachelor degree in accordance with the eligibility regulations. The candidate's portfolio should demonstrate adequate rigor and inclination towards problem identification and solution finding through research.

Potential Collaborators

Please visit the IITB website www.iitb.ac.in OR Monash Website www.monash.edu to highlight some potential collaborators that would be best suited for the area of research you are intending to float

- 1) Design Innovation Center
- 2) Ministry of Renewable Energy
- 3) Department of Science and Technology
- 4) Council of Scientific and Industrial Research

Select up to (4) keywords from the Academy's approved keyword list (available at www.iitbmonash.org) relating to this project to make it easier for the students to apply.

1. Participatory Design
 2. New product innovation
- Collaborative design