Project Title:	**Where does the shoe pinch – mapping the contours of child malnutrition to plan its elimination**

Project Number	**HSS0818**

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Research Clusters:

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

(Please nominate JUST one. For more information, see www.iitbmonash.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***

Research Themes:

Highlight which of the Academy's Theme(s) this project will address?

(Feel free to nominate more than one. For more information, see www.iitbmonash.org)

1	*Advanced computational engineering, simulation and manufacture*
2	*Infrastructure Engineering*
3	*Clean Energy*
4	*Water*
5	*Nanotechnology*
6	*Biotechnology and Stem Cell Research*
7	***Humanities and social sciences***
8	Design

The research problem

Define the problem

Child malnutrition remains a matter of concern in India. Thanks to the availability of reliable estimates of malnutrition levels at the district levels through NFHS-4, there has been a paradigm shift in the strategy to tackle the problem. The focus is now on district level planning and convergence for achieving the goal of malnutrition free district.

However, availability of data, its analysis and capacity at district level are problematic. There is a strong need to use GIS techniques to identify pockets of low and high levels of malnutrition and use of big data analytics to plan calibrated steps for its elimination – whether through convergence or standalone interventions.

This is important given the sheer regional diversity in India both in terms of the outcome i.e. the levels of child malnutrition as well as its correlates. What we need therefore is to develop a region specific and evidence based cook-book at the district level to develop a plan of action for eliminating child malnutrition.

Project aims

Define the aims of the project

i)   Carry out 'contour analysis' of the levels of child malnutrition at district ad sub-district levels
ii)   Use Data-analytics for looking at the absolute burden and correlates of malnutrition in locale specific terms
iii)   Use this to prioritise interventions – both in terms of convergence and in terms of individual interventions
iv)   Use area positive deviance approach to plan calibrated creation of malnutrition free enclaves

Expected outcomes

Highlight the expected outcomes of the project

i)   Development of district level capacities in data collection, analysis and developing customised action plan for rapid reduction in malnutrition
ii) Creation of expanding enclaves of malnutrition free regions
iii) Faster progress towards achieving relevant SGD goals.

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.

The project will achieve the goal of improving the levels of child nutritional status in its first3 years of life thereby contributing to better cognitive development and achieve relevant SDGs thereby.

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.

Strong background data analysis and GIS skills

Exposure to rural development and actual immersion experience

Familiarity with the problem of child malnutrition in India and some of its causes and consequences

Select up to **(4)** keywords from the Academy's approved keyword list **(available at http://www.iitbmonash.org/becoming-a-research-supervisor/)** relating to this project to make it easier for the students to apply.

Child malnutrition, local context, spatial analysis, quantitative approach/GIS skills