

# Grand Challenges - Karnataka

## Channelizing Innovations for Social Impact

### A KBITS-IKP Program

## CALL 4 - Nutrition Delivery, April 10 to May 31, 2017

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### Introduction

Over the past few years, the startup ecosystem in Karnataka has blossomed into a force to reckon with. Bengaluru is among the top global cities in terms of attracting talent and capital. This startup ecosystem offers great potential for innovation to solve local issues not only around Bengaluru, but also for Karnataka as a whole.

Grand Challenges - Karnataka is an initiative of the Government of Karnataka, under the newly launched Start-up Policy, 2015-2020 of the government, to scout for new technologies or innovations that can offer solutions to some of the longstanding issues pertaining to the state of Karnataka. Grand Challenges, Karnataka aims to channelize innovations for social impact, and in the process support the establishment and growth of start-ups.

Grand Challenges around five well defined priority questions are planned in the first phase. Phase I was launched on August 8, 2016 with the announcement of Call 1 around real time monitoring of quality of water. Call 2 was launched on October 1, 2016 catering to the needs of the agriculture sector where innovators were required to come up with a technology solution for early detection of crop diseases and pest infestation. Call 3 was launched on November 28, 2016 seeking technologies to ensure effective delivery of primary health services through meaningful, transparent and democratic engagement of communities.

The program is supported by the Karnataka Biotechnology and Information Technology Services (KBITS) as the funding agency and IKP Knowledge Park (IKP) as the implementation partner.

### Grand Challenge- 4

Grand Challenges Karnataka Call 4 focuses on addressing challenges in Undernutrition and Calorie-Protein Micronutrient deficiency in Karnataka. Innovative projects that have the potential for adaptation will be identified through two phases, the Testing Phase and the Scale-up Phase. The selected proposals will be funded, monitored and nurtured over an eighteen-month period (6 months for the Testing Phase and 12 months for the Scale-up Phase) through this program.

Undernutrition and Calorie-Protein-Micronutrient deficiency is a critical problem affecting at least 50% of our population, across all genders and age groups.





As per the National Family Health Survey 2015-16 (NFHS-4) Factsheets, only 8.2% of the children in Karnataka and 9.6% of children across India in the age group 6-23 months receive an adequate diet<sup>1</sup>.

Prevalence of anaemia across genders and age can be correlated to the high maternal morbidity and mortality and high incidence of low birth weight and perinatal mortality. Foetal Undernutrition as well as Undernutrition and stunting of infants below 3 years impedes brain development, and leads to poor cognitive and physical development of a child with long-lasting harmful consequences, including diminished mental ability and learning capacity, poor school performance in childhood, and lesser earning capacity as an adult.

Undernutrition, stunting and micronutrient deficiency cause reduced immunity, making the malnourished further susceptible to infections and disease. For example, deficiency in Vitamin D is strongly correlated to Tuberculosis disease progression.

Select Indicators from NHFS-4 2015-16	KA State			India		
	Urban	Rural	Total	Urban	Rural	Total
<i>All figures in (%)</i>						
Total children age 6-23 months receiving an adequate diet	10.9	6.3	8.2	11.6	8.8	9.6
Children under 5 years who are stunted (height-for-age)	32.6	38.5	36.2	31	41.2	38.4
Children under 5 years who are wasted (weight-for-height)	24.8	26.9	26.1	20	21.5	21
Children under 5 years who are severely wasted (weight-for-height)	9.7	11	10.5	7.5	7.4	7.5
Children under 5 years who are underweight (weight-for-age)	31.5	37.7	35.2	29.1	38.3	35.7
Women whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m <sup>2</sup> )	16.2	24.3	20.7	15.5	26.7	22.9
Men whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m <sup>2</sup> )	14.2	18.4	16.5	15.3	23	20.2
Women who are overweight or obese (BMI ≥ 25.0 kg/m <sup>2</sup> )	31.8	16.6	23.3	31.3	15	20.7
Men who are overweight or obese (BMI ≥ 25.0 kg/m <sup>2</sup> )	28.6	17.1	22.1	26.3	14.3	18.6
Children age 6-59 months who are anaemic (<11.0 g/dl)	57.2	63.4	60.9	55.9	59.4	58.4
Non-pregnant women age 15-49 years who are anaemic (<12.0 g/dl)	43	46.1	44.8	50.9	54.3	53.1
Pregnant women age 15-49 years who are anaemic (<11.0 g/dl)	39.6	48.7	45.4	45.7	52.1	50.3
All women age 15-49 years who are anaemic (%)	43	46.2	44.8	50.8	54.2	53

<sup>1</sup>National Family Health Survey 2015-16 (NFHS-4) Factsheets (<https://nrhm-mis.nic.in/SitePages/NFHS.aspx>)



## Challenge Statement

There is a vacuum in the Indian market for affordable nutrient rich food that appeal to all for all age groups and genders at the Bottom of the Pyramid. Evidence reveals that the poor are forced to purchase expensive food products when they are faced with a serious health emergency or acute malnutrition that is life threatening, sometimes spending an entire week's wage.

Even the population above the poverty line suffers from Undernutrition and micronutrient deficiency. It is estimated that at least 20% of the population above the poverty line also suffers from macro and micronutrient deficiency, which may be attributed to a lack of availability of products within an affordable price range.

Efforts are needed to produce and popularize low cost, energy dense and nutrition rich dietary-supplements delivered through innovative interventions for both children, adolescents and adults. As part of the Karnataka Grand Challenges initiative, KBITS aims to propel innovations in the area of effective delivery of low cost energy dense and nutrition rich dietary-supplements. The interventions could include innovative processes, methods, tools, devices, techniques, procedures and service delivery models for production and popularization of low cost energy dense and nutrition rich dietary-supplements.

The challenge therefore seeks **innovative interventions aimed at tackling Undernutrition and Calorie-Protein-Micronutrient Deficiencies in children, adolescents and adults, for testing and scaling up in Karnataka.**

The innovator should take care of the following aspects in each phase.

Phase 1 (INR 10 Lakh per candidate for 6 months):

The intervention should involve

- 1) One or more dietary-supplements tackling undernutrition and calorie-protein-micronutrient deficiencies
  - Can be a new product or an existing product
  - Could either be meant for specific age groups or for the entire population
  - The product(s) should meet the regulatory guidelines for field testing and deployment
  - Acceptability studies should be conducted in at least 2 blocks of Karnataka, with a total sample size of 100 (at least 35 samples in each test site)
  - Nutritional content of the product(s) tested in a validated 3rd party test centre
- 2) Development of a smart ICT based solution for awareness, popularization, deployment and monitoring of access and uptake of the product

Phase 2 (INR 50 Lakh per candidate for 12 months):

The intervention(s) will be selected for Phase 2, based on

- 1) The results of the acceptability test and nutritional content study in Phase 1
- 2) Plan for scale up in Phase 2 which should include (but need not be limited to)
  - Manufacturing plan: Setting up of a unit/outsourcing/local manufacturing
  - Innovative marketing solutions and information dissemination



- Supply chain for delivery and sale of the product
- Nutrition Monitoring plan

*Please note that the solution should not rely on government procurement for sustainability.*

## Funding

The support provided under the Call will be catalytic to enable the applicant to test and scale up select innovation and/or innovative solutions in the target locations across Karnataka. The funding will happen in two stages and the award agreement will be structured as a **grant-in-aid**.

**Phase I:** In the first stage, if selected, up to **five** innovators will be eligible for testing the proposed solution for funding of up to INR 10 Lakh for a period of six months. In Phase I, the innovators must test their dietary-supplement for acceptability and propose a plan for measuring nutritional impact. The period of the study and dissemination of the results is part of the six months allocated to Phase I.

**Phase II:** After six months, **one** of the candidates from Phase I will be selected for a further funding of up to INR 50 Lakh for a period of 12 months to deploy and measure impact.

The program will not only provide funds but also work with the awardees for the duration of their project and beyond to ensure project implementation and bring to the awardees the deep collective experience of mentors, resources and network. Through this KBITS-supported program, IKP, and other partners will help the winning candidates with access to networks and marketing channels to commercialize their innovations.

The support provided under the Call will be catalytic to enable the applicant to prototype and pilot select innovation and/or innovative solutions in the target areas.

## Eligibility, Selection Criteria and Application Process

### Who can apply?

This Call for Proposals is open to anyone from any discipline in India - from individuals, researchers and faculty in colleges/ universities/government laboratories/ institutions to start-ups, and not for profit organizations.

On selection for Phase II, the awardee is expected to incorporate a start-up registered in the state of Karnataka and defined as a Start-up as per the Start-up Policy, 2015-2020, Govt. of Karnataka.

The Call will be open for applying from Apr 10, 2017 until 11:59 PM, May 31, 2017 (IST) on the program website [www.impact-karnataka.org](http://www.impact-karnataka.org).

### Selection Criteria:

Proposals will be selected based on the following criteria:



- 1. Alignment with the mandate of the Call** - Is the proposed solution fulfilling the parameters listed above.
- 2. Potential impact** - What is the envisaged scale of impact of your innovative solution?
- 3. Feasibility** - Is the proposed solution technologically viable?
- 4. Sustainability** - Has the applicant thought about a business model surrounding the innovation?
- 5. Accessibility** - How easy is for the end consumer to afford / access the product?
- 6. Novelty** - What is the novel innovation used by the applicant?
- 7. Execution capacity** - Team Strength and capabilities

### Application Process:

Applicants will register on the program website, fill an online form at [www.impact-karnataka.org](http://www.impact-karnataka.org), and submit a ten-page description of the innovative solution (including diagrams, figures and references) - the working concept, proposal for testing and adaptation, a short term strategy (for the award duration) and long term direction.

**Only online submissions will be accepted.** Please do not email any application.

The online form on the program website [www.impact-karnataka.org](http://www.impact-karnataka.org) consists of the following.

#### Applicant Information

Name:

Email:

Address:

City:

State:

Country:

Phone:

Organization Name:

Organization Website:

Project Title:

Please answer the following questions in the text boxes give on the program website.

1. Please share a brief description of your proposed solution and explain why it is unique. Why will it be acceptable across a wide population and what parameters will be measured to demonstrate acceptability? (1000 characters)
2. What is the current stage of product development? How do you plan to make the product ready at the end of Phase I? (1000 characters)
3. How do you plan to utilize the funding of INR 10 Lakh? Where and how do you plan to test your solution for Phase I using this funding? (1000 characters)
4. What is the unit cost of production and what is the expected cost to customer? (1000 characters)



5. What is the promised nutrition content and the evidence to validate the same? (1000 characters)
6. How are you uniquely qualified to implement the proposal? (1000 characters)
7. Provide details of your team and resources available to you to pursue this challenge (1000 characters)?

Additionally, you will be able to upload a project related document. Please share any additional relevant information regarding your solution in this document. Please limit the four-page document to four pages, Font size 12pt, and restrict your attachment size to 5 Mb. This is to help you upload any diagrams, images, tables, flowcharts etc that cannot be expressed in the questions asked above.

1. Proposed solution
2. Prior work in related area (if any, with data)
3. Project plan which includes development and testing plan, and deployment (Phase I – 6 months & Phase II – 12 months)
4. Budget plan for the project and other sources of funding and final costing of the system
5. Human resources involved and potential/identified collaborators in the participating country
6. Business plan (long term)

#### **Team Details**

Up to 3 resumes of the team members can be uploaded. If there are more than 3 team members, the resumes can be combined into a single file and uploaded.

#### **Submission**

Please submit your application on [www.impact-karnataka.org](http://www.impact-karnataka.org) by May 31, 2017. Only online applications will be accepted.

#### **Terms and Conditions**

Awardees will be bound by the terms and conditions of this initiative. In awarding grants to innovators in furtherance of the objectives stated above, the Parties will ensure that:

- (a) The knowledge and information arising out of or in connection with such awards be promptly and broadly disseminated.
- (b) The products, services, processes, technologies, materials, software, data or other innovations arising out of or in connection with such awards be made available and accessible at an affordable price to people most in need within India and the developing world.
- (c) Karnataka government will have a royalty free access to the innovation for manufacturing and use within the state of Karnataka.



(d) The recipient agrees to submit, periodic reports to IKP and KBITS along with details of the financial utilization of the grant.

(e) KBITS reserves the right to reject all or any of the proposals without assigning any reason whatsoever.

*For clarifications please email us at **[impact-karnataka@ikpknowledgepark.com](mailto:impact-karnataka@ikpknowledgepark.com)** or call us on **+91 95700 61382**.*