

61. PLATFORM INTEGRATING IOT (INTERNET OF THINGS) & ARTIFICIAL INTELLIGENCE FOR TRACKING NUTRITION & HEALTH

ACTION AREA	UNIVERSAL FOOD ACCESS TO BUILD RESILIENCE
SOLUTION CLUSTER	PANDEMIC-RESILIENT FOOD SYSTEMS
THEMATIC AREA	PANDEMIC-RESILIENT FOOD SYSTEMS
SUBMITTED BY	UDYOGYANTRA, PRIVATE INDIAN COMPANY

WHAT IS THE RISK, SHOCK, STRESS THAT THE SOLUTION IS TRYING TO ADDRESS?

The social and economically vulnerable sections of the society, when under stress or shocks like Covid, economic downturn, natural events like Tsunami etc. , get dependent of government / social food programs for their food security and nutrition needs. The risk, shock and stress when applied to public / government food systems makes them further vulnerable to corruption, pilferage etc.

HOW DOES THE SOLUTION IMPROVE OR ENHANCE RESILIENCE OF FOOD SYSTEMS?

Approximately 3 billion people, who cannot afford the right nutrition for themselves are dependent on Government / United Nations / Socially driven food systems. E.g. The Mid-day Meal Scheme is a school meal program of the Government of India designed to better the nutritional standing of school-age children nationwide. The program supplies free lunches on working days for children serving 120,000,000 children. Problem is that most of the monitoring of such schemes is manual and hence prone to system level inconsistencies in delivery which puts millions of human lives on malnutrition related health risks.

Our Artificial Intelligence and Internet of Things powered solution can ensure governments and UN can in real time, track, control and record large scale distributed implementation of food subsidy schemes resulting in every \$ spent reaching the intended recipient without pilferage, tampering of quality and quantity. The solution is much needed digitization and AI enablement of public food systems.

Demo : <https://www.youtube.com/watch?v=vj-Qo7E8rkI>

IS THE SOLUTION RELEVANT TO BUILDING FOOD SYSTEMS RESILIENCE?

Anticipate shocks/risks/stress and/or reduce vulnerability, Manage risks, Prevent (reduce exposure), Absorb, respond/cope

IN WHAT REALMS OF INTERVENTION IS THE SOLUTION DESIGNED TO ACT ON RESILIENCE?

Community, Institutional

WHO ARE THE MAIN ACTORS THAT WOULD PUT THIS ACTION INTO PLACE?

Policymakers (government), Civil (NGOs, etc.)

WHAT IS THE POLITICAL SUPPORT FOR THIS IDEA? DOES THE IDEA HAVE ANY MEMBER STATES OR POLITICAL INTERESTS? ARE THERE ANY STAKEHOLDERS WORKING ON IT?

Working with few companies in India in the area of child nutrition and health

<https://www.hindustantimes.com/india-news/ai-device-to-monitor-quality-of-mid-day-meals-developed-by-iim-startup/story-40xvnknmUpQaOLJEorIQ3H.html>

IS THE SOLUTION APPLICABLE AT GLOBAL LEVEL, OR SPECIFIC CONTEXTS & PARTICULAR COUNTRIES?

Yes. Applicable at global level. It tracks and controls the effectiveness of any public food distribution system by bringing in authentication of quality & quantity to make such systems effective and fool proof.

WHAT ARE THE KEY ACTIONS REQUIRED TO ADDRESS THIS SOLUTION?

Implementing last mile technology infra and processes to ensure public food systems are digitized.

ARE THERE ANY FINANCIAL SOURCES / FUNDS THAT IS SUPPORTING THIS IDEA?

Prototype is ready. Next phase need funds to do few medium scale pilots with few government food systems organizations.

HOW DOES THIS SOLUTION CONTRIBUTE TO (A) EMPOWER WOMEN AND COMBAT GENDER INEQUALITIES, AND (B) THE FULFILMENT OF HUMAN RIGHTS, ESPECIALLY THE RIGHT TO FOOD AND THE RIGHT TO WATER, (C) MAKE USE OF INNOVATIONS (TECHNOLOGIES, INSTITUTIONS, PROCESSES)?

- a) About 67.5 percent of children under 5 years and 69% of adolescent girls suffer from anaemia due to iron and folic acid deficiency. Women health in formative years is critically dependent on food and nutrition and this solution ensures the money spend in public and UN food systems reaches in the intended recipient women sections.
- b) The Mid-day Meal Scheme is a school meal programme of the Government of India designed to better the nutritional standing of school-age children nationwide. The programme supplies free lunches on working days for children serving 120,000,000 children. In 2019, globally 17.3 million school children received meals from World Food Program in 59 countries. Problem is that most of the monitoring of such schemes is manual and hence prone to system level inconsistencies in delivery which puts millions of human lives on malnutrition related health risks. Our Artificial Intelligence and Internet of Things powered solution can ensure governments and UN can in real time, track, control and record large scale distributed implementation of food subsidy schemes resulting in every \$ spent reaching the intended recipient without pilferage, tampering of quality and quantity. Demo Video : <https://www.youtube.com/watch?v=vj-Qo7E8rkI>
- c) UdyogYantra has developed a Food Nutrition Monitoring (design and technology patent pending) IoT Device powered by AI to digitize, authenticate, and monitor in real time the food being served to children at last mile. AI identifies the food contents, its nutritional value, AI facial recognition identifies the child, predicts health trends based on the nutritional intake and calculates BMI. BMI

can be used to screen for weight categories that may lead to health problems like obesity, or growth retardation in children due to lack of nutrition.