

Smartbakery – An Innovative School-based bakery to enhance consumption of micronutrient enriched foods in school children of rural Nepal

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Background

- Most low and middle income countries are now experiencing triple burden of malnutrition. Malnutrition in all of its forms is a major cause of morbidity and mortality in developing as well as developed countries.
- Although school health and nutrition is a high priority in Nepal, evidence on nutritional status and morbidity of school children is scarce¹. Only a small proportion of school children are expected to consume the recommended daily intake (RDI) of macro and micronutrients in public schools.
- Schools in remote rural areas in particular generally lack sufficient capacity, financial resources and infrastructure to support effective school feeding programs, increasingly leading children to turn to processed packaged snacks instead of healthy meals.

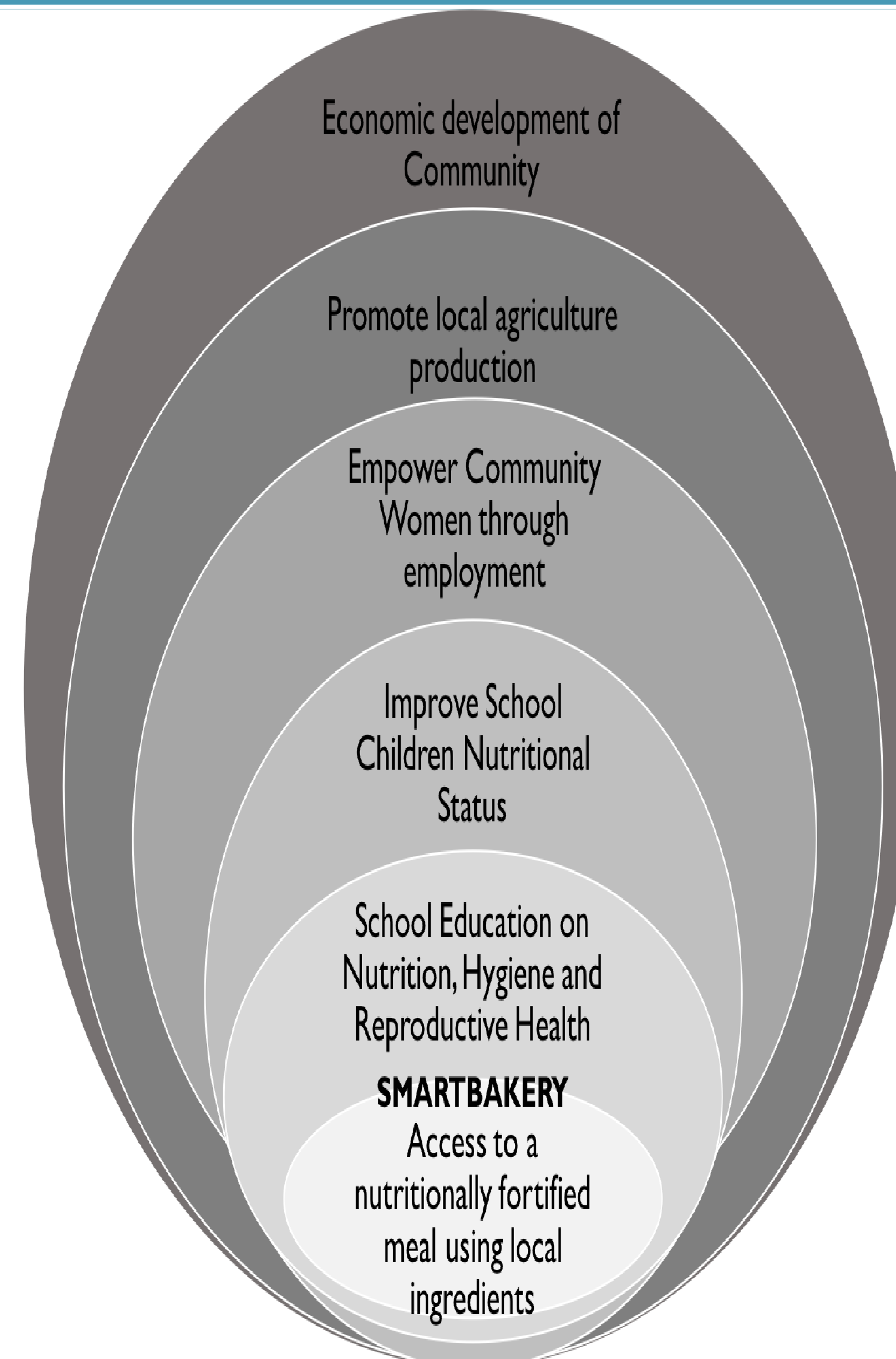
Objective

- A social entrepreneurship project using a public-private market based model entitled “*Smartbakery: Improving nutrition, school attendance and school performance through a community supported school-based bakery*” is being implemented in rural Manthali Village of Ramechhap district.
- The project is implementing an integrated package of nutrition-sensitive interventions, such as a women-led school bakery to foster women empowerment, classroom nutrition and WASH education.
- It also provides nutrition-specific interventions such as, flour fortification and supplementation.
- The goal is to build an enabling environment through community-led group, *Smartketi*, (meaning smart women in Nepali), who are champion social entrepreneurs.
- A pilot study has been designed with the objectives to:
 - i) generate evidence on nutrition profile, nutritional and health status of school age children (5-17 years) in Nepal,
 - ii) generate evidence on effectiveness public-private market based model to sustainably improve nutritional status, school education, women empowerment, social and economic development of the community.

Our Solution

smartbakery

Project Model



Study Design and Methods

- The planned study will be conducted by the Feed the Future Innovation Lab for Nutrition, Tufts University in Manthali VDC of Ramechhap district in 2019.
- Data will be collected at the levels of school, children between (5-17) years and their households.
- A range of indicators will be used to examine nutrition profile, nutritional status, and economic feasibility at baseline, and a 2-year follow-up. Within the pilot study, Manthali higher secondary school will be assigned to the intervention arm, while another public school will be studied as a ‘control’ arm with no interventions.
- A set of food consumption survey (FCS), 24hr and 7 day-dietary recall, and nutritional and health KAP survey will be administered to the school children and their caregivers.
- Anthropometric assessment and hemoglobin measurements will be done.
- The data generated will complement the process and impact evaluation of the *Smartbakery* project.
- The evidence generated (by January 2020) from this study will supplement to the nutrition profile of adolescent and school children in Nepal. This will also inform cost-effectiveness and economic feasibility of micronutrient fortification and supplementation in school-lunch feeding programs. The evidence will further support national level policies and program decisions on integrated multi-sectoral (including private sector) programming in nutrition, health and agriculture.

Innovation Award

- In March 2018, the *Smartbakery* was awarded as the best innovation idea at the inaugural Tufts University Entrepreneurship competition in Boston, USA.



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References

1. Erismann S, Shrestha A, Diagbouga A, Grolld J, Herz R, Sharma S, Schindler C, Odermatt P, Drescher A, Yang R, Utzinger J, Cisse G. Complementary school garden, nutrition, water, sanitation and hygiene interventions to improve children's nutrition and health status in Burkina Faso and Nepal: a study protocol. *BMC Public Health* (2016) 16:244. DOI: 10.1186/s12889-01602910-7