

News Release**Innovative CIDA funded MI project in Nepal
wins Development Marketplace Award**

For Immediate Release

May 28, 2007

Ottawa – The Micronutrient Initiative has won a World Bank Development Marketplace Award for a project that helps village millers in rural Nepal add essential vitamins and minerals to the cereal flour they produce. The addition of key nutrients is helping to improve the health and productivity of rural Nepalese by decreasing iron deficiency anemia – a widespread public health problem. In Nepal 78% of children under five and three-quarters of pregnant women are anemic. Anemia impedes child growth and learning and it decreases physical productivity. It also contributes to approximately 60,000 deaths during childbirth around the world each year.

The simple, first-of-its kind flour fortification device was introduced to small traditional watermills in the Lalitpur district of Nepal. The device, which does not require electricity or significant additional workload, automatically adds correct doses of iron, folic acid, and vitamin A to grains being milled. Powered solely by gravity, the device was developed and pilot tested by the Micronutrient Initiative Nepal office with funding support from the Government of Canada through the Canadian International Development Agency (CIDA).

The Development Marketplace award of \$191,905 will fund the first two years of the expansion project, which will be implemented in co-operation with local NGO Imagine Lalitpur. This expansion will extend the benefits to 22,000 rural villagers through 100 mills. One of only 22 projects selected out of 2,900 applicants, this project ranked within the top 1% of proposals received in order to qualify for the funding. The Development Marketplace is an international competition organized by the World Bank and funded jointly by the World Bank and The Bill and Melinda Gates Foundation.

http://web.worldbank.org/WBSITE/EXTERNAL/OPPORTUNITIES/GRANTS/DEVMARKETPLACE/0,,menuPK:180652~pagePK:180657~piPK:180651~theSitePK:205098_00.html

This sustainable project does not require changes in the local diet and does not alter the production capacities or processes of the small scale mills. The ongoing cost of the vitamin and mineral premix is just over half a dollar per person consuming the flour each year. Since the new fortification device is simple to use and does not require electricity, the Micronutrient Initiative plans to adapt it for use in additional countries to the benefit of many more rural populations.

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“The Micronutrient Initiative thanks CIDA and the Development Marketplace for supporting this breakthrough technology,” says Micronutrient Initiative President Venkatesh Mannar. “With this award it will be possible to bring the proven health benefits of cereal flour fortification to rural and hard to reach villages in Nepal. It builds momentum to replicate the project in several countries throughout Africa and Asia where people urgently need essential vitamins and minerals.”

The Micronutrient Initiative (MI) is an international not-for-profit organization that works to ensure the poor – especially women and children – in developing countries get the vitamins and minerals they need to survive and lead productive lives. Passionate about developing and implementing solutions for hidden hunger, we work in partnership with governments, the private sector and civil society organizations to address this serious problem that affects one third of the world’s population. Governed by an international Board of Directors, MI works in Asia, Africa, Latin America and the Middle East and reaches people in over 70 countries. With headquarters in Ottawa, MI maintains regional offices in New Delhi and Johannesburg that manage our country offices in Asia and Africa. For more information please visit www.micronutrient.org.

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Visuals available: (1) Traditional rural watermill; (2) Watermill with fortification device; (3) Diagram of fortification device; (4) National Program Manager receiving Development Marketplace award; (5) National Program Manager presenting at Development Marketplace booth.



THE SHORT ROUTE TO BETTER NUTRITION IN RURAL NEPAL

New Technology to Fortify Cereal Flour at Village Mills (DM Proposal 1541)

The World Bank has identified food fortification as one of the “short routes” to improved nutrition and health. A majority of Nepalese suffer from iron deficiency anemia (IDA) due to poor traditional diets. Most rural Nepalese do not have access to fortified flours that could help prevent IDA. Using new and locally developed technology that will fortify flours with essential vitamins and minerals at the village level, the Micronutrient Initiative (MI) will improve health and physical productivity in rural Nepal.

Challenges

- Iron deficiency is one of the most **widespread nutritional deficiencies** in the world
- IDA leads to more than 60,000 women dying each year during childbirth
- IDA **impedes child growth and learning** ability
- IDA **decreases productivity** in both men and women
- **An important way to provide iron is through the fortification of staple foods.** Fortified flours are usually produced by large centralized mills. However, rural populations do not have access to this. They consume the grains they have grown and milled at the village level.

Concept Summary

Rural Nepalese mill their own grains, such as maize. The cereal flour is consumed as a staple food. The project supplies small village millers in selected regions of rural Nepal with:

- A **new fortification device** developed in Nepal to work specifically with small, traditional village mills, without electricity
- **Micronutrient premix**, containing iron, folic acid and vitamin A, to add to cereal grains as they are milled through this device
- **Training** and support to incorporate the technology and fortify flour at the village level
- A **communications campaign** to inform villagers of the health benefits of using fortified flour
- Monitoring and evaluation

Expected Results

The project will reach 22,000 people in 4,000 rural households in Nepal, with particular benefit to children, adolescent girls, women of child bearing age and men involved in physical labour. Eating foods fortified with iron and other essential micronutrients will improve the growth, survival, learning outcomes and labour productivity of the villagers. Community ownership of a locally developed and manufactured technology will help ensure sustainability. Experience gained through this project will be used to **rapidly replicate the concept among small millers across Asia, Africa, and Latin America benefiting millions of rural impoverished families.**

Innovation

New technology using gravitational force – The new microfeeder fortification device was developed specifically for the small mills used in rural Nepal to add micronutrients to flour. It is the **first of its kind**. It was designed and manufactured in Nepal. The simple technology is low maintenance. Unlike devices that have been piloted elsewhere, it operates using gravitational force. It requires **no electricity** or significant effort by the millers. In addition, the mixing proportion of the premix and cereal grains is automatically synchronized for consistency.

New Delivery Method for the hard to reach – Locally grown grains become a vehicle to deliver essential vitamins and minerals to rural and hard-to-reach villagers and improve their overall health and productivity.

New Financing Method – Rather than being paid in cash, millers receive a portion of the grains to be milled. MI's research shows that **in-kind payment systems** also work for the small additional cost of fortifying the flour and that this amount is acceptable to villagers.

New opportunities for very small mills – Very small mills will begin producing fortified flours that were previously exclusively produced by large millers. Food can thus be fortified close to consumption.

Evaluation

The effectiveness of the project will be evaluated as follows:

- **baseline and follow-up surveys** to measure the impact of the project in reducing IDA
- the amount of premix distributed to millers
- estimated amount of grains milled and fortified
- the iron content in the fortified flour produced

Sustainability and Growth

• The Nepalese partner organization, Imagine Lalitpur (IL) is working with MI to implement a pilot small-scale fortification project in one village in the Lalitpur district of Nepal. With IL as a partner and with World Bank funding, MI proposes to replicate the fortification program in 10 more villages and assess its impact and sustainability.

• **Initial donation of equipment and premix will allow millers to deposit fees collected during the first year of fortification into a revolving fund** to be managed by IL. The fund will then be used to purchase premix supplies for subsequent years.

• Phase-I lasts 2 years and would be supported by DM2007. During subsequent phases administrative costs will be covered by contributions from MI and through local fundraising by IL. This process will ensure fortification activities for at least 7 years.

• This **simple technology and methodology developed in Nepal can easily be adapted** to benefit rural and hard-to-reach populations in many developing countries. MI's experience with small millers throughout Asia, Africa and Latin America indicates significant potential for adaptation and expansion in other regions.

The World Bank & Nutrition

In its 2006 publication titled *Repositioning Nutrition as Central to Development*, The World Bank identified improved nutrition as a key factor for successful development. Specifically food fortification was identified as one of the "short routes" to improved nutrition. MI's simple, cost effective and locally manufactured technology, powered solely by gravitational force, will bring the proven benefits of food fortification to rural populations – first in Nepal and then in many other developing countries.

The Micronutrient Initiative (MI) has been working since 1992 to ensure the poor – especially women and children – in developing countries get the vitamins and minerals they need to survive and lead productive lives. Governed by an international Board of Directors, MI works in Asia, Africa, Latin America and the Middle East and reaches people in over 70 countries.



Many of the people who are most deficient in essential vitamins and minerals – such as iron – do not have access to commercially produced fortified foods. Like the Nepalese villager above, they mill their own locally grown grains at small traditional mills.

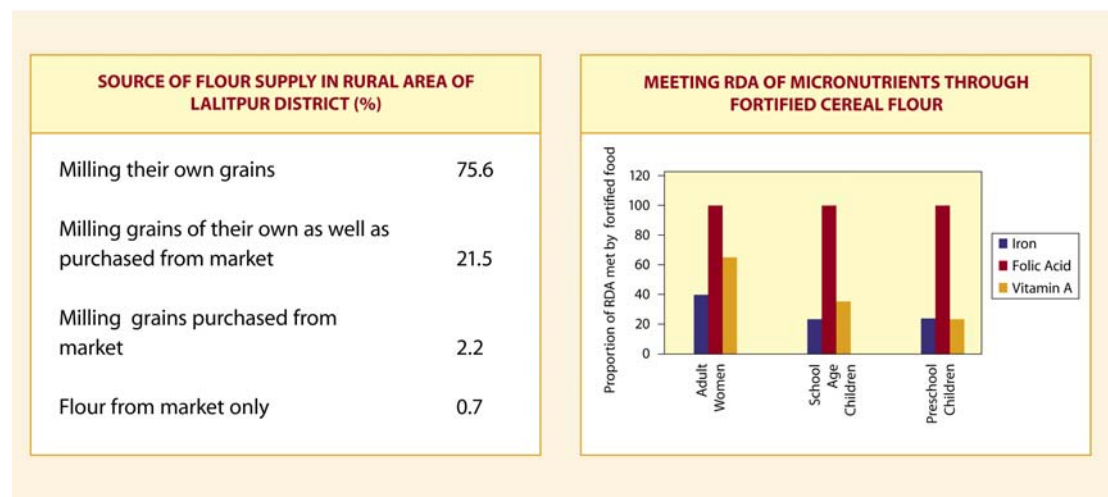
New Technology for Flour Fortification in Rural Nepal

A Major Public Health Problem: Iron Deficiency Anemia in Nepal

- Iron deficiency anemia impedes child growth and learning ability and decreases labour productivity
- The Nepal Micronutrient Status Survey (NMSS) conducted in 1998 revealed that nearly 67% of women and 78% of children under five were anemic
- Anemia is one of the most serious public health problems in Nepal.

A Solution Based on Innovative and Practical Technology

Flour fortification has proven effective in delivering a significant portion of the daily recommended allowance (RDA) for iron and other essential micronutrients. However, few rural villagers in Nepal have access to commercially processed and fortified flours. This is because they mill their own grains at small, traditional village mills. **No suitable technology was available to fortify flour produced at these small mills – until now .**



Benefits of the New Small Scale Flour Fortification Technology

The first of its kind, the new technology developed for use at mills in rural Nepal:

- Is simple and requires little monitoring and maintenance
- Automates the dose of micronutrient premix to ensure consistency and even mixing
- Works for grains of all sizes and shapes, from maize to millet
- Does not require electricity or significant extra physical labour and can therefore be adapted for use in many rural areas beyond Nepal.

Budget and Financial Viability

- The total budget for the proposal is USD \$191,905 and the project is expected to reach 22,000 people in rural Nepal.
- After the project period, the main cost to continue fortification would be for the micronutrient premix. This costs just USD \$0.50 per person per year and the price is not prohibitive for the villagers, who have already begun paying this cost in the pilot project.

