



Iodising Salt and Fortifying Flour: The Best Investment for Viet Nam's National Economic Development

Protecting the growth and development of today's children is the key to fuelling tomorrow's economic and social development. But, reports from national medical and research institutions indicate Viet Nam's next generation of young people may not achieve their full intellectual and productive potential, simply because the food they eat does not contain enough essential vitamins and minerals.

Micronutrient deficiencies take an enormous health and economic toll on Viet Nam

Health and Cognitive Impacts

- 30% of children less than 5 years of age suffer iron deficiency anaemia, a condition widely associated with cognitive retardation and poorer school achievement.¹
- More than half of all births are to mothers suffering iodine deficiency – preventing full brain growth in the womb and mental development as infants.² Cognitive test scores among children born to iodine deficient mothers are up to 14% lower than their peers.³

- March of Dimes estimates that 20 pregnancies per 10,000 births in Viet Nam are affected by brain or spinal cord defects (i.e. neural tube defects). Countries that fortify flour with folic acid often report a neural tube defect prevalence of less than 10 per 10,000 births.⁴
- 27.8% of Viet Nam's population is at risk of inadequate zinc intake.⁵ Zinc is needed for optimal child health, physical growth and normal pregnancy outcomes. If the probability of inadequate zinc intake is greater than 25%, it is considered an elevated public health concern, according to the World Health Organisation.

Economic Impacts

- Delayed intellectual development and poorer school achievement associated with iodine and iron deficiency in childhood is linked to lifetime earning deficits of 3-4% as adults.
- 10 year losses from iron deficiency anaemia alone have been estimated at \$1.7 billion.⁶

1 Viet Nam General Nutrition Survey, NIN 2009-2011

2 IDD Survey, Hospital of Endocrinology, 2009

3 Anderson et al, Global Iodine Status in 2011 and Trends over the Past Decade, Journal of Nutrition 2012

4 Calculated from March of Dimes Global Report on Birth Defects 2006

5 Assessment of the risk of zinc deficiency in populations and options for its control, by Food and Nutrition Bulletin, pp. S163-S186, International Nutrition Foundation for the United Nations University. IZ Group, 2004.

6 Profiles Economic Analysis, MOH, MPI, GSO, 2006.

Salt iodisation and flour fortification are feasible and affordable for Viet Nam

Increasing half the nation's mothers and children's intake of folic acid, iodine, iron and zinc is a huge task, beyond the capacity of the local health system. But adding small amounts of these nutrients during processing, the drive for salt iodisation and flour fortification can take advantage of the food distribution and market system to deliver safe, effective doses to protect all consumers on a daily basis.

- Producers of flour and salt in Viet Nam have the capacity to safely add these nutrients.
- The cost of fortification is tiny, with a typical price increase of just a fraction of 1%⁷.
- There is no change to the taste, colour, food quality or consumer behaviour.

7 Hospital of Endocrinology and UNICEF field trip observations at local markets in Viet Nam

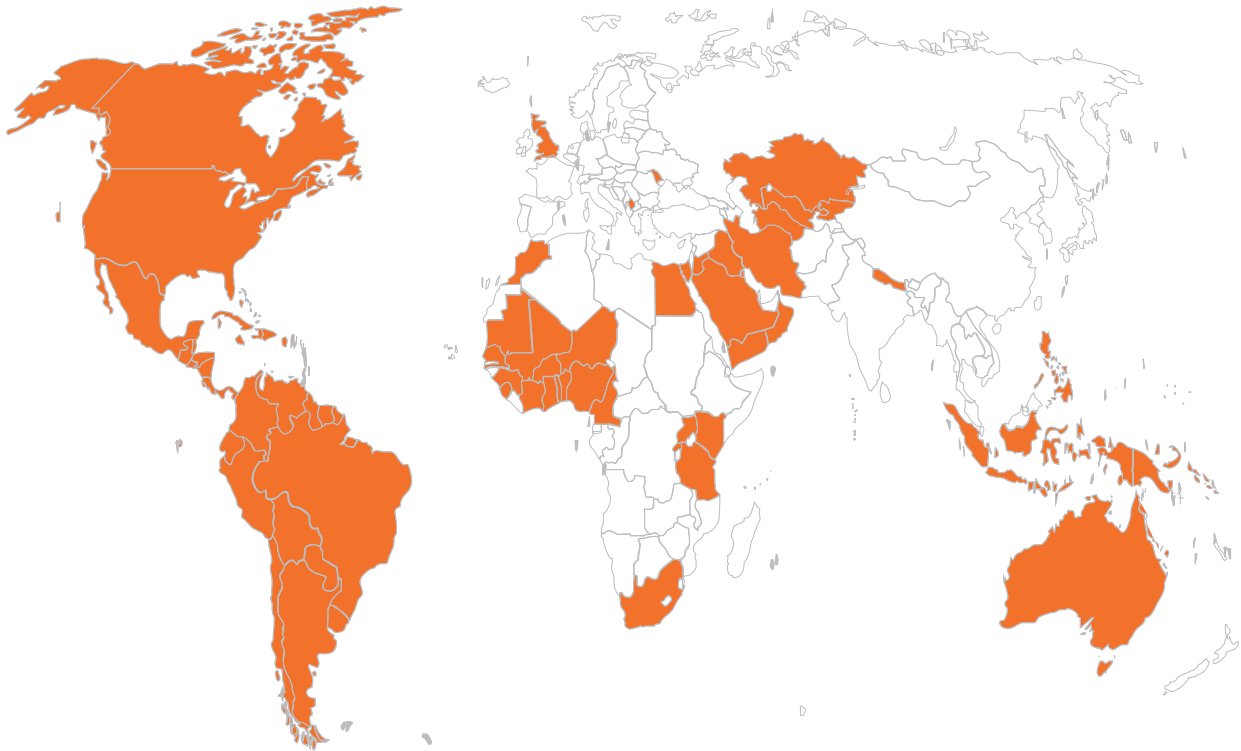
Iodising salt and fortifying flour has a huge return on investment in benefiting families and the entire nation

Evidence consistently shows that the mandatory fortification of salt and wheat flour leads to lower rates of iodine, iron deficiency and neural tube defects. The resulting improved childhood development, better school performance, higher adult earnings and averted healthcare expenditure, also illustrate the potentially high economic returns. For each dollar invested in salt iodisation or flour fortification, the returns are as high as \$30.⁸ According to the World Bank, "No other technology available today offers as large an opportunity to improve lives and accelerate development at such low cost and in such a short time."

8 Scaling Up Nutrition, What Will it Cost? World Bank, 2010.



Viet Nam Should Join the 75 Countries with Mandatory Flour Fortification



In 75 countries, every loaf of bread and pack of noodles is fortified by law to protect consumers from iron deficiency, neural tube defects and other micronutrient deficiencies. In 2010, Viet Nam established a voluntary standard for flour fortified with iron, zinc, folic acid and other vitamins. But like other countries with voluntary standards, only a very small proportion of flour products are fortified and low coverage means low public health impacts. The National Institute of Nutrition called this a “very limited response from the milling sector... disappointing.”⁹

In contrast, countries with mandatory fortification have experienced significant benefits. Effectiveness studies in China, Fiji, Iran, Oman and Venezuela have all demonstrated improvements in iron status that may be reasonably attributable to flour fortification.¹⁰ In Chile and South Africa, death and disability from folic acid-related birth defects were cut in half.¹¹

Within the framework of Viet Nam’s Food Law of 2011, all the supporting pieces for mandatory flour fortification in Viet Nam are in place, with WHO guidelines defining nutrients and levels appropriate to Viet Nam’s flour consumption habits. Further support is provided by a study in Vinh Phuc that demonstrated the effectiveness of noodles made with fortified flour in reducing iron deficiency anaemia.¹² Meanwhile, surveys by milling experts have illustrated how Viet Nam’s 19 flour mills could easily adapt fortification technology into their milling processes.

Consumption of wheat flour products is increasing in Viet Nam, particularly in the form of instant noodles. The added VND2-3 cost for a pack of instant noodles made with fortified flour is invisible – but for a child 3-5 years of age, that package of noodles will provide an added 35-70% of daily iron needs. The benefits to Vietnamese society will be priceless.

9 Flour Fortification Position Paper, National Institute of Nutrition, 2009

10 FFI review of published effectiveness studies (draft), 2012

11 Blencowe et al. Folic acid to reduce neonatal mortality from neural tube disorders. *International Journal of Epidemiology*, 2010

12 Ninh Nguyen Xuan, Effects of Fortified Foods on the Nutritional Status of Reproductive Age Women, NIN.

Viet Nam Should Join the 100 Countries with Mandatory Salt Iodisation



Countries with mandatory salt iodisation have achieved about twice the coverage of households using adequately iodised salt compared to countries with voluntary regulations – and many have virtually eliminated iodine deficiency. Just a few years ago, Viet Nam was one of those countries displaying remarkable progress.

In 1999, mandatory national regulations were issued and the salt industry responded positively. Quality iodised salt reached more than 90% of households by 2005. For consumers, iodised salt was accepted and affordable. And population surveys found the “brain drain” of iodine deficiency had been eliminated.

However, progress was lost during the transition to the free-market. The procurement of imported potassium iodate remained centralised within the Ministry of Health, with a budget now sufficient to cover only

16% of the nation’s needs. More importantly, a revised decree in 2005 on the production of iodised salt failed to uphold the mandatory iodisation requirement and salt producers felt no obligation to continue iodisation. Today, less than half of households consume adequately iodised salt and population surveys found 77% of pregnant women with iodine deficiency.¹³

With no regulations in place to protect iodisation, the “brain drain” has returned. It is time to stem the re-emergence of iodine deficiency in Viet Nam. Just as iodine deficiency was eliminated by 2005, it can be eliminated again by 2014. All that is needed is the re-establishment of mandatory legislation and enforcement systems for salt iodisation and transfer of responsibility for purchasing potassium iodate to the salt industry.

¹³ Hospital of Endocrinology, 2009 IDD survey sub-sample survey in Dong Thap.



Viet Nam's New Food Law Enables Mandatory Salt Iodisation and Flour Fortification

With the rapid expansion of modern food industries and consumer markets, Viet Nam's Food Law of 2011 provides an up-to-date legal framework to capitalise on the potential of food fortification to provide nutrition protection. In harmony with international norms and conventions, Viet Nam's Food Law of 2011 explicitly allows mandatory fortification foods to reduce the burden of micronutrient deficiencies that threaten public health.

- World Trade Organisation: Article 20 of the WTO General Agreement on Tariffs and Trade states that governments may pass mandates to protect human, animal or plant life or health, provided they are transparent and do not discriminate. Mandatory fortification is not a barrier to trade.

- World Health Organisation & Food and Agricultural Organisation: WHO/FAO Guidelines on Food Fortification with Micronutrients states "mandatory fortification is more suited to cases of serious public health need or risk," and "voluntary fortification is less likely than mandatory fortification to deliver a guaranteed favourable outcome."

Mandatory fortification of flour and salt is legally enabled by the 2011 Food Law, consistent with international trade obligations and represents one of the most attainable, high-impact investments we can make in our nation's social and economic development. It is a commitment to ensuring our children achieve their full potential as students, workers, parents and citizens.



About Alive & Thrive

Alive & Thrive (A&T) is a 6-year initiative (2009-2014) to improve infant and young child nutrition by increasing rates of exclusive breastfeeding and improving complementary feeding practices.

For more information please visit our website: <http://www.aliveandthrive.org>



About ICCIDD

The International Council for Control of Iodine Deficiency Disorders (ICCIDD) Global Network is one of the member NGOs of the Partnership for Maternal, Newborn and Child Health Global Forum. We strive to ensure that every pregnant, lactating and child-bearing age woman, as well as every child, has access to optimal iodine to allow full realisation of their individual mental and physical development potential across the globe.

For more information please visit our website: <http://www.iccidd.org>



About FFI

The Flour Fortification Initiative (FFI) is a partnership that encourages country leaders to fortify industrially milled cereal grains. Working with public, private, and civic sector individuals and organizations, FFI offers advocacy and technical assistance at every step of the process. The steps begin with determining a population's nutritional needs and continue through training millers and monitoring the programme's effectiveness.

For more information please visit our website: <http://www.ffinetwork.org>



About UNICEF

UNICEF works in more than 190 countries and territories to help children survive and thrive, from early childhood through adolescence. The world's largest provider of vaccines for developing countries, UNICEF supports child health and nutrition, good water and sanitation, quality basic education for all boys and girls, and the protection of children from violence, exploitation, and AIDS. UNICEF is funded entirely by the voluntary contributions of individuals, businesses, foundations and governments.

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