

ASIA: REGIONAL ACTIONS

Strategic Priorities for Controlling Anemia

J.M. Hunt ADB Manila

Atlanta Meeting 9 May 2001

Main Regional Activities

- Multiple micronutrient supplement trials
- ILSI-MI Iron fortification effectiveness studies (condiments) in China and Vietnam
- UNICEF: APC Strategy for CARK
- ADB: regional fortification strategy (6)
- ADB: salt and flour fortification in Central Asia/Caucasus (7)
- ADB: iron/zinc enrichment of rice seed (4)

Supplementation Trials

- Bangladesh, Indonesia, ?
- carried out with and without controls
- results not yet available
- uncertain on how findings will be communicated
- regional consensus on next steps for programs needed

Iron Fortification Trials

- Soy Sauce (China)
- Fish Sauce (Vietnam)
- very encouraging results
- research linked to national nutrition policies and strategies
- next steps include further effectiveness studies and plans for national production

Studies on NaFeEDTA fortified soy sauce in China

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Projects completed

- **Current situation of soy sauce production and consumption in China;**
- **Production of food grade NaFeEDTA;**
- **Development of technology for the production of NaFeEDTA fortified soy sauce;**
- **Iron absorption studies of NaFeEDTA fortified soy sauce in human subjects;**
- **Toxicological tests of NaFeEDTA;**
- **Therapeutic effects of NaFeEDTA fortified soy sauce in anemic school children;**
- **A large effectiveness study in areas with high prevalence of iron deficiency anemia.**

Cost

Increased cost of NaFeEDTA fortified soy sauce for one plant^a

Fortificant	7.23 USD/kg NaFeEDTA	0.02675 USD/kg soy sauce
Equipment^b	12,000 USD/plant	0.0012 USD/kg soy sauce
Lab analysis	0.07 USD/ton soy sauce	0.0001 USD/kg soy sauce
Total cost		0.028 USD/kg soy sauce (0.031 USD/L soy sauce)

- a. Assuming that 3.7 g NaFeEDTA (500 mg Fe) will be added to 1 kg soy sauce.
b. Assuming that the cost will be recovered in 10 years and the average annual output of soy sauce is 1,000 tons.

Results

Hemoglobin levels in IDA students treated by NaFeEDTA fortified soy sauce

Groups	N	Before (g/l)	1 month (g/l)	2 months (g/l)	3 months (g/l)
Control	81	116.9±5.5	117.9±6.3	118.6±5.3	118.5±4.7
Low Fe	82	115.4±5.1	117.2± 8.5	128.4±7.0 ^a	135.7±8.5 ^a
High Fe	77	116.1±5.1	124.0±10.6 ^a	131.6±11.6 ^a	140.0±9.5 ^a

a, compared with the control group, p<0.01

Future works

- To work out **proper regulation and standards** for the control of Fe fortified soy sauce with government regulatory agencies and industry associations.
- To **increase gradually the number of soy sauce facilities** manufacturing iron fortified soy sauce; and
- To launch **education programs** on food fortification, with special emphasis on iron fortification.

Fish sauce fortification in Vietnam

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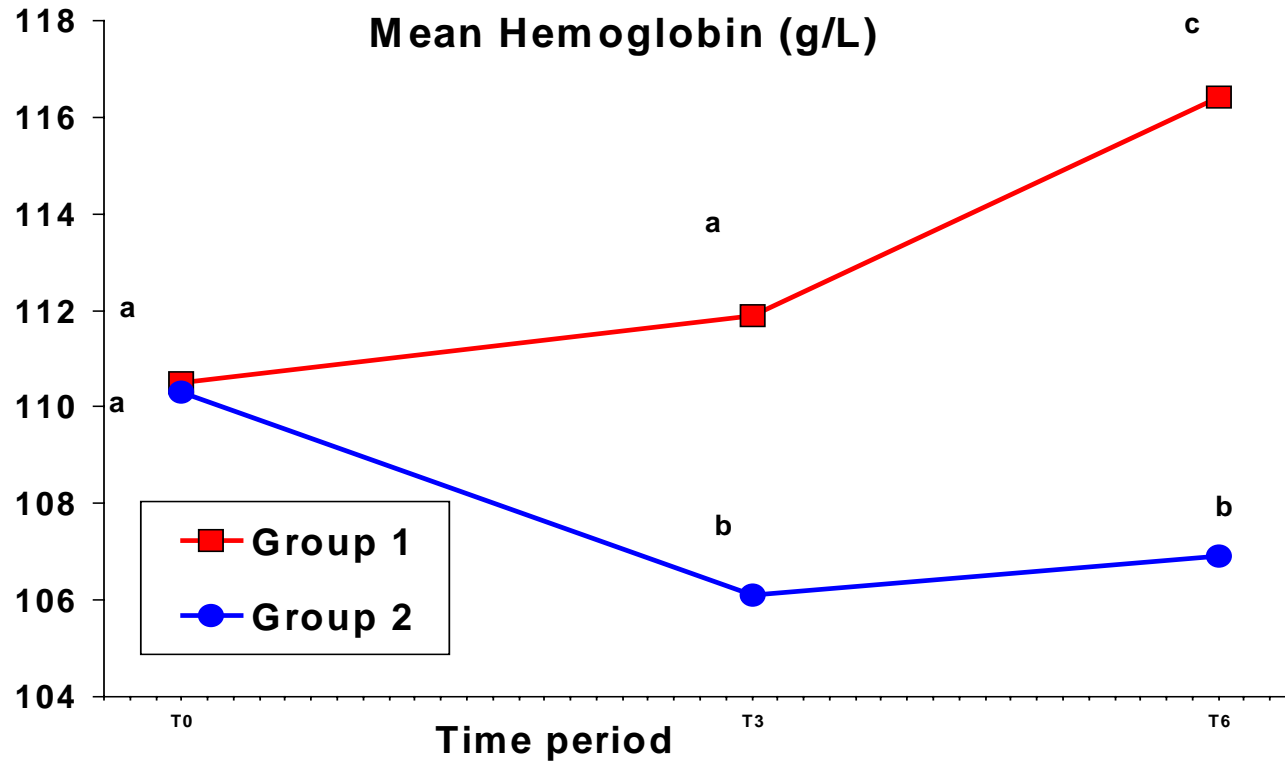
General objective of VIETNAM national plan of action for food fortification

- Food fortification will be a key approach to eliminate micronutrient deficiencies in Vietnam in the years to come.
- Goal: by the year 2010 all people can access affordable fortified foods which safely and effectively provide 30% of micronutrient requirement.

OBJECTIVE

To evaluate the efficacy of fortified fish sauce with 10 mg iron (as NaFeEDTA) per person per day (6 days per week) on iron status in 17-49 year old non-pregnant women.

Mean Hb concentration after 6 month - consumption of iron fortified fishsauce



Next Steps for the Region?

- MI-ILSI plans to expand condiment fortification to other countries?
- Can China and Vietnam help?

UNICEF's APC CARK Aims

- 1997-2010: three phases
- (i) Advocacy and Research
- (ii) Oblast-level interventions(integrated)
- Strategic review completed
- (iii) National expansion: Suppl/FF/M&E
- Key challenges: **training** network; supplementation compliance non-pregnant women; **flour fortification**: pilot testing and expansion

ADB-ILSI-DANIDA

REGIONAL PARTNERSHIP
IN FORTIFYING STAPLES

REGIONAL PARTNERS

- INDIA
- INDONESIA
- PAKISTAN
- PEOPLE'S REPUBLIC OF CHINA
- THAILAND
- VIETNAM

Regional Themes in Creating 6 Market-Based Solutions

1. **Public Sector as Regulator and Enabler**

◆ Strengthen 3 Capacities

- Regulatory policy and standard setting
- Conduct epidemiological surveillance and monitoring of the food sector
- Establishment of quality assurance systems for food safety

2. **Assessment and Dissemination of Food Fortification Technology**

- ◆ Focus on essential staples the poor consume: salt, flour, oil, complementary foods for infants

Continuation of 6 Regional Themes

3. Demand Creation for the poor

- ◆ Pro-poor communication

4. Supporting Child Development through Health and Industrial Policies

- ◆ expansion of affordable complementary foods and the public health role in education on proper infant feeding.

Continuation of 6 Regional Themes

5. Public Policies that Promote Competitiveness and affordability of Fortified Food Products.

- ◆ Price and trade policies
- ◆ Agro-industrial research

6. Create Country Investment Plans with Defined Public and Private roles.

Implementation Arrangements

Country Investment Plans

- ◆ Country Research Team
- ◆ Inter-agency Steering Committee
- ◆ Intensive stakeholder dialogue process
- ◆ Preparing Work-Plan/Inception Meeting
- ◆ Review and Approval
- ◆ Investors' Primer
- ◆ Investment Roundtable: 2002

Regional Dialogue

1. Completion of Universal Salt Iodization Agenda (Beijing, PRC) - October 2000
2. Inception Meeting at ADB Headquarters (Manila, Philippines) - July 2001
3. Workshops on **Flour and Cooking Oil Fortification** (New Delhi, India) - 2001
4. Workshop on **Complementary Foods Technology** and Infant Feeding Practices (ILSI, Singapore) - 2001
5. Regional dialogue on **food regulation, trade and surveillance** – Thailand (Institute of Nutrition, Mahidol University) - 2001
- 6 . **Investors' Roundtable** (ADB Annual Meeting) Shanghai, PRC - May 2002

FORTIFYING SALT AND FLOUR: CARK- CAUCASUS

- ADB-led seven country initiative to promote USI and substantial flour fortification with iron-based premix
- **Participants:** Kyrgyzstan, Kazakhstan, Tajikistan, Uzbekistan, Mongolia (**confirmed**); Turkmen/Azerbaijan (**expected**)
- **Partners:** UNICEF, WB, NIK, AKU, WFP

CARK ACTIVITIES (2001-02)

- Regional Roundtable Almaty June 2001
- Support to salt producers, millers, bakers
- capacity building for surveillance, regulation, customs and trade policy
- regional communications plan
- evaluation and strategic assessment of steps to ensure sustainability
- goals: iodized salt 24 -->66% ; flour -->1/3

Breeding for Iron/Zinc-Rich Rice to Reduce Anemia in Asia

2000-2003

ADB-IRRI-IFPRI

Breeding for Iron-Rich Rice to Reduce Anemia in Asia (2000-2003)

Implementing Partners:

- ADB
- DANIDA
- USAID
- MI
- Waite Agricultural
Research Institute
- Cornell

Countries:

- Bangladesh
- Indonesia
- Philippines
- Viet Nam

CGIAR: FINDINGS-TO-DATE

- BIOAVAILABILITY STUDIES
 - Rats:
Encouraging results for beans & rice
 - Humans:
Feeding trials being planned

FUTURE DIRECTIONS FOR RICE UNDER ADB-LED PARTNERSHIP

- Further development of more **iron-rich germplasm at IRRI**
- **Dissemination** of promising iron-rich germplasm to NARS in Bangladesh, Indonesia, Philippines, and Vietnam
- Field trials **testing bioavailability and impacts on iron status**

FUTURE DIRECTIONS (2)

- Testing of **consumer acceptability**
- **Integration** of plant breeding strategy into the mix of nutrition-improvement strategies considered by policymakers
- **Economic research** for rice breeding: feasibility and cost effectiveness
- Convening of **investment roundtable** to consider regional investment plan for seed distribution (2003)