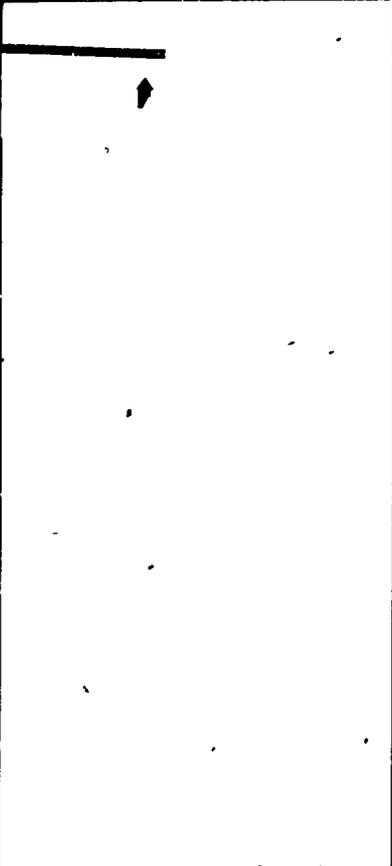


A REPORT ON THE SECOND GROWTH-THREAT PROGRAM

PW ABX-888
48.7%



INCREASING
SURVIVAL,
LEARNING, AND
ECONOMIC
PRODUCTIVITY



This is a brief report about one USAID program with the power to improve the lives of millions of women and children. The things we take for granted—our vitamin pills, the iron in breakfast cereal, or fruits and vegetables available year round—are reasons that most families in the United States are as healthy as they are. The technologies that enable the United States to provide this kind of health protection to our citizens can be adapted and transferred to our developing country neighbors.

The benefits at the individual level are obvious. Millions of child lives are being saved and improved through programs that address micronutrient deficiencies. But there are benefits at the community, national, and global levels as well. Consider that micronutrient programs

- build a solid foundation for educational, health, and productivity investments; without micronutrient improvements, these investments could be wasted or their benefits sharply reduced;
- cut national health costs by preventing or ameliorating cases requiring expensive treatment, hospitalization, or rehabilitation; and
- protect the environment by emphasizing more efficient food production, processing, and preservation.

I hope you find this report informative. We would be pleased to answer any questions you might have about USAID programs in nutrition.

Ann Van Dusen
Acting Assistant Administrator
Bureau for Research and Development



vitamins and minerals are making headlines as evidence grows that they reduce our risk of heart disease, cancer, and other chronic ailments.

But in the developing world—where approximately 800 million people go hungry and childhood deaths far overshadow those due to chronic disease—vitamins and minerals play an undisputed life-saving role.

Vitamins and minerals are micronutrients.

Higher Levels

Some may protect against cancer, heart disease, and other aging ailments.

Current Recommended Levels

All maintain normal body functions.

Minimum Levels

Some prevent physiological dysfunction and decrease children's risk of dying from infectious illness.

¹ WHO/USAID/ NFI, *Vitamin A Mortality and Morbidity Studies*, 1992

² J. Behrman, *The Economic Rationale for Investing in Nutrition in Developing Countries*, USAID, 1992

³ Government of Bangladesh, January 1993

⁴ I. Pollitt, *Malnutrition and Infection in the Classroom*, UNESCO, 1990

⁵ B. Hetzel, J. Dunn, and J. Stunbury, eds., *The Prevention and Control of Iodine Deficiency Disorders*, Elsevier, 1987

⁶ UN Administrative Committee on Coordination— Subcommittee on Nutrition (ACC/SCN), *Second Report on the World Nutrition Situation*, 1992

⁷ James Grant, Executive Director, UNICEF, 1991

We now know that at least three nutrients—vitamin A, iron, and iodine—have a profound effect on child survival, women’s health, educational attainment, adult productivity, and overall resistance to illness.

For example,

- ▶ of the 13 million children who die each year of diarrheal, respiratory, or other infections, at least one-quarter could be saved by increasing their intake of vitamin A.¹
- ▶ the poorest people could raise their income levels by at least 20 percent by raising their iron status to normal.² In the case of Bangladesh, a \$3 per person iron program could result in a \$63 per person increase in productivity each year—or \$3.2 billion added to the gross domestic product over a 7-year period.³ Children’s ability to concentrate in school can also be measurably improved by bringing their iron status to normal levels.⁴
- ▶ the IQ levels of children born to iodine-deficient mothers are as much as 15 percent lower than average.⁵

Unfortunately, 2 billion people are unable to consume even minimally adequate levels of these critical nutrients.⁶

Ending Micronutrient Malnutrition

In the development context, malnutrition means stagnant growth in virtually all sectors of society. Individuals cannot fully benefit from educational and technological investments. They are less able to compete effectively in the world economy. Social and political development cannot occur without an adequately nourished, healthy, and productive population.

At the 1990 World Summit for Children, heads of state or government from 123 countries, including the President of the United States, signed the *World Declaration on the Survival, Protection and Development of Children*.

The World Summit declaration contains nine nutrition goals. By far, the most ambitious goals pertain to micronutrients

By the year 2000, the Declaration calls for

- ▶ virtually eliminating iodine deficiency disorders;
- ▶ virtually eliminating vitamin A deficiency and its consequences, including blindness, and
- ▶ reducing by one-third the 1990 levels of iron deficiency anemia in women

No other document in history bears the signatures of so many world leaders and demonstrates their commitment to specific action within a definite time period.⁷

The micronutrient goals were recast in the *World Declaration for Nutrition* and the *Plan of Action* that grew out of the first International Conference on Nutrition (ICN) held in Rome in December 1992. The Plan of Action provides a common framework for achieving the World Summit goals and thus allows governments, voluntary organizations, the private sector, community groups, and the international community to work collaboratively and efficiently.

U.S. Commitment to a Global Challenge

With the encouragement of Congress, the U.S. Agency for International Development (USAID) played an indispensable role in guiding and funding the research that established micronutrient interventions as effective, affordable, and sustainable. In other words, USAID built much of the scientific platform for the World Summit and the ICN goals.

⁸ D. Jamison and W. Mosley, eds., *Disease Control Priorities in Developing Countries*, Oxford University Press for the World Bank, 1993.

⁹ It is estimated that 16 suffer from anemia. More than half of these cases are attributable to iron deficiency. Other, often coincident causes include malaria, intestinal parasites, blood diseases such as sickle cell anemia, and other nutrient deficiencies.

- For example, in the past 10 years, USAID funded research that
- ▶ confirmed vitamin A's role in saving children's lives;
 - ▶ identified iron's impact on child learning and development,
 - ▶ improved and lowered the cost of food fortification and preservation technology,
 - ▶ developed more effective and less expensive vitamin and mineral supplements,
 - ▶ demonstrated how communications and social marketing can improve dietary practices, and
 - ▶ simplified diagnostic techniques for measuring nutritional deficiencies.

To reach the World Summit goals, we cannot back away now from an unprecedented demand for US expertise—in food safety, environmental resource management, nutrient supplement delivery, communications and marketing, and, chiefly, nutrition research and development.

USAID is prepared to meet this demand through its new Opportunities for Micronutrient Interventions⁹ (OMNI) program, which builds on USAID's past investments and current expertise. As the largest program of any bilateral donor, OMNI will provide expertise and financial resources to address all aspects of micronutrient programming in a collaborative manner with other donors, host country governments, and non-governmental organizations (NGOs). In addition, OMNI will continue to chart new courses in micronutrient research. For example, both zinc and niacin appear to play a critical role in cellular immunity.¹⁰ More basic research is needed as these and other micronutrients may play a key role in combating AIDS, drug-resistant tuberculosis, and other diseases.

This report summarizes the challenge before the international community in ending micronutrient malnutrition, the progress made as a consequence of USAID contributions, and directions for the future.

The Challenge

The *World Declaration for Nutrition*, emerging from the first International Conference on Nutrition, recognizes that each government has prime responsibility for protecting and promoting the food security and nutritional well-being of its people, especially its vulnerable groups. While developing country leaders see slow economic growth, debt burdens, and structural adjustment as major obstacles to alleviating poverty and malnutrition, micronutrient programs are seen as low-cost inputs that offer a high return to development.

What will it take to realize international goals of eliminating vitamin A and iodine deficiency and reducing by one-third the current levels of iron deficiency anemia? How large a problem is before us? What will our efforts cost?

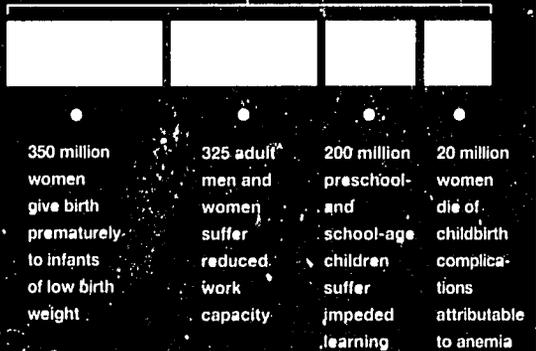
The Causes

There are many reasons why up to 2 billion people fail to consume enough vitamins and minerals in their diets.

Vitamin A and iron are found in certain fruits, vegetables, and animal products that may be seasonal or too expensive. The way in which people prepare or consume food may further reduce their intake. And many cultures have rules for what pregnant or nursing women, children, the elderly, or persons recovering from illness should eat, these rules often exclude many micronutrient-rich foods.

In the case of iodine, it occurs naturally in soil and sea water. However, in some parts of the world, soils have been depleted of iodine by glacial erosion or repeated flooding. In these regions, external sources are essential to provide iodine in the required amounts.

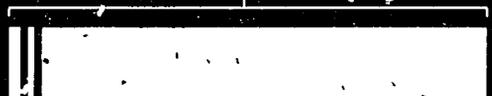
Nearly one-third of the world's population is affected by micronutrient malnutrition.



Iron deficiency is to be found in every country.



WHO estimates that iodine deficiency is a public health problem in 95 countries worldwide.

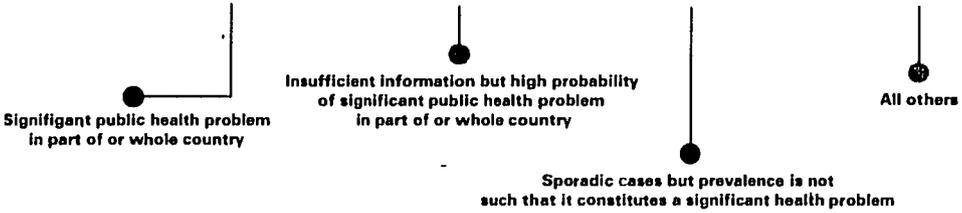


Vitamin A deficiency is a public health problem in 37 countries.

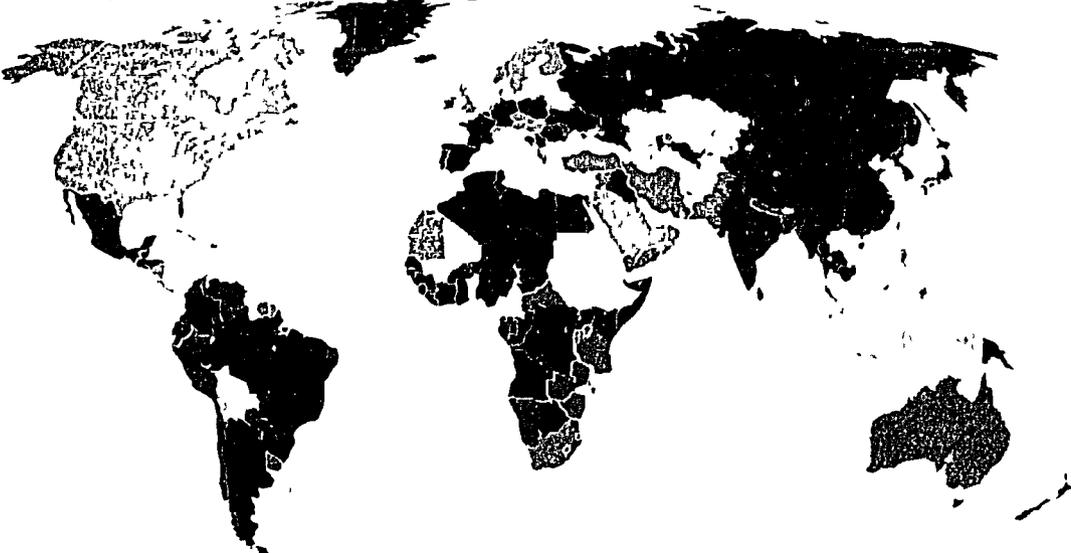
Vitamin A Deficiency xerophthalmia, 1987



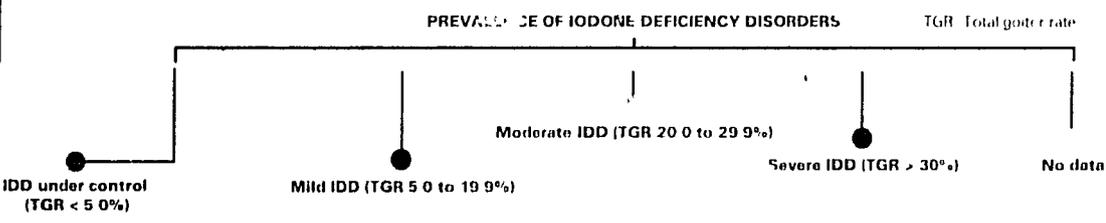
Source: WHO (1987)



Iodine Deficiency Disorders (IDD) total goiter rate, 1993

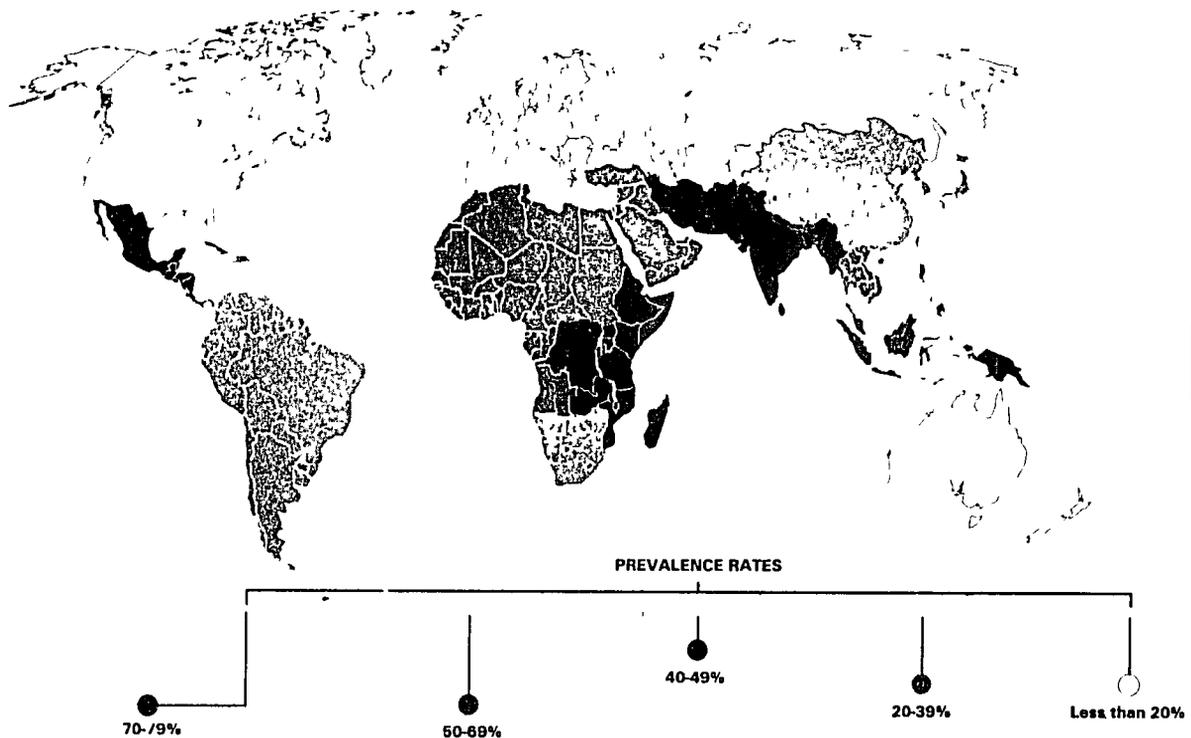


Source: MDIS, WHO (1993)



6'

Iron Deficiency anemia in pregnant women, 1988



Source: WHO (1992)

The Solutions

At a national level, the constraints to making more vitamins and minerals available to the population can be largely addressed by implementing programs designed to educate people to diversify their diets (where appropriate foods are available) or by fortifying commonly eaten foods with the missing micronutrients or providing nutrient supplements through targeted distribution programs

- **Diversifying the diet** by producing or purchasing a greater variety of foods than those usually consumed is considered the safest and most sustainable long-term measure to control most deficiencies. In many communities, micronutrient-rich foods are not eaten by vulnerable groups, particularly weaning-age children and pregnant or breastfeeding women. Other people must contend with foods containing chemical compounds that block their ability to absorb micronutrients. For example, cabbage and cassava block iodine use. The iron in green leafy vegetables, cereals, and beans is hard to digest. Foods that are harder to break down or that block absorption of iron and iodine constitute a large part of the food supply

in developing countries. Therefore, communication approaches are used to raise awareness of, demand for, and consumption of new foods while providing information, skills, and tools to enhance food production, processing, and distribution.

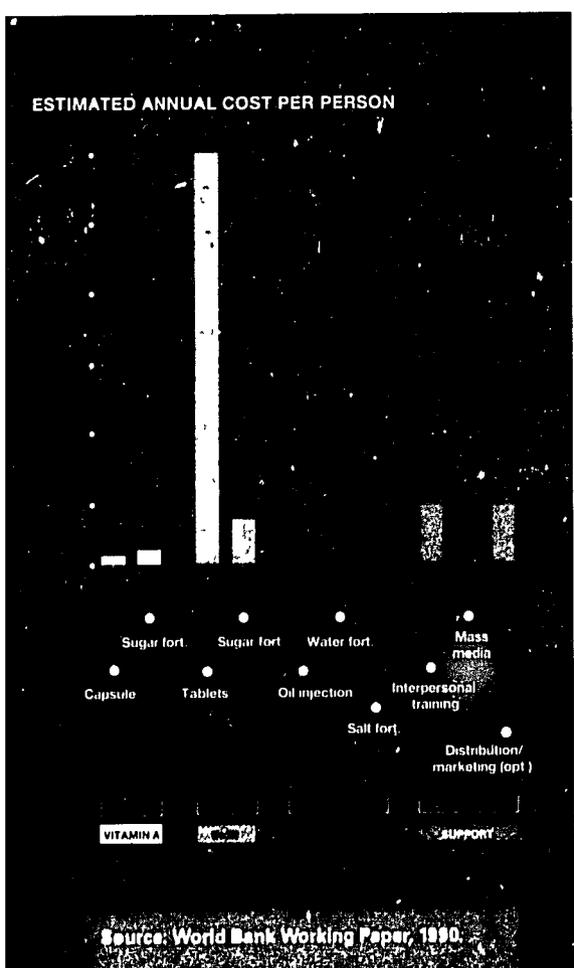


► **Fortifying food commodities or products** that are already eaten by large numbers of people (e.g., sugar, salt, flour, or baked goods) is a growth industry for micronutrient programs.

Fortified foods, often requiring no changes in food beliefs and practices, can be targeted to specific age groups or to people in specific localities. For a country to succeed in food fortification, it needs food processing capacity as well as regulatory, enforcement, and oversight plans for monitoring the food's quality and safety.

► **Micronutrient supplements** are used, normally on a time-limited basis, to prevent deficiencies from occurring or to treat deficient individuals.

Supplements have been distributed during immunization and family planning contacts. They are rapidly becoming part of treatment plans for measles and pneumonia and are cost-effective for reaching isolated areas with high prevalence. Vitamin A, iron, and iodine are available in concentrated or synthetic forms at relatively low cost, for administration either orally or by injection. The USAID-supported International Vitamin A Consultative Group (IVACG), International Nutritional Anemia Consultative Group (INACG), and the International Center for Control of Iodine Deficiency Disorders (ICCID) have developed dosage schedules and supplementation protocols for various age and risk groups.





Are Interventions Costly?

Whether national programs call for dietary diversification, fortification, or supplementation, political commitment and public investment are essential. Micronutrient interventions can be integrated into primary health care, family planning, agriculture, or basic education programs and can be sustained with minimal long-term program costs after initial investments have been made.

A total micronutrient intervention package that includes, for example, vitamin A and iron supplementation, and iodization of salt, as well as an educational program would run approximately \$3 to \$8 per person/year depending on circumstances. This cost is equivalent to most other child survival interventions.

◆
SIMPLE TECHNOLOGY CAN BE USED TO EXTEND GROWING SEASONS OR TO PRESERVE VEGETABLES AND FRUITS, THEREBY HELPING COMMUNITIES ENRICH THEIR FOOD SUPPLY.

USAID's Program in

"Millions of people suffer and many die from lack of minute traces of nutrients. Methods of prevention are cheap and simple. Their universal application could yield health and economic benefits comparable to those achieved by smallpox eradication."

Dr. V. Ramalingaswami, Chair, UNDP Task Force on Health Research and Development, Ending Hidden Hunger Conference, Montreal, October 1991.

"We in the industrialized world do not have to choose between feeding the hungry at home and abroad.... Our world has the resources and the knowledge and responsibility to do both."

Marian Wright Edelman, U.S. Representative, UNICEF Executive Board Meeting, April 27, 1993.

Micronutrient Malnutrition



Program began with early-1950s with USAID and began further sale of donated foods. In the 1970s, USAID activities were directed almost entirely on building a scientific basis for micronutrient interventions.

By 1980, USAID was funding more than 100 U.S. universities and 117 foreign universities to carry out research on micronutrient deficiencies. This research was critical to the development of the 1990s.

USAID's research program on micronutrient deficiencies was a major success story. It was the first time that a major U.S. government agency had funded a large-scale research program on a specific health issue. The program was a major success story because it was the first time that a major U.S. government agency had funded a large-scale research program on a specific health issue.

Safe Motherhood, Breastfeeding, and other vitamin A-specific initiatives worldwide

In 1991, the congressional earmark for vitamin A climbed to \$10 million, and, in 1992, funding was doubled to allow USAID to address other micronutrient problems. In 1993, Congress allocated \$25 million for micronutrient efforts.

How Has the Money Been Disbursed?

In addition to research, USAID funded training and capacity building in host country institutions as well as technical assistance and service delivery in the neediest countries, chiefly through grants or contracts with universities and private voluntary and other nongovernmental organizations.

Accomplishments

With the micronutrient earmark in 1992–1993, USAID funded several cross-cutting programs. These include training provided by the Program Against Micronutrient Malnutrition, implemented by Emory University and the U.S. Centers for Disease Control and Prevention, and expansion of the American Public Health Association's collaboration with other micronutrient libraries to strengthen its ability to respond to requests for information. Fellows from the American Association for the Advancement of Science and Johns Hopkins University are providing scientific guidance to USAID. In addition, USAID has developed an interactive computer program called PROFILES that has already been used in Bangladesh. PROFILES will soon become part of a regional effort in Africa to model the impact of micronutrient and other nutrition

inputs on general development indicators such as gross national product, educational attainment, and infant mortality

The remainder of this booklet highlights USAID programs that specifically address vitamin A, iron, and iodine deficiency and, by so doing, are creating a brighter future for the 2 billion people suffering from micronutrient malnutrition

ESTIMATED REGIONAL EXPENDITURE OF VITAMIN A — MICRONUTRIENT EARMARK¹

REGION	YEAR			
	1990	1991	1992	1993
Africa	\$ 325,000	\$ 1,490,000	\$ 2,124,300	\$ 2,717,909
Asia/NE ²	1,183,000	2,095,000	5,873,382	2,415,752
LAC	1,617,000	1,426,000	448,449	3,271,339
NIS	N/A	N/A	N/A	1,000,000
Worldwide	4,875,000	4,989,000	11,649,648	15,595,000
TOTAL	\$8,000,000	\$10,000,000	\$20,000,000	\$25,000,000

Funds allocated may be for multiyear activities.

² Beginning in 1992, Congress expanded the vitamin A earmark to include other micronutrients.

³ In 1990, most vitamin A activities in the Africa region were funded from the Development Fund for Africa.

⁴ The Near East region received vitamin A earmark funds in 1990 only.

Child survival grants to U.S. private voluntary organizations awarded by the Bureau of Food and Humanitarian Assistance are included in the region in which the activities are conducted.

About 40 million
children in the world
under age 5 suffer
from vitamin A defi-
ciency as do an untold

Vitamin A

number of women in
their childbearing
years. WHO estimates
that 13 million children
have active xeroph-
thalmia—eye disease—
and at least one-half
of those children who
become blinded by
the disorder die within
weeks. Sub-clinical
vitamin A deficiency,
contributing to greater
illness and delayed
recovery, affects many
more children.

The Big Picture

The first study to shake our thinking about vitamin A was published in 1983 by Dr Alfred Sommer and his colleagues from the Indonesian Health Ministry. They reported an increased risk of child death associated with mild vitamin A deficiency. The observational study prompted USAID to sponsor the first Indonesian clinical trial. Published in 1987, the results of the clinical trial demonstrated that village children receiving high dose Vitamin A supplements were 34 percent less likely to die than children not receiving vitamin A.

Between 1982 and 1992, 10 additional studies were funded in Brazil, Ghana, India, Indonesia, Nepal, and Sudan to test the impact of vitamin A on mortality and morbidity under a range of environmental, socioeconomic, baseline health status, and vitamin A delivery conditions.

With seven of the studies completed in 1991, USAID, the World Health Organization, and the National Eye Institute examined available results and concluded that, on average, children receiving some form of vitamin A supplementation were 23 percent less likely to die than children not receiving vitamin A when exposed to the same environments and conditions. In several studies, vitamin A's ability to reduce infant mortality was well above 40 percent. In addition, vitamin A was linked to decreased severity of illness episodes and lower rates of hospital admissions.



◆
MEDICAL INVESTIGATORS
WORLDWIDE HAVE BEEN
TRAINED TO ASSESS
VITAMIN A DEFICIENCY

5

Armed with new information about vitamin A, WHO, USAID, and the National Eye Institute issued a joint consensus statement encouraging governments and the private sector to integrate vitamin A into national public health and food sector programming

USAID-Supported Interventions

Working with governments to assess vitamin A deficiency and then designing and implementing either a comprehensive program or selected interventions has been a major focus of USAID's support to projects in 14 African, 14 Asian and South Pacific, and 10 Latin American and Caribbean countries. The following examples highlight the diversity of programs combating vitamin A deficiency:

◆
 BURKINA FASO'S
 NUTRITION EDUCA-
 TION PROGRAM,
 CO SPONSORED
 BY USAID, UNICEF,
 AND HKI, FOCUSES
 ON THE FAMILY



Burkina Faso

In collaboration with the government of Burkina Faso, the USAID Mission and Helen Keller International (HKI) are working to reduce vitamin A deficiency and to improve maternal and child nutrition in 14 provinces. Activities targeting over 25 million women and children include rapid assessment of vitamin A deficiency, supplementation, and several communication approaches, including radio, and nutrition education in schools and communities to promote increased consumption of foods rich in vitamin A and iron.

Senegal

The MANGOCOM project in Senegal is devoted to improving the vitamin A intake of weaning-age children through the development and promotion of a dried mango product produced by women's cottage industries as a weaning supplement. Florida State University is implementing the project.



THE WORLD
HEALTH ORGANIZA
TION ESTIMATES
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VITAMIN A TO DEFI-
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AND CHILDREN
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SOME 5,000
DEATHS A DAY

Indonesia

In Central Java the Indonesian government, USAID, and IHI are operating the "Rovita Project," which relies on radio, banners, and outreach by health workers and village health volunteers to urge mothers to obtain vitamin A capsules from village health posts every six months. Within a year, evaluators found that the proportion of children who received a vitamin A capsule from a health post rose from 24 percent to 51 percent. The program is expanding this year.

South Pacific Region

Vitamin A prevalence surveys have been conducted in Papua New Guinea and the Cook Islands. Local health care providers were trained in the appropriate treatment of vitamin A deficiency in Tivatu, Vanuatu, and the Solomon and Cook Islands. Community level nutrition education materials and messages were developed for Papua New Guinea and the Solomon Islands.

Bolivia

The government of Bolivia and several PVOs are using nutrition education and vitamin A supplementation to reduce vitamin A deficiency in the departments of Cochabamba and Potosí. With USAID support, the government is also developing and implementing a national intervention.

Haiti

World Vision Relief and Development and Eye Care work with PVO groups, while USAID's bilateral efforts have included the development of a health information system and marketing strategies for food preservation.

Nicaragua

Project Hope is working to reduce vitamin A deficiency through supplementation and treatment of children during bouts of diarrhea, measles, and acute respiratory infection and of mothers within one month of delivery.

Central America

The Institute of Nutrition of Central America and Panama is developing a regionwide strategy to control vitamin A deficiency through capsule distribution, food fortification, and promotion of vitamin A-rich foods.

Global Efforts

The International Vitamin A Consultative Group (IVACG)

Since 1975, USAID has steadily supported information exchange and consensus building within the international scientific community through IVACG. Comprised of internationally recognized experts, the group develops guidelines for micronutrient research design as well as standards of practice for supplementation, fortification, and communications programs. IVACG has held international meetings annually for 15 years, most recently in Tanzania. The annual IVACG meetings provide international researchers and program managers with the opportunity to keep abreast of current developments.

Maternal Nutrition and Breastfeeding Support

USAID funded a literature review to identify knowledge gaps and to determine research needs related to women's vitamin A status. Vitamin A was incorporated into curriculum-based programs on breastfeeding for medical professionals and field efforts to launch breastfeeding promotion were funded worldwide.





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MATED
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ANEMIC

Iron

Iron Deficiency Anemia and Educational Performance

In 1988, USAID participated in a meeting organized by the UN to review the data on the effects of iron deficiency on behavioral development. The participants agreed that many studies (for example, those undertaken in India, Israel, the Philippines, and Nepal) have shown an association between iron deficiency and less than optimal behavior in infants and children as demonstrated by lower scores on tests of development, learning, and school achievement. Using randomized designs and appropriate controls, more recent studies funded by USAID in India, Indonesia, and Thailand demonstrated that iron therapy in toddlers and school-age children with iron deficiency anemia results in improvements in selective learning and school achievement tests.¹⁰

One of the most devastating effects of iron deficiency is a diminished ability to fight infection, which makes vulnerable groups even more susceptible to all transmissible diseases. For pregnant women, anemia carries with it a significant risk of death from spontaneous abortion, the stress of labor, and other delivery complications. Infants born to severely anemic women suffer from low birth weight and have a greater risk of dying. Anemia impairs mental and motor development in infants and children and reduces work productivity. International research has demonstrated that all of these conditions can be dramatically improved through adequate iron consumption.

Fortification Research

Studies conducted since the 1970s on fortifying a broad range of foods and condiments have led to the successful use of two forms of iron for food fortification—iron EDTA¹¹ and hemoglobin. Iron EDTA has been highly effective in fortification trials with Egyptian flat breads, curry powder in South Africa, fish sauce in Thailand, and sugar in Guatemala, to name only a few examples.

The International Center for Control of Nutritional Anemia at the Kansas University Medical Center has enhanced our understanding of the biological availability of various forms of iron and has developed new methods for assessing iron status. Researchers there collaborate with developing country programs to devise iron fortification strategies that take into consideration unique dietary habits and food processing and delivery systems. In Grenada, flour used in commercial baking is currently enriched with iron and B vitamins. USAID is supporting research to determine the feasibility of iron fortification of flour used at home, to be followed by an impact study of anemia prevalence.

USAID supported Rutgers University in the development of methods for iron fortification of rice without altering the product's flavor and the texture. The program also evaluated the storage stability, economic feasibility, and marketability of fortified rice.

USAID contributed to a Guatemalan sugar fortification effort that resulted in a substantial reduction in maternal anemia. The cost of the program, borne largely by the consumer, was approximately 10 cents (US) per person per year. With funding from USAID, Indian researchers are leading international efforts on iron fortification of salt. Chile successfully fortified wheat biscuits with hemoglobin. The biscuits were distributed to children as part of the national school lunch program.

¹⁰ E. Pollitt, *Malnutrition and Infection in the Classroom*, UNFSCO, 1990.

¹¹ ethylenedi-aminetetraacetic acid

Developing a Better Iron Pill

Iron supplement distribution is a priority intervention for women of reproductive age in developing countries. In addition, since many women enter pregnancy in an iron-deficient state, efforts are made to enroll young women in iron supplement programs. Recent breakthroughs in the technology of iron supplements have shown that it is possible to improve iron absorption while reducing the side effects that previously limited women's receptivity to iron supplements. A collaborative project between the Kansas University Medical Center and the Caribbean Food and Nutrition Institute is testing the acceptability of a slow-release iron capsule that can be taken once daily. The ferrous sulphate in the new supplement is retained in the stomach for five to eight hours and is gradually released, thereby protecting iron against poor absorption.

◆
HEALTHY MOTHERS
ARE MORE LIKELY
TO GIVE BIRTH TO
HEALTHY BABIES
AN IMPORTANT
STEP IS ENSURING
THAT WOMEN ARE
NOT IRON DEFICIENT AS THEY
ENTER THEIR CHILD-
BEARING YEARS





◆
SEA FISH
ARE A RICH
SOURCE OF
IODINE

Of the three micronutrients, success in reaching the World Summit goal seems most likely for iodine. At least 18 countries have successfully eliminated iodine deficiency disorders, while 46—among them Ecuador, Nepal and Thailand—have well-established programs showing evidence of success. Others still need to strengthen and accelerate national control programs.

Since its introduction in the 1920s in Switzerland and North America, iodization of salt has been accepted as

Iodine

Iodine Deficiency Disorders (IDD)

In pregnancy, iodine deficiency causes spontaneous abortion, stillbirths, impaired fetal brain development, and infant death.

Iodine supplementation has prevented these poor birth outcomes as well as cretinism characterized by mental deficiency, deaf-mutism, gait disorders, and, frequently, complications in growth and maturation.



the simplest and most cost-effective, large-scale method to control iodine deficiency disorders. Iodization of drinking water has also been tried on a community basis in Thailand and Mali. Where iodine deficiency is highly localized and the population is cut off from normal supply lines, iodized oil taken orally or through intramuscular injection provides protection for several years. Mobile teams in Papua New Guinea, Zaire, and Mali and community health workers in China and Indonesia have administered injections. Because goiters, in particular, respond rapidly to treat-

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FOR YEARS, THE
 IODIZATION OF
 SALT IN THE UNITED
 STATES AND OTHER
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 TION AS A FEASIBLE
 SOLUTION

ment, communities observe the impact of the intervention and thereby enhance their readiness for more long-term approaches such as salt or water iodization.

South American Success Stories

With USAID support, the government of Bolivia initiated a national program in 1984 to eliminate iodine deficiency. Through health posts, teams distributed Lugol's iodine to pregnant women, and initiated both routine administration of oral and injectable iodized oil and distribution of iodized salt. Teams set up booths and loudspeakers at regional fairs to dispense information, distribute iodized salt and oil, and perform goiter examinations. Policy makers revised legislation and technical norms to increase salt iodization processing sites and mounted an aggressive public and private sector awareness campaign. As a result, 28 private and five



cooperative iodized salt production plants opened. Before the intervention, only two plants existed. By 1989, two-thirds of the affected population no longer suffered from goiter.

With assistance from USAID beginning in 1973, Ecuador became one of the first countries to use social marketing to combat iodine deficiency. The program targeted two largely Quechua-speaking provinces. Following anthropological research, the program broadcast a radio drama to raise awareness that “coto” (the term for goiter in Quechua) was evidence of a disease and not a normal condition. The project convinced Ecuasal, the Morton Salt subsidiary, to sell iodized salt in this remote project area for the first time. The company also provided 5,000 sample packages. The program increased iodized salt consumption substantially among the indigenous populations.

Global Advocacy

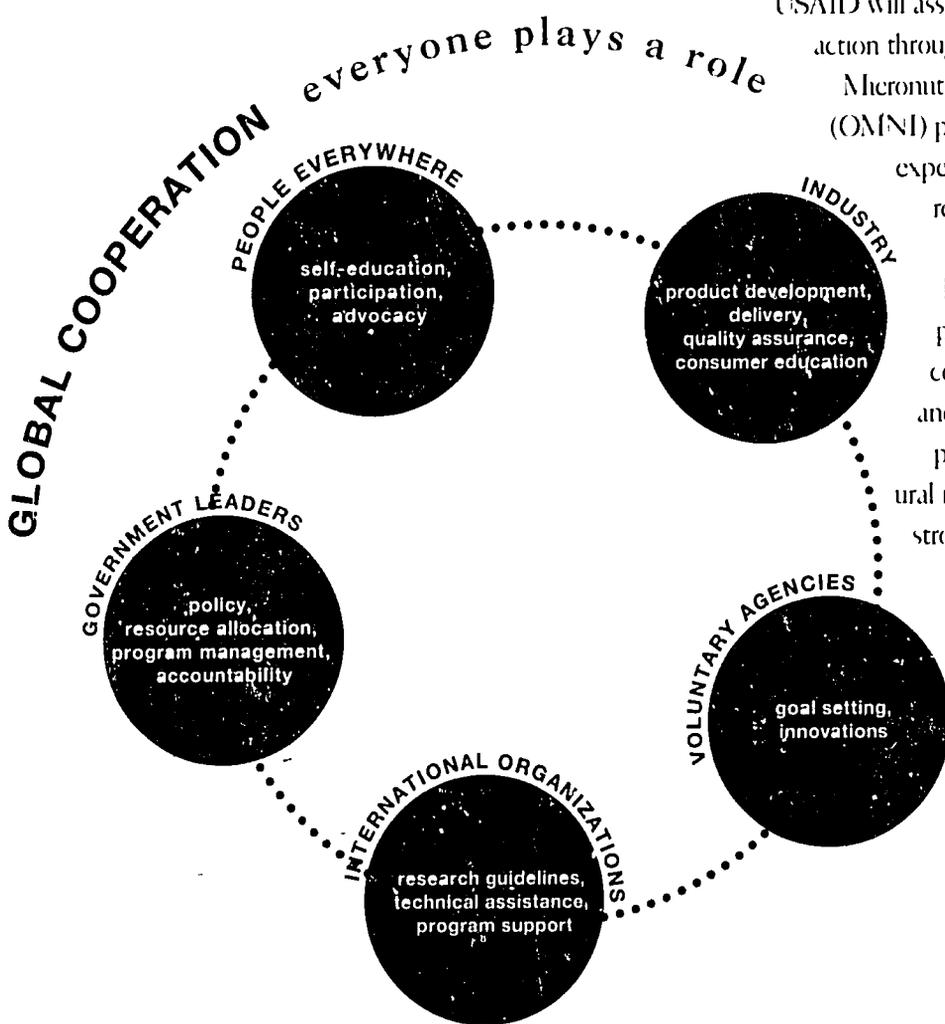
The International Council for the Control of Iodine Deficiency Disorders, has been active in global advocacy, information dissemination, monitoring, and research as well as generating resources to eliminate iodine deficiency disorders. Regional working groups have been established, WHO, UNICEF, the World Bank, the UN Subcommittee on Nutrition and bilateral agencies, including USAID, are active supporters.

There are many examples of successful advocacy for iodine deficiency reduction, including efforts in India, Bhutan, Indonesia, Bangladesh, Uruguay, Ecuador, Brazil, and the Philippines. In Ecuador and Peru, school-age children and other community members performed skits that were videotaped and played back to attentive audiences. As leading iodine researcher B. Hetzel has pointed out, “The populations that suffer from iodine deficiency live in isolated areas, often far from the centers of political power.” IDD control provides a platform for community empowerment, a crucial step in democratization.

The Future

The World Summit goals and the ICN *Plan of Action for Nutrition* are giant steps forward in a global commitment to reduce hunger and malnutrition. But, while developed and endorsed by world leaders, the goals and plans remain words on paper until governments identify the ways and means to take action. In many countries, governments are building alliances with private voluntary organizations, the private sector, local communities, and the international donor community to launch national micronutrient programs. These efforts need encouragement.

USAID will assist countries in taking action through the Opportunities for Micronutrient Intervention (OMNI) program, which provides expertise and financial resources. OMNI is an important thread in the larger fabric of USAID policies and programs that combat disease, hunger, and malnutrition—while preserving our world's natural resources and building a stronger global community.



Administrative
Committee on
Coordination/Subcommittee
on Nutrition (UN)

Acquired Immune
Deficiency Syndrome

Helen Keller International
International Conference on
Nutrition (Rome, 1992)

Iodine Deficiency Disorders

Intelligence Quotient

National Eye Institute (U.S.)

Opportunities in
Micronutrient Interventions
(USAID)

Private Voluntary
Organization

United Nations

United Nations
Development Program

United Nations

Children's Fund

United Nations Educational,
Scientific, and Cultural
Organization

United States Agency for
International Development

World Health
Organization (UN)



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