

VITAMIN & **M**INERAL **D**EFICIENCY

Some nations are already acting to prevent large-scale losses of national health, brain-power, energy and productivity. Others are still thinking about it.

VMD: a damage
assessment report for
INDONESIA

THE PROBLEM

Vitamin and mineral deficiency (VMD) is now known to be a more important problem than anyone ever imagined.

For decades the lack of key vitamins and minerals has brought anaemia, cretinism, blindness, and goitre to millions. But new research has shown that this is only the tip of an iceberg.

It is now known that even moderate levels of deficiency, with no visible symptoms, can have devastating consequences. And it is also clear that this kind of moderate VMD is so common, affecting perhaps a third of the world's people, that it threatens the energies, intellects, and productivity of nations.

Some examples of what has been learnt about moderate VMD in the last ten years:-

- It brings nation-wide losses of intellect, vitality, productivity, and economic growth.
- It is the leading cause of intellectual deficiency on the planet, lowering the average IQ of nations.
- It opens the doors to disease – and brings an early death to 2 million children a year.
- It causes an estimated 400,000 serious birth defects every year
- It brings about the deaths of an estimated 100,000 women a year in pregnancy and childbirth

All this means that defeating VMD is no longer a matter of identifying and treating a minority with the symptoms of severe deficiency. The task now is to reach out to protect whole populations.

THE SOLUTION

VMD was brought under control decades ago in North America and much of Europe. It could now be controlled world-wide by the same low-cost methods:-

FORTIFYING staple foods like flour, sugar and salt with essential vitamins and minerals.

SUPPLEMENTING diets with low-cost capsules, syrups or tablets in order to get vitamins and minerals to women of child-bearing age and to the growing minds and bodies of young children.

INFORMING communities about foods that increase vitamin and mineral intake.

All three approaches are necessary and can be pursued simultaneously. The cost of food fortification, in particular, can be as low as a few cents a year per person protected. That is why the World Bank has said that "Probably 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".

YES BUT WHAT CAN I DO?

For once we are confronted with a global problem for which there is an immediately available and inexpensive solution.

But the solution depends on someone taking the initiative. It could be a political leader. It could be a food industry executive. It could be an academic or university department. It could be a non-governmental organisation.

IT COULD BE YOU.

Often the first step might be simply bringing together in the same room the kind of people who can make a difference – people from government, industry, academia, civil society and aid agencies.

Out of this can come the kind of energetic national alliances needed to defeat VMD.

Food fortification in particular need a strong partnership between public and private sectors: food companies are the ones who process, distribute and market the foods that can be fortified.

What is needed now is not primarily more research. The countries that have defeated VMD did so with less knowledge and technology than we have today. What is needed is clear leadership to deploy known solutions on the same scale as the known problems.

SOME NATIONS MOVING RAPIDLY

Some countries are now moving rapidly against VMD:-

- 50 nations in the developing world have already passed the 70% mark for salt iodisation.
- 40 countries are also reaching 70% or more of their young children with Vitamin A supplements.
- World-wide, 49 nations, including the USA and Canada, now fortify flour with iron.
- 38 nations also have folic acid fortification programmes.

VMD: a damage report for INDONESIA

The damage done by VMD to the people and the nation of Indonesia may be summarised as follows:

- **The deaths of approximately 65,000 Indonesian children each year. Cause: vitamin A and iron deficiency**
- **Average IQ of the nation lowered by 10 to 15 percentage points. Approximately 500,000 Indonesian babies a year born with intellectual impairment. Unknown number born with severe retardation. Cause: iodine deficiency**
- **40% to 60% of Indonesia's children aged 6 months to 2 years sustaining damage to brain development. Iron deficiency now known to lower IQ scores by 5-to-7 percentage points. Effects likely to be permanent. Cause: iron deficiency**
- **Over 25% of Indonesian children growing up with lowered immunity to major childhood diseases, leading to frequent ill health and poor growth. Cause: Vitamin A deficiency**
- **Approximately 2500 deaths a year of young Indonesian women in pregnancy and childbirth. Cause: iron and folic acid deficiency**
- **Lowered productivity of adult work-force. Estimated losses to Indonesia – equivalent to the loss of over 500 million working days or \$8 billion per year. Cause: iron and folic acid deficiency.**
- **Over 17,000 severe birth defects annually, including spina bifida. Cause: folic acid deficiency**
- **Suspected 10% increase in deaths from heart disease Cause: folic acid deficiency**
- **Unmeasured burden on health services, on educational systems, and on families caring for children left disabled or mentally impaired.**
- **Overall loss to Indonesia's development currently estimated at 5% of GDP**

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For further information:
www.micronutrient.org

INDONESIA: A VMD protection audit

SALT IODISATION

About two-thirds of Indonesia's new borns currently being protected against mental impairment by salt iodisation. Iodine deficiency still affects approximately 27% of the population.

VITAMIN A SUPPLEMENTATION

Approximately 60% of Indonesia's under-fives receiving at least one Vitamin A capsule a year to help maintain immune systems and prevent blindness. Prevalence of Vitamin A deficiency in children under six years brought down from 36% to 26% in recent years (1990-2000)

IRON SUPPLEMENTATION

The rate of anaemia in Indonesia's women and young children is approximately 40% and has changed little in the last decade.

FLOUR FORTIFICATION

Indonesia is one of 49 countries in the world that require all wheat flour to be fortified with iron, thereby helping to protect the nation's mental and physical health and increasing national energy and productivity. Effects of flour fortification on anaemia rates yet to be measured.

Indonesia is also one of 38 countries in the world that require the fortification of wheat flour with folic acid, thereby helping to prevent severe birth defects and almost certainly reducing deaths from heart disease.

“When so much could be achieved for so many and for so little, it would amount to a global disgrace if this problem were not acted on.”

Kofi Annan,
Secretary General of the United Nations (TBC)

“The case for the elimination of vitamin and mineral deficiency is compelling beyond description. The return on investment is without equal”

Bill Gates,
President, Bill and Melinda Gates Foundation (TBC)

“It is no longer a question of treating severe deficiency in individuals. It is a question of reaching out to whole populations to protect them against the devastating consequences of even moderate forms of vitamin and mineral deficiency.”

Carol Bellamy,
Executive Director, UNICEF (TBC)

“For nearly 40 years, food fortification has protected the populations of the United States, Canada, and many other countries. It is long past the time when the same protection was available to the peoples of the developing world.”

Nevin Scrimshaw,
President International Nutrition Foundation,

“This is a vital economic and humanitarian cause in which the food industry we are uniquely positioned to help progress”

Brendan Stewart,
Chairman, Australian Wheat Board

“We now have the knowledge to protect the muscles, brains, and blood of whole populations at an extraordinarily low cost. Some countries have moved quickly to take advantage of this opportunity. Others are still thinking about it.”

Venkatesh Mannar,
Executive Director, Micronutrient Initiative (TBC)

“The cost is minuscule. The benefit enormous. We have acted on this issue both because it is right – and because it presents our business in a positive light.”

Philip Punarma, Chief Commercial Officer,
Bogosari Flour Mills, Indonesia

“Whole populations should at last be able to achieve their full mental and physical potential as parents, workers, and citizens”

Glen Maberly, Professor of International Health,
Emory University, Atlanta

“When we realised that the brains of our children were at risk, we acted.”

(representative of Govt. of China)

A MESSAGE TO LEADERSHIP

This damage assessment report is being sent to Indonesia’s senior political leaders. It is also being distributed to the nation’s major print and broadcast media, to food industry CEOs, and to leading figures in the worlds of health, education, and consumer affairs.

Additional copies for further distribution can be downloaded from the MI web-site at www.micronutrient.org. No permission is required for the wider distribution of this damage assessment report by print or electronic media.

VMD – THE BREAKDOWN

- Iodine deficiency** is the world’s leading cause of preventable mental impairment. It significantly reduces IQ and work potential. In pregnancy, it causes babies to be born dead, physically disabled, or with severe brain damage (cretinism).
- Vitamin A deficiency** damages immune systems so that illness is more common and more severe, increasing under-five death rates by up to a third.
- Iron deficiency** reduces energy and productivity in whole populations. In children 6 to 24 months, it damages the normal development of the brain. Effects on children include stunting, sickliness, poor school attendance, and lower levels of concentration and memory. Also causes higher death rates during pregnancy and childbirth.
- Folic acid deficiency** before and during early pregnancy is a major cause of serious birth defects like spina bifida, the leading cause of infantile paralysis. Lack of folic acid also causes anaemia and is strongly suspected of increasing the risk of death from heart disease
- Zinc deficiency** affects about a third of the world’s population, restricts physical growth, impairs mental ability, damages the immune system, and is responsible for almost a million deaths a year world-wide.

A PROTECTION CHECK

VMD is not a problem only of poor people or poor nations.

Iron deficiency – with all its consequences for mind and body – still affects up to 10% of the population in industrialised nations. Iodine deficiency, with its threat to brain development, remains a worry in countries like Spain, Germany, and the UK. And birth defects are still occurring in countries like Australia and New Zealand because folic acid is not added to flour.

World-wide, VMD is to be found not only in poor and remote rural areas but in middle class suburbs of capital cities.

No matter who are where you are, the question needs to be asked – is my family protected? And is my village, town, or city protected?