Micronutrient Deficiency Control in Vietnam from Policy and Research to Implementation: Keys for Success, Challenges and Lessons Learned

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Summary Micronutrient deficiencies are still a public health problem in Vietnam. The Government of Vietnam has taken several steps to improve the situation through issuing supportive policy documents over the last several decades. Food fortification is an important complementary strategy to help bridge the nutrient gap in the population. Currently technical regulations are in place and food fortification is taking place on a voluntary basis, along with other complementary targeted programs including home fortification of complementary foods with micronutrient powders and a communications campaign to reach adolescent girls. These have been built on innovative partnerships with industries on a voluntary, market basis. Other innovative targeted nutrition programs are also being piloted, including a micronutrient supplement project in four provinces and a campaign to reach adolescent girls through sports. High level political commitment and resources is a crucial element to scale up in Vietnam. A micronutrient survey planned in 2015 will help provide the evidence to support a possible mandatory decree on food fortification. Vietnam has built a solid foundation in order to scale up its national food fortification program in the future to reach the majority of the population with improved intakes of iron, vitamin A, zinc, and iodine.

Key Words Vietnam, food fortification, delivery channels, public-private partnership

Background

Over the last several decades, there have been vast improvements in nutritional status in Vietnam, alongside economic growth (1, 2). Still, micronutrient deficits are a public health problem (3, 4). While energy intakes have improved, 70% of Vietnamese population consumes less than the recommended amounts of most essential micronutrients (4, 5). The Government of Vietnam has taken several steps to improve the situation. From 1993–2005, the Government instituted a national target program to control iodine deficiency through Universal Salt Iodization. Through strong political and industry commitment, the program achieved an increase in coverage of iodized salt to reach 95% of households, reducing the prevalence of goiter from 22% to under 4% in children and increasing median urinary iodine from 32 mcg/L to 130 mcg/L in children 8 to 10 y of age (6). In its most recent two policy guiding documents since 2000, the Government of Vietnam has included food fortification as an important solution to address micronutrient deficiency (7). Fish sauce was identified as the most appropriate food vehicle to fortify with iron, as it is consumed by more than 80% of the population (8) and was proven efficacious in controlling iron deficiency anemia (9).

National Fortification Program: From Policy and Research to Implementation

In order to support the implementation of fish sauce fortification, the Global Alliance for Improved Nutrition (GAIN) awarded a grant to the National Institute of Nutrition from 2006–2009. While this program achieved the production of fortified fish sauce in ten factories reaching over 575,000 people, ultimately the privatization of the then state-run fish sauce industry interrupted the program before it reached national scale (8). In July 2010, the National Assembly approved a food safety law, which stated that mandatory fortification should be enacted following evidence showing that micronutrient deficiency is a public health problem (8, 10). This set the foundation for the development of Government decree for mandatory food fortification and related technical documents later. In 2011, the national technical regulations for food fortification were developed and issued by the Vietnam Food Administration, further facilitating an enabling environment for food fortification (11). In this new context, in 2011 GAIN provided second grant to the National Institute of Nutrition to catalyze the national food fortification program. In addition to fish sauce, vegetable oil and flavoring powders are consumed by over 90% of women and soy sauce by over 63% (12). Therefore, these food vehicles were also included.

Under this grant, food industries were educated about micronutrient deficiency and called to fortify. Seventeen condiments and vegetable oil companies signed com-

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mitments to fortify foods with vitamin A, iron or zinc. To date, nine have started fortifying part of their factory output. While all the major producers of flavoring powder are fortifying, the largest fish and soy sauce and vegetable oil have not started. As fortification is voluntary, fortified foods currently available are branded products, available mainly in supermarkets. An official fortification logo was developed and approved by Ministry of Health and Vietnam Food Administration. A mass communication campaign is taking place to educate consumers to recognize the logo and select fortified foods. The anticipation is that this campaign will build the demand needed to incentivize more food industries to produce fortified foods until it eventually becomes mandatory. The project runs until October 2015.

In addition to the national fortification, targeted programs are also being piloted. A home fortification of complementary foods program is also being piloted with the support from GAIN specifically for children from 6 to 59 mo in 2014. A 15-ingredient vitamin and mineral powder, tasteless and colorless, is produced by the Nutrition Food Center under umbrella of the National Institute of Nutrition, and is designed to be added to 6–59 mo old children's complementary foods, to help provide children the essential micronutrients for their optimal growth and development. This intervention has been globally proven to significantly reduce anemia amongst children (13). Four provinces with a total 313 communes are distributing these micronutrient powders (MNP) branded "Bibomix," following a comprehensive communication campaign around Micronutrient Day activities. Health workers have been approved by the Ministry of Health and local government authorities to be trained and to sell "Bibomix" at a reasonable price and provide counseling on optimal infant and young child feeding practices, including exclusive breastfeeding, timely introduction of complementary foods, dietary diversity and continuous breastfeeding for up to 2 y. More than 1,000,000 sachets of Bibomix have been sold in 5 mo of the project, reaching more than 24,000 children. With support from the Home Fortification Technical Advisory Group (HFTAG), of which GAIN is the Secretariat, a 2-d tri-country workshop was held to share regional lessons on what has been learned about the introduction of MNPs in Cambodia, Laos and Vietnam, and to develop scale-up action plans securing strong political buy-in for national expansion of home fortification interventions.

In addition to the national food fortification program and the home fortification pilot project, an innovative partnership was established in 2013 among the Asian Football confederation, Asian Football development program, Global Alliance for Improved Nutrition, Royal DSM, and World Vision International to leverage program insights, technical approaches and geographic reach of core partners and aims to scale up the most effective models for engaging youth (particularly girls) through football to encourage positive behavior change for better nutrition. While this partnership is in its early stages, it could be a valuable channel to reach adoles-

cent girls through building nutrition awareness and changing behavior to make better nutritional choices.

Discussion

It has been nearly 15 y since food fortification was first introduced in Vietnam's national nutrition policy. The current regulation allows food manufacturers to voluntarily fortify, following technical regulations issued by the Vietnamese Food Administration. While some fortified foods are on the market, this model has been limited in effectively reaching the majority of Vietnamese population with fortified foods to provide missing nutrients. Because food companies are competitive businesses, they are reluctant to launch new products which involve uncertainly regarding return on investment. This mentality had been demonstrated in the fish sauce fortification project from 2006–2009. In this context, the National Institute of Nutrition is developing innovative partnerships with the food industry and running a mass media campaign to actively build demand for fortified foods, reducing industry risk and incentivizing producers to fortify. While this is working on a limited basis, fortified foods are still niche products and no bulk or industrial sales are fortified. Likewise, the MNP project needs the backing of supportive policy in order to scale up from the current 4 to all of the provinces in Vietnam.

The passage of a mandatory decree for food fortification would be an effective step in scaling up the national fortification program. While mandatory legislation alone does not guarantee success, in Vietnam several of the other building blocks have already been put in place. The technical regulation for food fortification, including formulation and standards, has already been developed, partnerships with the private sector have been established, and a communications campaign is underway. The mandatory decree—along with effective enforcement—is an important step to scale up. This is currently being developed under the leadership of the Ministry of Health; however in order to proceed, the MOH needs to update the data on population nutritional status (2009) in 2015.

Vietnam has not only shown the positive outcome of the passage of a mandatory decree on fortification, but also the risk of reducing political commitment: in 2005 the Government downgraded the National IDD Control program from a national target program to a routine program, leading to a reduction in management oversight and budget. This corresponded with a sharp reduction in iodized salt coverage from 90% to less than 50% and UIC to fell to below the optimal range at 83 $\mu\text{g/L}$ in 2008 (6). Therefore Government ownership and leadership is essential to the success of national nutrition intervention in Vietnam. However, the Government does not produce or distribute food or engage in mass demand creation. The dismantling of the first fish sauce fortification program (2006–2009) due to the newly privatized industries' lack of willingness to invest demonstrated that partnership with the private sector-and civil society- is necessary to bridge policy and research

with implementation and delivery.

New models are being tested in Vietnam to partner with business and reach consumers, food producers, and civil society to improve awareness through information, education, and communication on nutrition. These efforts may have a positive reinforcing effect on gaining the necessary political commitment to scale up food fortification to become a national program. Government awareness about the importance of micronutrient deficiency control has improved over the last two decades: the Vietnam Strategy on social and economic development included many important documents supporting nutrition, enabling implementation of the National Strategies for Nutrition. Reduction of under-nutrition, including stunting, has become one of a few health indicators to be included amongst documents reviewed by the National Congress of the Vietnam Communist Party, and has been evaluated and monitored annually by the National Assembly. Continued advocacy efforts are underway to promote national food fortification to a national priority program.

Conclusion

Vietnam has shown increasing political commitment from the Government in nutrition in the last two decades. Currently, several pilot programs for bridging the nutrient gap are underway, which reach a small proportion of the population through mainly market-based delivery channels. Lessons learned from Universal Salt Iodization in the country reveal that food fortification can effectively be scaled up if promoted to a national priority program including a mandatory decree and enforcement, especially when supported by partnerships and an engaged private sector. In Vietnam, the foundational building blocks for successful scale up of food fortification have been put in place. The Government conducts ongoing consumption surveys and is planning for a micronutrient survey in 2015 in order to inform the mandatory decree. Food fortification alone cannot eliminate all micronutrient deficiencies, especially in target groups such as adolescent girls and children age 6 mo–5 y. Therefore additional complementary approaches including supplementation of complementary foods using MNPs (Bibomix) and nutritional behavior change communication (OneGoal campaign) may effectively reach target groups through alternative and/or market-driven delivery channels. In a context of rapid socio-economic development and dietary shifts,

it is crucial that the Government continues to monitor food consumption and micronutrient status, and plays a monitoring and oversight role in the country's comprehensive nutrition program.

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