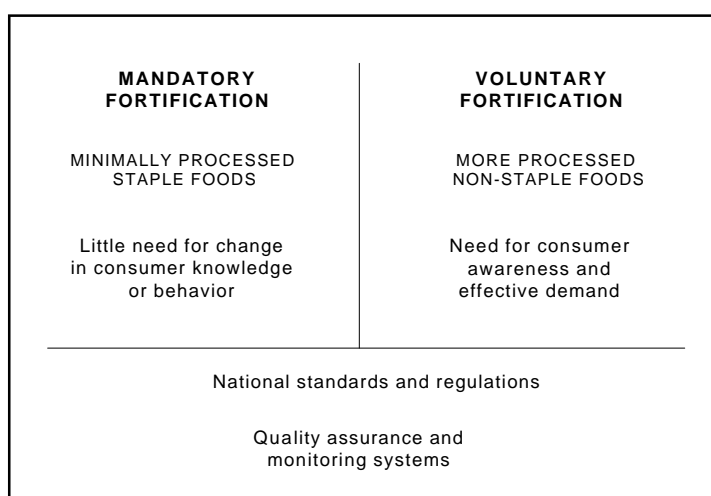


# FOOD FORTIFICATION

## *Need for a more proactive approach*

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**F**ortification is the addition of one or more essential nutrients to a food, whether or not it is normally contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients in a target population. In some instances, food producers elect to fortify foods voluntarily; in others, government requires the fortification of certain foods in the interests of public health. In both instances, collaboration between government and industry contributes to a sustained effort to improve the nutritional well-being of a population. The diagram below illustrates that mandatory fortification is most often applied to staple foods while voluntary fortification is most often applied to more highly processed luxury foods.



The diagram also shows that a critical element in successful fortification of non-staple processed foods is a high level of consumer awareness and the conversion of that awareness into effective demand. In contrast, the fortification of staple foods can be assured through legislation and enforcement with little or no change in the knowledge or behavior of the target audience. And, for staples and processed foods alike, national standards and regulations and monitoring and quality assurance systems must be in place.

### Steps to Build a Food Fortification Program

Experience suggests that the following steps can lead to a successful fortification program:

1. Sensitize key policy makers through effective advocacy
2. Identify appropriate food vehicle(s)
3. Assess technical and economic feasibility of fortifying the vehicles identified
4. Develop a public/private partnership
5. Formulate national fortification policies and plans
6. Establish standards for voluntary fortification and/or legislation for mandatory fortification
7. Transfer and/or locally adapt existing technology
8. Establish/strengthen industry quality assurance and control
9. Establish an effective government monitoring and evaluation system
10. Develop a marketing and behavior change strategy

### ➔ **Sensitize through effective advocacy**

Advocacy for fortification helps generate the support of industry, government, and the consumer. Experience suggests that a multisectoral “fortification task force” may provide the necessary stimulus for a fortification program while providing a forum in which the many partners in the program may develop a shared commitment to moving forward. The task force may select appropriate food vehicles, establish the public/private partnership, propose policies, set standards and draft legislation, coordinate implementation, and evaluate the program.

### ➔ **Identify appropriate food vehicle(s)**

The selection of appropriate processed foods for fortification may be based on consumption data but, frequently, is determined by the willingness of industry representatives to move forward. Candidates for fortification of staple foods should be chosen from among those affordable foods consumed regularly and in predictable amounts that are processed by relatively few producers. Where possible, processed foods should be selected that are both affordable and available to the target population, often the very poor. In both instances, the technology must exist to assure the stability and bioavailability of the micronutrients as well as the preservation of the color, taste, and appearance of the foods.

### ➔ **Assess technical and economic feasibility of fortifying vehicles identified**

The technical feasibility of fortification is determined by the specific characteristics of the food and the fortificant compounds, including stability of the fortificant given local storage and usage practice; and producers’ production, packaging, and marketing processes. Economic feasibility is determined by the number of food producers and, in the case of voluntary fortification of non-staple foods, the relative market share and segmentation of those producers; as well as an analysis of the additional costs incurred to fortify and the potential for those costs to be recovered in the marketplace.

### ➔ **Develop a public/private partnership**

A critical element for the success of either mandatory or voluntary fortification is continued cooperation between the public and private sector. Governments should acknowledge and accept that food producers are in business to generate profit while industry should recognize that it could play a major role in contributing to public health without compromising its business interests. Roles should be clearly defined; trust should be developed among the parties; and activities staged at a pace amenable to both industry and government.

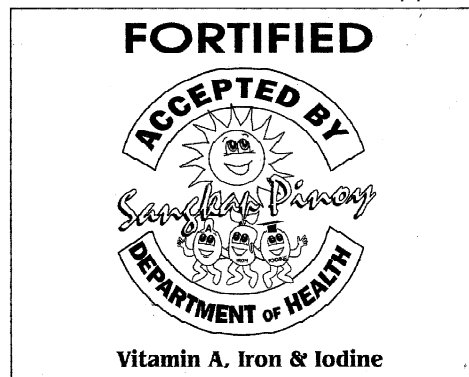
### ➔ Formulate national fortification policies and plans

A comprehensive national strategy that articulates objectives and targets for fortification contributes to the successful partnership. The strategy should specify target populations, foods to be fortified and micronutrients to be added, guidelines and regulations, the definition of government and industry's responsibilities, law enforcement mechanisms, and monitoring systems. Ideally, fortification policies and plans should be incorporated into an integrated nutrition or micronutrient policy or plan.

### ➔ Establish standards for voluntary fortification and/or legislation governing mandatory fortification

Standards and regulations for defining safe and affordable levels of fortification as well as for labeling foods as fortified are essential. Experience suggests that a government seal or formal approval, recognized by the consumer, is useful to promote fortified foods among consumers and to sustain planned levels of fortification.

Government seal used in the Philippines



Where fortification of staples is mandatory, legislation conceived under the broad “umbrella” food and health legislation empowers the appropriate division of government to establish standards and regulations without having to embark on distinct efforts to establish laws for each food.

In both instances, laws and/or regulations should specify fortification levels, form(s) of the fortificant, packaging requirements, labeling standards, and enforcement procedures. Industry should participate in the process of drafting laws and/or standards to assure their technical feasibility while promoting industry acceptance.

### ➔ Transfer or adapt proven technologies

Fortification technology is available for most staple and many processed foods throughout the industrial world. Generally, simple adaptations to local conditions are needed but the development of entirely new processes is not. Special packaging for alternative climates may be in order. In almost all instances, small-scale tests of the technologies should be undertaken to assure the feasibility of fortification and the stability of the fortified food product.

### ➔ **Establish/strengthen industry quality assurance and control**

An effective quality assurance/control (QA/QC) system is critical to maintain the quality of fortified foods as they are released in the marketplace. The industry quality assurance system should include testing of ingredients, monitoring of the production process, and testing of the final product at the point of production as well as at key points in the company's distribution channels. Government should plan periodic inspections for independent verification of the integrity of the QA/QC system.

### ➔ **Establish an effective government monitoring and evaluation system**

The QA/QC system applies to the production process. A broader monitoring system may assure that fortificant levels are adequate throughout the distribution channel and in the household at the time of consumption. Successful implementation of a monitoring system promotes confidence in the program and facilitates changes in standards or legislation as the program matures.

In instances where the effectiveness of fortification as a means of reducing micronutrient deficiency is in doubt among some policy/decision makers, it may be necessary to monitor changes in the micronutrient status of the population over time as additional fortified products become available in the marketplace.

### ➔ **Develop marketing and behavior change strategy**

Whether fortified foods appear in the market through mandatory or voluntary measures, knowledge of the value of consuming fortified foods as a means of improving nutritional well-being and health is critical to the long-term success of a program. A good marketing strategy informs the public about issues of nutritional benefit, toxicity, and other behavioral measures to enhance the impact of the fortified foods. And, sustained demand for fortified products by the consumer is the best means of guarding against industry or government changes in policies and plans that might jeopardize the entire program.