

# The Cost Implications of GM Food Labeling in the Philippines

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## Introduction

The growing debate on GM food safety and consumers' right to know have pressed GM food labeling into an important public policy issue. While the issue has yet to be resolved, some countries have already adopted policies that either imposed mandatory or voluntary labeling of GM products.

The issues involved in GM food labeling are complex particularly so since product labeling is not simply sticking labels on finished food products. There are multiplicative processes with attendant benefits and costs. The type of GM food labeling to be adopted by a country will have a significant impact not only on trade but also on agricultural and food production.

In this study, the impact of mandatory GM food labeling in the Philippines was evaluated from the standpoint of all stakeholders concerned, focusing on two GM products, soybean and corn, which are found in the daily diet of Filipinos. A significant portion of the study examined the cost implications of mandatory labeling of GM food products to the farmers, traders and manufacturers, the government, and consumers.

## Labeling Options

Countries tailor labeling policies to their own needs and institutional capacities to carry out and monitor regulatory systems for GM food labeling. Several policy options are available for GM food labeling. These policy options have different implications for product and market development.

The European Union and countries such as Australia, New Zealand, Brazil, Japan and China require mandatory labeling of GM food products. Mandatory labeling is based on the premise that it allows consumers to exercise their "right to know" identified attributes of a product, thus facilitating informed buying decision-making. A number of these countries, however, have set an allowable tolerance level of GM content, otherwise the product has to specify the presence of GMOs. Canada and the United States only require labeling when there is safety concern about the food, or when there is significant change in the composition, nutritional value, or intended use of the food product.

Whatever form of labeling is adopted, GM products are assumed to have undergone the required risk assessment by regulatory bodies and are found safe for human consumption.

## Philippine Biosafety Regulations

The National Committee on Biosafety of the Philippines (NCBP), created in 1990, carry out functions dealing with the implementation of national biosafety guidelines and risk assessment of GMOs. The NCBP has a regulatory role not only in research on GMOs but also on the import and commercial use of GM products.

The Department of Agriculture Administrative Order No. 8 (2002) provides regulatory guidelines for a) the importation of GM plants and plant products for experimental purposes or for direct use as food, feed, or for processing; b) the conduct of field trials; and c) the

## What is A Label?

Codex Alimentarius provides the following definitions of label and labeling:

- **Label:** Any tag, brand, mark, pictorial or other descriptive matter, written, printed, stenciled, marked, embossed or impressed on, or attached to, a container of food (Codex, 1985 rev. 1991).
- **Labeling:** Includes any written, printed, or graphic matter that is present on the label, accompanies the food or is displayed near the food, including that for the purpose of promoting its sale or disposal (Codex, 1985 rev. 1991).

## ***GM Labeling Policy Choices and the Labeling Policy Mix***

In theory, there are several types of labeling options depending on the nature of the policy being emphasized. In practice, however, many policy options are not mutually exclusive with each other, but are actually complementary components in the formulation and implementation of national, regional and international GM labeling standards.

GM food labeling can be positive or negative, extensive or limited, mandatory or voluntary.

A labeling standard could either highlight the novel characteristic of a GM product (positive labeling) or underscore the absence of genetic modification in a non-GM product (negative labeling). Statements such as, "This product contains (or may contain) GMOs" or "This product is genetically engineered to enhance certain characteristics" exemplify the first option. In contrast, declarations such as, "This product is GM-free" or "This product is made from crops that are non-GM," are actual product claims made under the second option.

A close variant of the extensive vs. limited labeling option is the dichotomy between process- and product-based labeling. A GM labeling policy that is extensive or encompassing includes all GM-derived products even if genetic modification cannot be detected in the final composition of the highly processed food. The policy can also be made broader to include meat and milk from animals fed with GM grains. On the other hand, a labeling policy that is limited confines its scope to certain well-defined and detectable GM characteristics of the food. Thus it excludes food products such as oil, margarine, flour, and syrups since the GM component cannot be detected in the final product. Further, a limited policy may even restrict labeling only to products that are based primarily on particular crops, such as soybeans and corn. The level

of threshold adopted to quantify adventitious presence and qualify products as GM or non-GM is also a good indication as to the type of labeling being espoused. A survey of labeling regimes of different countries reveals that standards being adopted (or actually implemented) range from one end of the policy spectrum to the other, with the majority spread in between.

Mandatory GM labeling compels companies to declare genetic modification in a food product, or otherwise face some form of government sanction. The application of this policy varies and theoretically can be in the form of a mandatory positive declaration (e.g., "may contain GMOs"), a mandatory negative declaration (e.g., "does not contain GMOs"), or both. In reality, however, those countries with mandatory labeling regimes usually adopt positive labeling, effectively putting the burden of regulations to food companies using GM-containing products.

Voluntary labeling, on the other hand, allows food companies to decide whether or not to declare the absence or presence of genetic modification in their products as long as such claims are understandable, truthful, and capable of verification. In countries that have adopted this policy, the practice of volunteering information in product labels as to GM content is usually exercised by companies producing GM-free products, i.e., voluntary negative labeling. The reason is simple. Such companies cater to a specific segment of the market that has a distinct preference for GM-free products even at a premium price, e.g., organics and identity preserved foodgrains. Conversely, companies producing GM-derived food rely on the fact that their products are safe and substantially equivalent with conventional food. Hence, in this case, they see labeling as immaterial, arbitrary, and cost ineffective.

commercial release of new GM varieties. The Administrative Order requires mandatory risk assessment of GM plants and plant products, carried out on a manner specific to a particular GM crop and transformation event. Risk assessment is done according to the principles provided for by the Cartagena Protocol on Biosafety.

### **Philippine Guidelines on Labeling**

In December 2002, the Philippine government approved *Bt* corn for direct use as food, feed or processing and propagation. Other GM crops that had been approved for export into the country for processing, food and feed use include soybean, canola, potato and cotton. Currently, the Philippines has no regulation imposing labeling on GM food products. The Bureau of Food and Drug (BFAD) is tasked to ensure that all processed and pre-packed food products have passed the necessary food safety evaluations and conforms with international food safety standards before releasing to the market. For GM foods, the focus of evaluation of the BFAD is on the characteristics and safety of the product and not the process by which it was produced.

BFAD conforms with the labeling requirements of the WHO/

FAO Codex Alimentarius international standard for processed food. Current labeling regulation of BFAD only requires a generic labeling of all ingredients, with no reference to the process by which the product is produced.

### **Cost Impact of Mandatory Labeling**

Cost implications of mandatory labeling in the Philippines for GM corn and soybeans and their products were assessed from the standpoint of farmers, traders and manufacturers, the consumers, and the government.

#### *Cost Implications at the Farm Level*

In terms of local farm production, mandatory labeling for GM products will require product differentiation between GM and GM-free raw materials prior to use in any food processing. This will entail setting in place a system for segregation, identity preservation, and traceability at the farm level, resulting into an increase in production cost. Likewise, there will be a need for a certification system to monitor and verify product claims as to the presence or absence of genetic modification in the corn or soybeans; and this will also entail additional cost.

**GM crops approved for importation for direct use for food, feed, or processing in the Philippines**

<i>Event</i>	<i>Trait</i>	<i>Date Approved</i>
Corn MON810	Insect resistance	4 Dec. 02
Corn Bt11	Insect resistance; herbicide tolerance	22 Jul. 03
Soybean 40-3-2	Herbicide tolerance	22 Jul. 03
Corn NK603	Herbicide tolerance	10 Sep. 03
Corn MON863	Rootworm resistance	7 Oct. 03
Corn TC1507/Cry1F	Insect resistance	7 Oct. 03
Corn DBT48	Insect resistance; herbicide tolerance	22 Oct. 03
Canola RT73	Herbicide tolerance	22 Oct. 03
Corn Bt176	Insect resistance	24 Oct. 03
Corn GA21	Herbicide tolerance	20 Nov. 03
Corn DLL25	Herbicide tolerance	20 Nov. 03
Corn T25	Herbicide tolerance	5 Dec. 03
Cotton 1445	Herbicide tolerance	5 Dec. 03
Cotton 15985	Insect resistance	5 Dec. 03
Potato B16 (RBBT02-06; SPBT02-05)	Beetle resistance	22 Dec. 03
Potato RBMT15-101; SEMT15-02; SEMT15-15	Beetle resistance; virus resistance	22 Dec. 03
Cotton 531	Insect resistance	5 Feb. 04

Source: Bureau of Plant Industry

**Cost of mandatory labeling in the Philippines: the Food Manufacturing Model**

<i>Cost Structure</i>	<i>Share</i>	<i>IP Cost Differential</i>	<i>Added Cost</i>	<i>Impact</i>
<b>SALES REVENUE (SR)</b>	<b>100%</b>			
<b>I. Cost of Sales:</b>				
Primary raw material	20%	cost 10% more	+2%	22%
Specialized ingredients	10%	cost 40% more	+4%	14%
Packaging with label	10%		+1%	11%
Manufacturing overhead	10%		+1%	11%
Labor	8%			8%
<b>Total Cost of Sales (TCS)</b>	<b>58%</b>			<b>66%</b>
<b>Gross MFG Profit (GMP = SR - TCS)</b>				
	<b>42%</b>			<b>34%</b>
<b>II. Operating Costs:</b>				
Sales and marketing	20%			22%
G&A including taxes	12%		+2%	13%
Financing	4%		+1%	4%
Others	2%			2%
<b>Total Operating Cost (TOC)</b>	<b>38%</b>			<b>41%</b>
<b>Profit before income tax (Profit = GMP - TOC)</b>				
	<b>4%</b>			<b>-7%</b>

**The adjustment to regain equilibrium of making 4% profit will be to recover the additional cost increase of approximately 11% to 12%**

Should there be a threshold level of tolerance for adventitious biotech presence, some form of quantitative certification will also be necessary. Cost significantly increases as the threshold level becomes more stringent. The Philippine food industry maintains that a 5% threshold level will be more manageable than a 1% threshold level since the latter will pose more

11% to 12% in order for the manufacturer to revert to the previous profit margin of 4%.

The willingness of the Filipino food manufacturers to absorb this additional cost will be limited because of its adverse effect on the company's own viability. A detailed study of the

significant challenges and costs.

Industry estimates and studies elsewhere indicate that the cost of producing certifiable GM-free corn is about 12% higher than the cost of producing GM-containing corn.

**Impact on the Food Manufacturing Sector**  
GM labeling will increase cost at the manufacturing due to segregation and other attendant costs. To produce both GM-free and GM-containing products, a manufacturer will have to operate two separate production lines in order to ensure non-commingling. In such a case, the manufacturer will have to incur additional costs in the following aspects: 1) procurement of GM-free raw materials; 2) logistical support due to segregation of production inputs and outputs; 3) separate production runs to ensure non-commingling; 4) compliance to governmental regulations and standards; 5) distribution and retailing; 6) human resources costs due to additional logistical and accounting support; and 7) insurance costs or risk of civil suits.

Many local food processors believe that limited production facilities will hinder production of GM-containing and GM-free products at the same time. Thus, the food manufacturer may just concentrate his/her resources in the production of a particular product type. In case of GM-free products, the major source of the additional cost with GM labeling is the premiums paid for GM-free raw materials.

Based on the Food Manufacturing Model of this study, food manufacturing companies earning 4% profit before tax will incur a net loss of 7% due to added costs in using and producing GM-free products. Mandatory GM labeling could thus increase the manufacturing cost by

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The Global Knowledge Center on Crop Biotechnology was established by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) in September 2000.

Co-located at the ISAAA Southeast Asia headquarters in the Philippines, the Knowledge Center envisions itself as a virtual science-based information network responding dynamically to the needs of developing countries on crop biotechnology and related issues.

*"The Knowledge Center was born out of an urgent need for developing countries to have current authoritative information for sound decision-making. This will be realized through a network where consistent and focused sharing and distribution of information will be pursued."*

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financial strength of 70 selected food companies revealed that in general their gross margin of profit will not be able to absorb an increase in raw material and manufacturing cost. Particularly for the smaller firms, this will have a devastating impact on their viability, unless the incidence of cost can be passed on to the consumers in terms of higher selling price of finished products, and/or to the farmers in terms of lower buying price for raw materials at the farmgate.

#### *Impact on the Consumers*

Mandatory GM labeling will result in additional food manufacturing cost of as much as 12%. What is expected is that part of this additional cost will be passed on to consumers in terms of higher price of the product. The average Filipino food expenditure is about 54% of their income. This pattern of expenditure for food makes the Philippine market more price sensitive than those in developed countries. Filipino consumers may respond by limiting the volume of purchase of the affected products or buying substitute food items especially when the price increase is significant.

#### *Implications to Government*

Regardless of the type of labeling to be adopted, whether voluntary or mandatory, the Philippine government will have to incur regulatory costs in the implementation of a GM labeling policy. Needless to say, the scale of activities involved and the corresponding costs to be incurred are greater under a mandatory labeling regime.

With mandatory labeling, the need to monitor and verify the presence and amount of GM content would require analytical methods capable of detecting, identifying, and quantifying the DNA introduced or the protein expressed in the GM crop. These analytical methods,

usually based in or supported by physical laboratories, are required not only for raw materials but also for their processed and finished products.

In order for the Philippines to deal with the regulatory requirements of mandatory GM labeling regime, there is a need to establish proper institutional capacity and capability of concerned agencies, including building and maintenance of testing facilities and continuous training of technical manpower.

#### **Conclusion**

The issues involved in GM food labeling are varied and complex particularly so since product labeling does not simply entail putting labels on packages of finished food products. There are several processes involved with attendant socioeconomic costs. Under the Philippine setting, careful considerations must be taken in designing an appropriate and rational GM labeling regulatory regime.

Given the cost implications of GM food labeling to affected stakeholders, several policy options are explored. Among the more viable option is the proposal for the Philippines to adopt a progressive labeling policy involving three phases over a well-defined implementation period. This option will allow policy makers to observe trends in the global agricultural production and international trade, which will for the most part be affected by actions to be taken by the more dominant players. In this way, the domestic labeling policies that will be implemented will be responsive to the global trends in production and trade. Additionally, the government will have enough time to build institutional capabilities to effectively implement its labeling policies, and allow the private sector to adjust corporate plans accordingly.



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*Complete study may be downloaded at: <http://www.bcp.org.ph/downloads/Cost%20Implications%20of%20GM%20Food%20Labeling%20in%20the%20Philippines.pdf>*