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# LABELING POLICIES OF GENETICALLY MODIFIED FOOD

## LESSONS FROM AN INTERNATIONAL REVIEW OF EXISTING APPROACHES

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This brief summarizes a comprehensive review of international labeling policies for genetically modified (GM) food and uses it to draw lessons for policymakers in developing countries that are considering the possibility of adopting a labeling policy for GM food.

### A multiplicity of national approaches

During the last seven years, more than forty countries have adopted labeling regulations for GM food, but the characteristics of the regulations and their degree of implementation vary greatly. Among the countries with labeling laws, the only common feature is the requirement to label products derived from GM crops that are *not substantially equivalent* to their conventional counterparts, such as nutritionally enhanced GM crops. In contrast, for products that are considered *substantially equivalent* to conventional products (e.g., from 1<sup>st</sup> generation GM crops), there is a large international heterogeneity in labeling policies.

A first major dichotomy separates countries with **voluntary labeling** (e.g., Canada or Hong Kong) to those with **mandatory labeling** requirements (e.g., Australia, the European Union, Japan or China). Voluntary labeling guidelines dictate rules that define which foods are called GM or non-GM. They allow food companies to decide if they want to use such labels on their products. In contrast, mandatory labeling requires that food handlers (processors, retailers and sometimes food producers or restaurants) display whether the targeted product/ingredient contains or is derived from GM materials.

Secondly, among countries with mandatory labeling, regulations differ widely according to the following characteristics:

- a) Coverage:** countries may require labeling for a list of particular food ingredients *or* all ingredients that include detectable transgenic material; highly processed products *derived* from GM ingredients, even without quantifiable presence of transgenic material; animal feed; additives and flavorings; meat and animal products fed with GM feed; food sold at caterers and restaurants; and unpackaged food.
- b) Threshold level for labeling of GM ingredients:** can be applied to each ingredient or only to three or five major ingredients; and its level ranges from 0.9% to 5% (with the exception of China).
- c) Labeling content:** “genetically modified” item on the list of ingredients, or in the front of food packages.

One of the major differences in regulations among countries with mandatory labeling depends on whether the regulation targets the presence of GM in the *finished product* or on GM technology as a *production process*. In the former case, only products with detectable and quantifiable traces of GM materials or ingredients are required to carry a label. In contrast, in the latter case, any product derived from GM crop will have to be labeled, whether or not it contains any traces of GM material. This difference is crucial for enforcement: a product-based system can be enforced with testing equipment to filter a cheater, whereas a process-based system requires viable and trustworthy documentation systems, which will lead to identity preservation or traceability requirements for the producers and importers, but do not guarantee the absence of fraud.

Lastly, national regulations differ by their **degree of implementation**. Most developing countries with mandatory labeling laws of GM food have not implemented the laws, or have only partially enforced the laws. So far, China can be considered the only developing country with a mandatory labeling policy in place.

### What are the benefits? Observed effects of labeling policies

On the one hand, voluntary labeling has resulted so far in an increasing number of non-GM labeled products available as alternatives to GM products, giving consumers a choice between products that may contain approved GM products and those that have no GM ingredients. On the other hand, the case for mandatory labeling is largely debatable. The overall stated objective of mandatory labeling requirements is to provide consumer information and consumer choice. Labeling policies are designed to follow safety approval clearance.

A review of the effects of mandatory labeling policies shows that, in *developed countries*, thus far, this approach failed to provide consumer information and consumer choice. In these countries, only non-GM, non-labeled products are available. So, consumers have no choice but to take non-GM products. Mandatory labeling has resulted in all food processors and retailers removing any potential GM ingredients targeted by the labeling regulations, because of the expected effect of labels as a hazard warning and easy target for anti-GM activists. This hazard warning effect may be partially due to the fact that the labeling content of these regulations is not informative; in particular, it does not state that the relevant GM ingredients have been approved by the food safety authorities. In contrast, China is the only large *developing country* with a regulation in place, and it is also the only country where virtually all the products targeted by the regulation are labeled GM. China's policy targets certain products, but it does not have an explicit threshold level. Once again, there is not much consumer choice, but it does not seem to impact the decision-making of Chinese consumers.

### What are the costs of labeling?

A few studies have been published on the cost of mandatory labeling in Canada, Australia, the United Kingdom, the Philippines, and in the U.S. state of Oregon and the Canadian province of Quebec. The main costs estimates range from \$0.2 up to \$10 or even \$20 per capita per year. The only study in a developing economy (the Philippines) evaluates that mandatory labeling would result in a 11-12% production cost increase, which could translate into 10% consumer price increases.

These estimates depend on several critical characteristics, such as the threshold level (the lower the threshold, the more costly the system), the capacity of the industry to comply with requirements (the lower, the costlier), and the public authority's capacity to enforce the labeling rules. More generally, the economic effects of labeling are intrinsically linked to the presence or absence of domestically produced GM crops, and imports or exports of GM food products. The more a country produces and uses products that may contain GM food, the more costly a mandatory labeling regulation will be.

### GM food labeling in the international context

There is no international agreement, standard, or guideline on GM food labeling. The Codex Alimentarius Commission has discussed this issue for over a decade without reaching consensus on a labeling guideline. In this context, strict mandatory labeling systems adopted by importers could be found in violation of rules under the World Trade Organization (WTO).

### Conclusions: lessons learned

A number of countries have adopted labeling approaches for genetically modified (GM) food or the products derived thereof. Our review of national regulations shows that the effects of labeling approaches can vary greatly depending on the specifics of the regulation. In particular, all approaches are not successful in providing consumer choice or consumer information; some regulations are bound to be very costly; and many countries have failed to implement their own regulations. Moreover, we find that mandatory labeling policies are not recognized internationally. In this context, countries that are considering introducing a GM food labeling regulation should first ask themselves eight critical questions (see box).

- 1) Is GM labeling necessary and if so for what reason?
- 2) Is it genuinely demanded by a majority of consumers and considered a labeling priority?
- 3) If labeling is requested, what type of GM labeling approach will best fulfill its objective?
- 4) What will be the reaction of the food industry to labeling, and will it result in consumer choice?
- 5) What should be the labeling content, what are the coverage and the threshold of labeling?
- 6) How will implementation be done and at what costs?
- 7) Would the chosen labeling have any effect on the potential use of GM crop technology?
- 8) Would it be compatible with the country's general economic goals and its international obligations?

A response to each of these questions is necessary to ensure the introduction of a labeling policy serves a country's economic and social goals.

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**FOR MORE INFORMATION** Gruère, G. P. and S.R. Rao. A Review of International Labeling Policies of Genetically Modified Food to Evaluate India's Proposed Rule. *AgBioForum*, 10(1), 51-64. <http://www.agbioforum.org/v10n1/v10n1a06-gruere.htm>

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