EXECUTIVE SUMMARY
研究報告摘要

Food and Environmental Hygiene Department
食物環境衛生署

Regulatory Impact Assessment on Labelling of Genetically Modified (GM) Food
基因改造食物標籤規管影響評估

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INTRODUCTION

The Government is currently considering options for labelling packaged genetically modified (GM) food. To this end, ERM was commissioned to undertake a Regulatory Impact Assessment (RIA) and to advise the Government on the findings.

The objective of the RIA was to assess the economic impact of introducing a labelling scheme on pre-packaged GM food in the Hong Kong Special Administrative Region (HKSAR).

OPTIONS UNDER CONSIDERATION

The Study considered five options, as described below.

Option I: Voluntary labelling of GM food.

Under this option the trade can label GM food on a voluntary basis. Effectively this represents the status quo situation, where presently there are no specific regulations regarding GM-status of products.

Option II: Mandatory labelling of designated products by phases - at 5% threshold.

This option requires food products containing designated GM crops as major ingredients to be labelled. A major ingredient would be defined as one that is amongst the top five constituents of the food product by weight and as well as comprising at least 5% of the end product by weight. A 5% threshold would be allowed for these GM food products (i.e. any major ingredients with a GM content greater than 5% would have to be labelled). In addition, significantly different characteristics, such as the emergence of an allergen and changes in composition or nutritional value must also be labelled. However, highly refined food items, food additives, flavourings and processing aids are exempted from labelling requirement. The first phase would designate GM soya bean and corn (and processed food containing GM soya bean and corn) be labelled, while a second phase would add canola, potato and cotton seed to the list of designated products.

Option III: Mandatory labelling of designated products by phases – at 1% threshold.

This option is essentially the same as Option II, although with a 1% threshold for GM content in major ingredients.

Option IV: Mandatory labelling of all GM foods at 5% threshold with the exemption of highly processed food.

Under this option, GM ingredients exceeding 5% threshold in any food product would need to be labelled. In addition, significantly different characteristics, such as the emergence of an allergen and changes in composition or nutritional value must also be labelled. However, highly refined food items, food

additives, flavourings and processing aids are exempted from labelling requirement.

Option V: Mandatory labelling of all GM foods at 1% threshold with the exemption of highly processed food.
This option is essentially the same as Option IV except that the threshold is set at 1 %.

GM-free sub option

In addition, the Study also considered three sub options for GM-free and equivalent negative labelling:

- *The status quo*, where there is no specific requirement for GM-free and equivalent claims;

- *Require documentation*, where anyone making a GM-free or similar negative claim must be able to provide Identity Preserved (IP) or similar documentation to verify the status of the product; and

- *Prohibit GM-free Claims*, where GM-free and equivalent negative claims are prohibited.

FINDINGS AND BARRIERS TO IMPLEMENTATION

Cost Implications to the Food Trade

The financial analysis suggests that there will be cost implications for the food trade under Options II to V. Under Option I (status quo) there are no increases in costs to the trade.

The majority of these cost impacts are likely to be in the first year when companies examine, potentially reformulate and test their products to ensure compliance with the legislation.

These financial costs to the trade range between HK$ 16 million (lower bound for Option II) to HK$ 91 million (upper bound for Option V).

Options IV and V are significantly more costly than Options II and III (HK$ 47 million to HK$ 91 million vs HK$ 16 million to HK$ 46 million). This difference is principally attributable to the more inclusive nature of Option IV and V, which cover all food ingredients rather than the top 5 ingredients (as is the case for Options II and III).

Furthermore, analysis suggests:

- Under all options, the costs to the trade could increase significantly when, and if, more GM crops are commercialised. For Option V the costs could increase by up to 64%, for Option IV the costs could increase by up to 34%, for Option III the costs could increase by up to 51% while under Option II the costs could increase by up to 28%. The relatively higher potential increases under Options III and V reflect the more stringent 1% threshold under these options.

- If companies choose to label their products as containing GM ingredients instead of reformulating (to avoid labelling) then the overall impacts on the trade are likely to be lower. However, this approach is unlikely given that objections to GM foods are often more widely publicized than advantages advanced by proponents of GM food or scientific safety assessment. Thus companies would not want to risk losing market share. One manufacturer stated that even a loss of 5% of market share would not be acceptable and therefore it would convert to non-GM.

- The magnitude of the cost implications to the trade is understandably sensitive to assumptions made about the costs associated with reformulating and maintaining GM-status. While the Consultant has sought to make these assumptions as accurate as possible, it should be recognised that considerable uncertainty exists as to how individual food companies will react to the legislation, and hence there is uncertainty in the value of the overall impact on the trade. Costs will be product and company specific.

- Small importers of some product lines may be significantly impacted by the proposed options. This will be the case if they are unable to secure contractual agreements with the product manufacturer as to the product's GM-status. This could result in some products being dropped from the market, especially those products that are not imported in significant quantities and that are not sold in jurisdictions with existing GM labelling requirements (such as Europe, Australia, New Zealand, Japan and Korea).

- Some smaller local manufacturers could be significantly impacted during the first year of implementation of any of the options. It is noted, however, that for most manufacturers these costs are unlikely to be significant and if the costs could be diluted over a longer period of time (more than one year), then the actual impact on the company's revenues and profits might not be significant. In the current economic climate it is unlikely that the costs incurred will be recoverable from retailers.

Costs to the Economy

As is the case for the financial analysis, Options II to V will have significant economic costs to Hong Kong. Under Option I (status quo) there are no increases in costs to the economy.

The only difference between the *economic* and *financial* costs are the enforcement costs which range between HK$ 1 million and HK$ 5 million per annum (depending on the enforcement strategy adopted).

However, as for costs to the trade, the majority of economic cost implications are likely to be in the first year when companies examine, potentially reformulate and test their products to ensure compliance with the legislation.

These economic costs range from HK$ 25 million (lower bound for Option II) to HK$ 130 million (upper bound for Option V). As for the financial analysis,

Options IV and V are significantly more expensive than Options II and III (HK$ 55 million to HK$ 130 million vs HK$ 25 million to HK$ 84 million).

Cost to Consumers

Discussions with food manufacturers and retailers suggest that the costs associated with achieving a certain GM-status are unlikely to be passed onto consumers. Indeed, Hong Kong based food manufacturers and retailers who have already undergone reformulation note that it has not changed their retail price – in reality their retail prices are a response to market pressures and have, in some cases, been decreasing.

However, in order to illustrate the maximum possible impact in the unlikely event that any costs are passed onto the consumer, the financial impact as a percentage of household expenditure on food was calculated. This analysis suggests that the maximum possible impact on overall food prices could be between 0.03% (for Option II) and 0.10% (for Option V) in terms of household expenditure.

GM-Free Scenarios

The trade may label their products with GM-free or similar negative claims on a voluntary basis because of the potential market niche for these products and they would like to inform their customers of the "non-GM" nature of their products. The Study examined the impact of regulating GM-free or equivalent claims on those products that already carry such claims. Two GM-free scenarios were compared against the status quo. The first requires those making GM-free or similar negative claims to provide sufficient documentation to verify the status of the product. The second prohibits the use of GM-free and equivalent negative claims.

The analysis suggested that prohibiting GM-free and equivalent labelling is likely to incur less costs than requiring them to produce IP documentation. However, prohibiting GM-free and equivalent negative labelling might limit consumer choice. On the other hand, the additional cost for producing IP documentation would likely be borne by overseas manufacturers while the costs of re-labelling are more likely to fall on Hong Kong companies (e.g. importers and retailers).

Summary of Findings

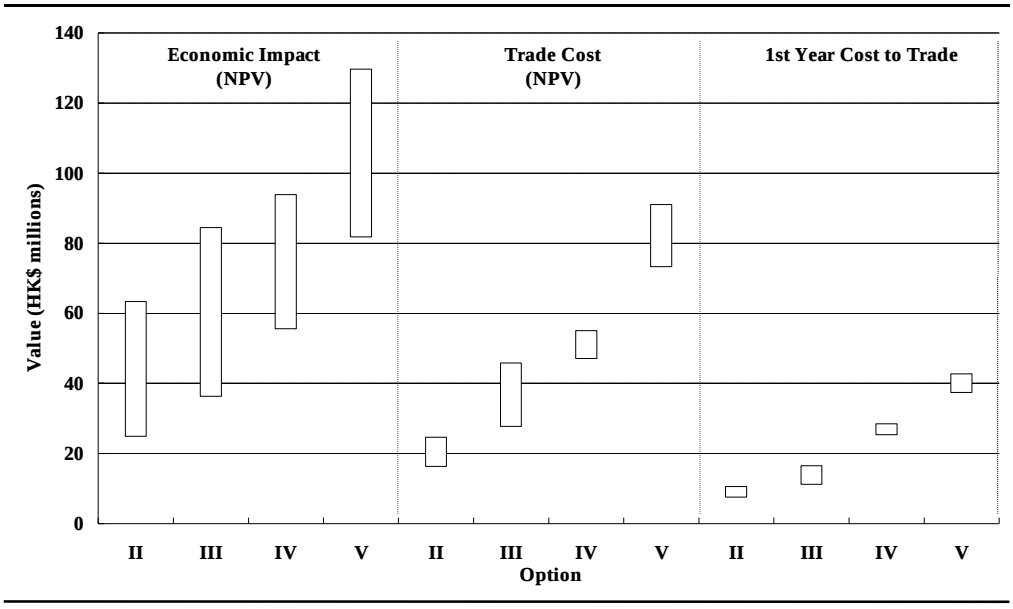
Table 1 and *Figure 1* present the results of the economic and financial analysis.

Table 1 Cost Implications (HK$ millions)

Option	Economic Costs (Net Present Value)		Trade Costs (Net Present Value)		1st Year Costs	
	Min	*Max*	*Min*	*Max*	*Min*	*Max*
I	-	-	-	-	-	-
II	25	63	16	25	7	11
III	36	84	28	46	11	17
IV	55	94	47	55	25	28
V	82	130	73	91	37	43

Note: The min scenario assumes that highly refined products such as oil and high-fructose corn syrup (HFCS) are not reformulated (as they would be exempted). The max scenario assumes that these products (oil and HFCS) are reformulated to ensure that any DNA that might be detected is not of a GM type.

Figure 1 Cost Implications (HK$ millions)



Barriers to Implementation

If the Administration chooses to proceed with any of Options II to V the following issues are likely to impact on the implementation of the selected option:

- *Lack of International Consensus on GM Labelling.* Different jurisdictions in the Asia Pacific region, and beyond, have adopted different approaches, terminology and wording requirements for GM and GM-free labelling of food. In addition, the international community, in the form of the Codex Alimentarius Commission of the United Nations, is still working towards a consensual policy on GM food labelling. Agreement is unlikely before 2004. Since Hong Kong has always taken Codex as reference in formulating its food labelling regime, the introduction of a scheme in Hong Kong that does not align with any eventual agreement by Codex and regional schemes would mean further legislative change and would place additional costs on the Hong Kong's food trade as well as confuse

consumers.

- *The Future of GM Crops.* New GM crops are continually being developed and commercialised. As such there remains considerable uncertainty over the extent of the financial and economic impact of any GM labelling scheme. If a lot more GM crops are commercialised, and in the absence of any international agreement on their labelling, the impact on the Hong Kong food trade could be higher than that predicted by this Study.

- *Lack of International Consensus on GM Testing.* International consensus on GM detectability and quantification limits and methodologies has not yet been reached. The lack of international consensus raises the issues of which limits and methods the HKSAR Government should adopt and whether these should be mandated to the food trade. In addition, if these limits and methods were not agreed prior to the implementation of GM labelling regulations, the lack of internationally accepted standards might preclude effective enforcement by the Administration.

- *Proficiency Certification of Independent Laboratories.* A query raised by stakeholders was the reliability and independence of laboratories. Some manufacturers would like to see a certification scheme for testing laboratories, to verify the quality of the services that they would receive and to ensure that their products meet the requirements of export markets and any labelling requirement that the HKSAR Government is to implement. This raises the issue as to whether the HKSAR Government should provide such an accreditation scheme prior to the implementation of any regulations mandating GM labelling. It should be noted, however, that accrediting private laboratories would require much time and human resources.

- *Difficulties with Top 5 Ingredients Approach.* Companies change ingredients and suppliers on a continual basis. A label may state emulsifier but this might be comprised of three different emulsifiers. Companies would be reluctant to give compositional analysis by particular ingredient, as this is proprietary brand-specific information and commercially highly sensitive. Further, it was suggested by one of the testing laboratories that it can be difficult to establish which ingredient within the food product is responsible for the novel GM-DNA detected. For example, if one of the top 5 ingredients had GM content of 3%, whilst another had a GM content of 5% or above (but is not one of the top 5 ingredients), the food product when tested may register novel GM-DNA content over the threshold. In order to prove the product met the requirement of the standard, the food producer would need to provide details of the ingredients to the regulatory agency and further testing would be required. Again, the company may be reluctant to share this commercially sensitive information.

- *Documentation.* There are currently no international standards on IP and similar documentation systems for certifying the GM content of products. As such, the introduction of any labelling scheme, whether negative or positive labelling, that relied on such documentation could be problematic.