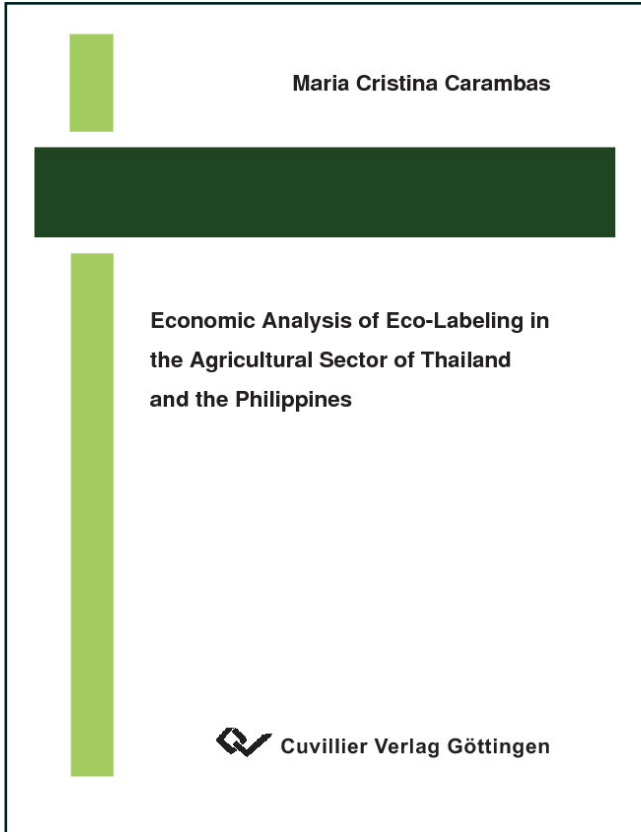




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**Economic Analysis of Eco-Labeling in the Agricultural Sector  
of Thailand and the Philippines**



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# 1 INTRODUCTION

## 1.1 Background

Eco-labeling, like the other types of environmental labeling (i.e. mandatory and self-declarations), is the practice of supplying information on the environmental characteristics of a commodity to the general public (Markandya, 1997). It can be distinguished from the other types based on three major respects: (i) it is voluntary; (ii) it provides information on the impact on the environment of the production process, rather than the consumption of a product (van Ravenswaay, 1996); and (iii) it is based on a set of environmental standards, and therefore requires a third-party certification.<sup>1</sup>

As a market-based approach to reduce environmental impacts of production, eco-labeling is applied with the assumption that the purchasing behavior of consumers is not just motivated by price, quality, and health standard, but also by environmental or ecological objectives (Deere, 1999). Eco-labeling achieves its environmental purpose by influencing change in the purchasing behavior<sup>2</sup> of the consumers in a way that creates incentives for the production of less environmentally harmful products. More often than not, the incentives may include a price premium,<sup>3</sup> which manifests the consumers' willingness to pay relatively higher prices on the basis of positive environmental impacts of eco-labeled products.

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<sup>1</sup> Based on these characteristics, another emerging important label, i.e. fair trade label, may be considered an eco-label. This is due to the fact that its increasing standards now include environmental criteria to complement its original standards that primarily focus on social concerns.

<sup>2</sup> With eco-labeling, environmentally conscious consumers are able to distinguish and choose which product to prefer. Eco-labeling, therefore, addresses the market failure (of internalizing the environmental impacts of production) due to asymmetric information.

<sup>3</sup> Price premium is defined as the percentage by which the price of organic product is above the price of a similar conventional product.

Eco-labels are more widely used in manufactured products. The eco-labeling standards are usually based on the characteristics of the product that may damage the environment during consumption (consumption externality). In the agricultural sector, eco-labeling of products is gaining ground. In contrast to manufactured products, the eco-labeling standards for agricultural products are primarily based on the impact of production process on the environment (production externality). At present, labeling of agricultural products differs in terms of the comprehensiveness of environmental standards, i.e. whether the standards refer to a single environmental impact of a production process (e.g. dolphin-safe tuna fishing), or to multiple environmental impacts (i.e. impacts not just of the production process but also of the inputs and outputs) (van Ravenswaay and Blend, 1997). The latter category is concerned with lifecycle analysis, or the impacts of a product on the environment during its lifecycle. This is exemplified by organic labels, to some extent, as certification covers not only the inputs and techniques employed in the production, but also the inputs and methods used in processing the products.

Eco-labeling schemes in the agricultural sector exist in two product groups: (i) food products, e.g. coffee, tea, cocoa, fruits and vegetables (fresh and dried), juices, spices and herbs, nuts, oil crops and derived products (palm oil, sunflower oil, etc.), cereals and grains, sugar, meat, dairy products, and eggs; and (ii) nonfood products, e.g. flowers, animal feeds (for production of organic meat, dairy products, and eggs), cosmetics, textiles (cotton, leather, and leather goods), and natural pesticides and insecticides.

While eco-labeling was initially popularized in the developed countries of the European Union (EU), the United States (US), and Japan, a few developing countries, including Thailand and the Philippines, have recently joined the ranks. During the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, Brazil in 1992, governments agreed to “encourage expansion of environmental labeling and other environmentally-related

production information programs designed to assist consumers to make informed choices (Deere, 1999).” Indeed, the use of environment labels and eco-labels is now widespread. Eco-labeling, for instance, can be found at national, regional, and international levels (Grote, 2002). Currently, there are more than 30 countries<sup>4</sup> with extensive national eco-labeling programs, including the Nordic countries that have established their regional eco-labeling. Most of these countries (26 as of 2001) have organized themselves into an international organization, known as Global Eco-labeling Network, since 1994 to: (i) promote and develop eco-labeling of products and the credibility of eco-labeling; (ii) improve the availability of information regarding eco-labeling standards from around the world; and (iii) to foster harmonization across programs, among other things (GEN, 2004). At the international level, too, eco-labeling that pertains to environmental management of a business enterprise, a public administration, or a government department is now being certified by the International Organization for Standardization (ISO), specifically based on the standards set under ISO 14000.

With regard to organic labels, the International Federation of Organic Agriculture Movement (IFOAM) has set the basic standards and guidelines on which development of national standards and accreditation of national certification may be based. The EU, the US, and Japan have set their own labeling and certification standards that are not necessarily equivalent to those of IFOAM's. In view of this, some developing countries formulated their certification and labeling standards consistent with the relevant international standards. Generally, the labeling of the products of about 130 countries involved in certified organic production (Grote, 2002), is certified either by their respective national or foreign certifying agencies depending on whether the

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<sup>4</sup> Figure based on available data in Basu, *et al.* (2003).

product is internationally traded or not, and/or whether the national certifying agency, if any, is recognized by the importing country.

Unlike other eco-labels that are aimed at reducing environmental impacts over the entire life cycle of a product without specifying the production practices, organic labels specify the production method without requiring proof of environmental improvement (van Ravenswaay, 1996). In addition, labeling of organic products may signal qualities pertaining to health and safety<sup>5</sup> other than environment-friendly production system. Notwithstanding these, certified organic products are considered eco-labeled in view of the following: (i) organic label indicates (to the consumer) that a product was produced using certain production methods, thus rendering the label a *process claim* rather than a *product claim* (FAO, 1999); (ii) its certification and labeling are based on standards and criteria that are aimed at reducing the environmental impacts of the production system; and (iii) research, field trials, and farm experience evince that organic is more environment friendly with respect to lower pesticide residues, richer biological diversity, and greater resilience to drought (FAO, 2000; Greene, 2004). With reference to the basic standards, organic production approach fosters not only the use of organic inputs instead of the chemical and synthetic ones, but also the maintenance of soil fertility as well as protection of water quality and biodiversity (FAO, 1999; van Ravenswaay and Blend, 1997).

Although environmental reasons dominate the arguments for eco-labeling, there are also other important motivations for this practice that concern trade and development (Grote, 2002). In particular, eco-labeling may be

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<sup>5</sup> Studies show that the reasons of consumers for purchasing (and of retailers for distributing) organic products are similar across countries in the EU, the US, and Japan; these are taste, freshness, quality, health, and food safety (Lohr, 2001). Environmental protection comes as a secondary reason, but ITC (1999) has noted inconsistencies in several countries between political views of self-described environmentalists and the consumers' shopping habits. In Europe, consumers do not consistently select organic food products according to their environmental impact (Lohr, 2001). Notwithstanding this, the consumption of these products contributes to the reduction of environmental impacts of the production process used.

used to improve market share and competitiveness of a traded product. Or, in view of developmental objectives, it may also be used to promote exports from developing countries and/or to improve working conditions in the production sites. Considering the varied motivations for which eco-labeling can possibly be applied, it is not surprising that some relevant issues about eco-labeling are not limited to environmental goals and standards, but have crossed trade concerns. For example, one major issue that has been frequently raised in a number of studies involves the use of eco-labeling as a non-tariff barrier for trade protection (Grote, 2002).

This study focuses on organic labels. In the succeeding chapters, the term eco-label will be used interchangeably with organic label. The analyses will focus on the stakes of the producer-farmers as issues that relate to market and the environment are tackled.

## **1.2 Review of the Literature**

This section summarizes the body of existing knowledge on eco-labeling, including the gaps that served as the bases for narrowing the focus of this study. Overall, the subject of eco-labeling both in general context and in specific reference to organic labels has drawn quite a number of studies that deal largely with its implications on the domestic market and trade, on the one hand, and its effectiveness in achieving environmental goals, on the other hand.

### **Eco-labeling and the Environment**

Since eco-labeling primarily carries an environmental objective, most of the studies undertaken have been an attempt to assess its effectiveness to achieve its goal. Most of them have emphasized the positive environmental impacts of eco-labeling. This is particularly noted when labeling involved organic production, which the studies found to: (i) clearly perform better relative to

conventional farming with respect to floral and faunal diversity, (ii) be the least detrimental farming system in terms of wildlife conservation and landscape, (iii) have the tendency to conserve soil fertility, and (iv) have lower leaching rates and lower energy consumption (Stolze *et al.*, 2000; Greene, 2004).<sup>6</sup>

However, the magnitude of its impact as Grote (2002) argued, depends on the production area (see also Greene, 2001), consumers' willingness-to-pay, and market potential or demand of eco-labeled commodities; the latter factor depends, in turn, on the consumer awareness and understanding of eco-certification (Deere, 1999; Granatstein, 2001; Wessels *et al.* 1999). Since the producer's incentives to produce are based on consumer demand and the consumer's willingness-to-pay, the effectiveness of eco-labeling will, first and foremost, depend on whether it enables consumers to internalize the non-market benefits of the product and results in the consumer's willingness to pay for it. In this regard, Grote *et al.* (1999) showed that if consumers perceive labeled products as private goods, i.e. consumers can internalize their non-market benefits and are willing to pay (Nunes and Riyanto, 2001), then labeling does help in altering the incentives of producers in developing countries to shift to eco-friendly methods of production. In addition, labeling cannot have adverse effects in the sense that demand or supply of unlabeled-eco-unfriendly products may increase.

Other studies have dissenting views. For example, Tian (2003) showed that raising the environmental standards of traded products through eco-labeling may damage the environment if eco-labeling leads to higher market prices but lower net prices (i.e. net of the resulting lower prices for conventional products and higher prices for eco-labeled products), and if demand is elastic with respect to the adjusted price. Meanwhile, Mattoo and Singh (1997) showed the

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<sup>6</sup> There are a vast number of studies on the environmental impacts of organic farming (see Chapter 3). The literature cited here are only a few of the literature that cited the positive environmental impacts of organic farming with particular reference to eco-labeling.

importance of environmental awareness (of the consumers) in avoiding adverse effects of lowering price of eco-labeled products when supply is greater than demand. In particular, the width of awareness is better than the depth (Mattoo and Singh, 1997). Teisl *et al.* (1999), on the other hand, showed that the impact of eco-labeling may not be as promising as expected since eco-certification is likely to affect rankings rather than the choice of product, albeit rankings depend on the consumer's environmental orientation and educational level.

### **Eco-labeling and its Market/Trade Implications**

The most prominent trade issue related to eco-labeling concerns its possible use as a non-tariff barrier, which some studies confirm as possible unless the standards and criteria used are harmonized and transparent (Vossenaar, 1997; Verbruggen *et al.*, 1997; Grote and Kirchhoff, 2001; Grote, 2002). Specific instances when standards for eco-labeling served as trade barrier were observed in pulp and paper, textiles, flower, and timber markets (UNCTAD, 1995). This negative impact on trade is particularly due to high cost of compliance. In view thereof, studies (e.g. Markandya, 1997; Grote, 2002) argued and showed that the magnitude of impact of eco-labeling on trade depends on how the benefits of a price premium and market shares compensate for the cost of compliance (particularly the cost of certification). This is also the same argument used by van Ravenswaay (1996) to determine whether it is worthwhile to apply eco-labeling at the marketing standpoint. Likewise, with regard to producers' incentives, van Ravenswaay and Blend (1997) summarized the conditions needed for eco-labeling to be effective in encouraging producers to adopt innovative environmental technologies. These are: (i) consumers put more value on eco-labeled products than conventional, and (ii) the difference between the values is greater than or equal to the marginal costs.

At the national level, UNCTAD (1995) noted that in general, most developing countries undertake eco-labeling primarily due to the demand in the