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## **Agricultural Imports from Developing Countries and the Socio-economic Effects of Emerging Carbon Label Initiatives: What can be Learned from the European Label Initiatives of Food Products?**

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### **Abstract**

Climate change caused by global warming poses a challenge for the current and future generations. Temperature stabilisation is necessary to avoid major changes of ecosystems; the success will depend on the degree of emissions in the next decades. One strategy to reduce CO<sub>2</sub> emissions is the introduction of a so-called carbon label related to climate change relevant gas emissions of a product. Several countries, supported by private industry, have already started to introduce labels (UK, Switzerland, Japan), other countries are still in the planning process (Germany). Different strategies exist on what is measured, how, if the label is linked to a comparative advantage over other products or if it obliges also to a reduction of emissions. The proposed labels are adding to the abundance of existing standards and labels. Quality (*e.g.* GlobalGap), environmental (*e.g.* organic, water/energy efficiency) and social (*e.g.* fairtrade) standards and labels are especially predominant in agricultural-based products but become increasingly important in all economic sectors. Until now, all labelling initiatives are developed in industrialised countries. Due to international trade, these standards and labels affect also developing countries, their emerging industries as well as their agricultural sector.

Based on intense literature analysis, the study identifies the historical development of environmental and social labels used for European food products. We look at the effects on the agricultural sector in developing countries and ask which lessons can be learnt for the design of a carbon label? What kind of strategy could reduce the confusing complexity of too many different labels aiming at the same output of reducing CO<sub>2</sub> emissions? What might be potential socio-economic impacts of a carbon label on farmers and their agricultural products from developing countries?

Current existing standards show a development from private initiatives on a country level to Europe-wide regulations. Debates regarding the regulations and initiatives for carbon labels focus mainly on measurement issues. Trade-offs between social development and environmental protection are expected to increase over time and impacts may range from better market integration to market exclusion of (small-scale) farmers in developing countries. The effects will also depend on the respective carbon label regulation.

**Keywords:** Carbon label, climate change, market integration, social development