Chapter 44
Environmental Sustainability Initiatives in the Agrifood Supply Chain

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ABSTRACT

The aim of this study is to identify a wide range of environmentally sustainable initiatives in food supply chain operations and activities. Data for this pilot study were collected through a questionnaire survey. The questionnaire consisted of nine questions. The survey was distributed through email, both as an online link as well as an electronic document that could be returned via email or in hardcopy. A total of 214 UK-based companies involved in the Agrifood products distribution sector were contacted. A correlation analysis shows that company perceptions about factors affecting decisions for the implementation of sustainable practices shares a relationship with the company's expectations when applying sustainable initiatives. Further research built on this preliminary study will lead to the development of a model that will enable adoption of sustainable measures based on a needs and strengths analysis of the companies.

INTRODUCTION

The current economic climate has resulted in companies taking more decisive action in addressing their business performance and identifying sources of waste. In Europe, companies revise their strategies/policies to address potential economic problems as well as changes in national and EU environmental policies. As most organisations rely on some form of supply chain for provision of their goods and services, the sustainability dimensions is one area that needs to be addressed. This is apparent in the case of the Agrifood Sector, responsible for a large environmental impact which extends

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from credence attributes – physical and process related, as well as transportation and distribution channels. The agrifood chain sector is responsible for a large environmental impact (Dutaur and Verchot, 2007; Prather et al., 2001; Reicosky et al., 1999). It is currently heavily dependent on non-renewable energy resources and on the use of chemicals for profitable production (West and Marland, 2002). In this situation, a new and more sustainable approach to food production has been developing supported by integrated and efficient production systems, allowing the transformation of agricultural products and delivery to final consumers with a lower use of natural resources, and with lower pollution levels (Mosier et al., 2006). In Europe, the agrifood sector is responsible for about 30% of all carbon emissions from economic activities (UNEP-DTIE, 2011). Within this sector, it has been estimated that agriculture contributes about 49% of the GHG emissions from the food supply chains of the EU, consumer preparation and food consumption accounts for 18% and manufacturing for 11% of emissions. Reducing emissions from food transport has been a significant trend among retailers through using logistical arrangements such as backhauling and pooling to improve efficiency (Garnett, 2003). A generic input/output model summarising the environmental impact of Agrifood supply chains is introduced in Figure 1.

In the centre, we have the supply chain operations. At each stage, we have different types of inputs necessary for operations such as growing, processing and transporting while on the other side we have the outputs as the unavoidable externalities which are growing as inputs increase.

Figure 1. An input/output model for the environmental impact of agrifood supply chains