Chapter 8

The Evolution of the Feed Industry Towards Its “Sustainabilization”

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ABSTRACT

Livestock production requires important amounts of resources, which are limited. Therefore, the feed industry is under pressure to combine food security and sustainability. Hence, it is going through an important process of remodeling (both in focus and in practice). The feed industry should make good use of this context as a way to evolve towards a more sustainable future, and constitute itself as a player in global sustainability efforts. The present chapter reviews the concept of quality (using meat products as model) and gives examples of how to modulate animal products healthiness/safety and reduce the environmental impact of the sector through animal feeding practices. Finally, it provides an overview of the main research areas and ongoing projects that the main global organizations involved in the feed sector are currently running in order to successfully overcome sustainability challenges.

INTRODUCTION

Consumers’ Behavior Toward a More Sustainable Food System

Different facts and episodes surrounding the food industry (food waste, groundwater pollution, etc.) have lead that consumers’ attitudes and preferences have been turning greener during the last two decades. However, this shift is not being fast enough
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(sustainability is an issue needing urgent solutions) and is not always converted into changes in the purchasing behavior.

Due to this, consumers’ behavior must be modulated through marketing strategies and product modifications (labeling, production system, composition, etc.). This is particularly important in the livestock sector, due to the environmental impacts of some production systems. An important part of the such impacts come from the great nutritional needs of the animals, which requires rethinking the feeding system and the feed industry. This is why this sector is presented as a case for the present chapter.

BACKGROUND

The Sustainability Crisis, Livestock Sector Externalities, and Global Population Trends

From a historical perspective, pro-growth economic policies have encouraged rapid accumulation of natural, financial and human capital. As a result, an excessive depletion and degradation of natural resources has been experienced in conjunction with a strong impact on social, environmental and economic equilibria (Orecchini, Valitutti, & Vitali, 2012).

Sustainability challenges call for urgent action. They are multitudinous, urgent, and complex. They are beyond the capacities of our current institutions to address, caused by path-dependent behaviours, and require substantial change from systems with crippling inertia (van der Leeuw, Wiek, Harlow, & Buizer, 2012).

Global population and food demand for animal products is predicted to increase globally (FAO, 2006). However, livestock production requires important amounts of resources (feed, land, water) which, in turn, are limited. Due to this, it is necessary to increase the sustainability and efficiency of the livestock sector, where the feed industry has great potential and role to play. Beef is one of the productions on the spotlight, as it makes a substantial contribution to environmental pollution. Globally, beef supply chains are estimated to emit about 2.9 gigatonnes of CO2-eq, about 40% of all livestock emissions using a life-cycle approach (Gerber, Henderson, Opio, Mottet, & Steinfeld, 2013). However, it also has great positive environmental externalities (Escribano, 2016a).

Moreover, it is necessary to take into account ruminants’ great contribution to food security (providing protein, energy and also essential micronutrients). Also, they can be fed reducing the human-animal competition for food-feed, as well as the effect of grazing in the revaluation of pastures and lands. Finally, their positive contribution as carbon sinks should not be forgotten, despite it not being accounted for in certain environmental impact studies (Gerber et al., 2015; Escribano, 2016b).
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