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The Cost of Milk: Environmental Deterioration vs. Profit in the New Zealand Dairy Industry

A thesis submitted in partial fulfilment of the requirements for the degree of Master of Environmental Management

Institute of Agriculture and Environment

Massey University

Palmerston North

New Zealand

Kyleisha Jade Foote

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Abstract

In the past two decades major increases in production have occurred in the New Zealand dairy industry. Between 1990 and 2012 the dairy cow population increased by 87%. Milk production increases were double this (195%) over the same period, while the land area used for dairy production increased by 46% between 1993 and 2012. This intensification of production has required the use of externally sourced inputs, particularly an increase in fertiliser, feed supplements, and irrigation.

Dairy intensification has been associated with increased environmental impacts. Water quality in lakes, rivers and streams is declining, particularly in catchments with a predominance of dairy farms. Soil physical properties are worse on dairy land than other farming types and soil contamination on dairy land is reaching concerning levels. Furthermore, dairy farms are responsible for about a quarter of New Zealand's greenhouse gas emissions. Additionally, there are a range of offshore impacts relating to the importation of products used for dairy farm production under this intensified regime. New Zealand's 'clean green' brand is important for the dairy industry as well as other primary producers and international tourism. New Zealand's environment must live up to this brand to provide creditability to its products.

These environmental impacts not paid for by the farmer are termed environmental externalities. Most of the pollution caused by dairy farming is not currently remedied or paid for by the dairy industry. Hence, the public is largely left to deal with these externalities, both regarding the economic costs and the environmental degradation that occurs. The aim of this thesis was to compare the cost of the environmental impacts of dairy farming in New Zealand with the economic value (export revenue) of dairy and thus establish a clearer position and understanding of the actualised value of this industry. A conservative estimate of the economic costs of some of the externalities and imports were over $19 billion, much higher than the 2012 dairy export revenue of $11.6 billion. It is likely that this is a severe underestimate of the actual value of the environmental externalities given all that was not measured.

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Mihi ki ā Papatuanuku, mihi ki ngā tangata, mihi ki ngā awa.

For Mother Earth, for the people and for the rivers.

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