SUSTAINABILITY INITIATIVES IN THE AUSTRALIAN SUGAR INDUSTRY

By

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Abstract

THE Australian sugar industry has weathered a number of poor seasons and some have questioned its survivability. This paper identifies opportunities that exist for the industry in the form of new farming systems, development of improved value chain relationships, farm and mill rationalisation, best practice farming, best practice harvesting, improved harvest scheduling and season length readjustment. It identifies activities that have commenced in virtually every area to take up these opportunities. It suggests that further development of an effective, collaborative value chain approach and access to capital are the main challenges facing the industry at present.

Introduction

The Australian sugar industry is very exposed to variations in the world price of sugar and the relative value of the Australian and US dollars. Under current circumstances, that puts great pressure on the economic viability of all segments of the Australian industry. The succession of poor growing seasons in recent years has increased the financial strain.

This paper examines initiatives that have been or are being undertaken to address this issue and, in particular, to reduce the cost structure and to improve the economic and environmental sustainability of the Australian sugar industry.

This paper first considers some of the opportunities that exist to address these sustainability issues and then describes the practical ways in which the industry is structuring itself so that it can implement these improvements.

Potential opportunities

The following have been selected as representing the most important opportunities available to improve economic and environmental sustainability in Australia. They demonstrate initiatives available on farm, in harvest and transport systems, and at the mill.

New farming systems

A comprehensive new farming system has been developed (Garside et al., 2004). This involves controlled traffic, spacing of inter-rows to match machinery, dual rows of cane in permanent beds, legume fallow planted on raised beds, planting with a dual-coulters planter, and zero till cultivation. This system improves yields, reduces costs, replaces inorganic nitrogen fertiliser in the plant crop, improves soil health, reduces compaction of the cultivated area, and virtually eliminates offsite movement of soil, fertiliser and chemicals. It could therefore be an important contributor to economic and environmental sustainability and the opportunity exists to improve uptake of this system, in whole or in part.

Development of improved value chain relationships to enhance regional planning

By definition, an effective value chain achieves vertical integration of businesses in a supply chain through joint strategic planning, transparency, trust and respect. Effective value chains have a number of benefits in reducing transaction costs and allowing businesses access to new resources. A review of sugar industry value chains in Queensland (Milford, 2002) found that, compared with other Australian agribusinesses, the sugar industry scored lowly in the areas of awareness, trust, efficiency, transparency and rewards. These must be addressed if the benefits that result from the effective value chains are to be realised.
Farm and mill rationalisation

Hanlon et al. (2000) and the Boston Consulting Group (BCG, 2003) have shown the cost benefits of increasing farm scale; moving from 60–70 hectares to 300–400 hectares could save 3%–7% of costs. Farms of under 60 ha comprise 45% of the total number of farms in Australia, but produce only 16% of the cane. Increasing farm scale facilitates introduction of new technology by allowing innovations to be trialled over a significant area and relatively quickly transferred to the rest of the farm. The opportunity to increase farm size may be assisted through a recently-announced provision of assistance for farmers exiting the industry (DAFF, 2004). Mill rationalisation also demonstrates potential for cost savings, but transport interconnection costs in some areas are high.

Best practice farming

Although there is no correlation between farm size and yield, CANEGROWERS data shows that there is a large difference in productivity between the highest and lowest performers. The opportunity to raise the productivity of the lower performers has been recognised and does not appear to necessitate the use of new technologies. Rather it requires a more uniform take-up of existing management skills.

Best practice harvesting

All cane in Australia is mechanically harvested, with up to 80% cut green. Harvesting practices could be improved (Sandell and Agnew, 2002); losses of cane and juice occur at all stages as cane passes through the harvester (Davis and Norris, 2001). They are exacerbated by high harvester ground speeds and over-fastidious attempts to remove trash. Losses can be reduced by proper set-up of harvesters and by reduced ground speed and extractor revolutions.

Harvest scheduling

The most common harvesting arrangement at present is for a farmer to contract to harvest four to six other farms. Each farm is visited five or six times per season and the percent of each farm cut is kept equal throughout the season. This reduces the flexibility to cut cane to optimise sugar content over the crop; up to 10% extra yield can be gained by proper selection of time of harvest (Muchow et al., 2000). Greater flexibility can reduce harvesting and transport costs and better utilisation of capital equipment would occur if harvesting were spread over 24 hours instead of the present restriction to mainly daylight hours (Higgins and Davies, 2004). However, this would be offset against some cost in social disruption and, possibly, lower quality cane because of reduced visibility and dew.

Season length

Expansion or mill rationalisation could, in some cases, be achieved more economically by extension to season length (BCG, 2003). Under current payment arrangements, this reduces growers’ incomes; new commercial arrangements are required to compensate.

Taking up opportunities

A number of significant initiatives have been put in place in virtually every region in order to develop these opportunities. While most of these have arisen on the initiative of industry participants in their own mill areas, they are being given further impetus by the requirement under the Sugar Industry Reform Program 2004, to put in place regional plans by the end of 2004. Examples are:

- The ‘Cane Productivity Initiative’ in mill areas owned by CSR Ltd. Under this initiative, regional industry boards have been set up and are meeting frequently to develop strategic plans and coordinate activities between growers and millers. They are improving value chain relationships, implementing best practice farming and harvesting, and reviewing season length and harvest schedule issues (Juffs et al., 2004).
- Farmer cell groups for extension are in operation in a number of mill areas. Groups of 10–20 meet regularly on-farm with extension personnel, with farmers setting their own agendas for extension and research, appropriate to their requirements. They are tackling the adoption of new farming systems and best practice farming.
- Cooperative programs for industry development are operating in a number of mill areas. These include coordination of harvesting, better data transfer between mill owners, harvesters and growers, and exploration of new management systems (Crane and Fleming, 2003).

Further challenges

In order to convert sustainability opportunities into reality, it is suggested that there are two vital steps. The first is further development of effective, collaborative, value chain relationships in the industry.
Within such groupings, correct identification of the economic benefits that accrue to all parties from changes to the status quo can be made. This process will, no doubt, identify requirements for reorganisation of farming, harvesting and milling systems. This will, in turn, lead to the identification of the second necessity, access to capital. The industry must find ways to access such capital by demonstrating the commercial benefits of restructuring activities.

While this paper has concentrated on the specifics of what is happening in the Australian sugar industry, all sugar industries that are exposed to the low world price for sugar or are otherwise facing reduced income from their sugar exports are also feeling the pressure of reduced viability. It is hoped that the examples provided here will provide some food for thought to other participants in the international sugarcane industry.

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REFERENCES


INITIATIVES POUR LA DURABILITE DE L'INDUSTRIE SUCRIERE AUSTRALIENNE
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Résumé
L'INDUSTRIE sucrière australienne a connu des périodes difficiles, poussant certains à mettre en doute sa survie. Cette communication identifie les possibilités qui s'offrent à l'industrie à travers de nouveaux systèmes de production, le développement de relations améliorées dans la chaîne de valeur, la rationalisation de l'exploitation agricole et de l'usine, de meilleures pratiques de culture et de récolte, une planification appropriée de la récolte et un réajustement du cycle de la canne. Les activités qui ont déjà démarré dans pratiquement tous les secteurs ont aussi été identifiées. Il en ressort qu'un renforcement du concept – à la fois efficace et commun – de chaîne de valeur et la disponibilité du capital sont parmi les plus grands défis auxquels l'industrie doit faire face aujourd'hui.

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Resumen
LA INDUSTRIA azucarera Australiana ha pasado por un número de malas temporadas y algunos hasta han cuestionado su supervivencia. Este documento identifica las oportunidades que existen para la industria bajo la forma de nuevos sistemas de manejo para fincas, desarrollo de mejores relaciones de cadenas de valor agregado, racionalización de fincas e ingenios, mejores prácticas de fincas, mejores prácticas de zafra, mejores programaciones de zafra y reajustes en la duración de la temporada. Identifica actividades que han empezado virtualmente en cada área para aprovechar estas oportunidades. Sugiere que un mayor desarrollo de un enfoque de cadena de valor agregado efectivo y colaboracionista, así como el acceso al capital son los mayores retos que afronta la industria en la actualidad.