

SUSTAINABILITY AND THE AUSTRALIAN SUGAR INDUSTRY

By

MATTHEW KEALLEY and BERNARD MILFORD

CANEGROWERS Australia
matt_kealley@canegrowers.com.au

**KEYWORDS: Australia,
Sustainability, Legislation.**

Abstract

This paper reviews the legislative, environmental and social requirements faced by the Australian sugar industry. It concludes that the Australian industry probably operates under more environmental scrutiny and control than most, has less government protection than most but suffers less interference in its commercial arrangements than most.

Introduction

The sugar industry in Australia is among the world's largest exporters of raw sugar, but internally its sugar industry is relatively small. Sugar contributes 4% to the gross value of agriculture in Australia and agriculture in turn makes up 4% of the country's GDP. The sugar industry is scattered along the Queensland and Northern New South Wales coast and, despite its size in the overall economy, is the vital economic lifeblood of many towns and regions.

It could be described as capital rather than labour intensive, compared to many industries worldwide. Around 3800 cane growing enterprises supplying ten milling companies produce between 30 Mt and 35 Mt cane and 4.5–5 Mt sugar. The industry is close to the iconic Great Barrier Reef and several major centres of urban expansion.

Legislative

Sugar producers in Australia have no market or tariff protection; the industry competes with other sugar producing countries on the world stage and domestically. Apart from small US and EU quotas, it has no preferential markets. Specific sugar legislation is minimal and growers and millers make contracts commercially, without resort to external arbitration. There is no national ethanol mandate, but the state of New South Wales has a 2% requirement in place and Queensland has announced a 5% mandate. A national *Renewable Energy Target* of 20% of stationary energy by 2020, introduced in 2009, will give an impetus to cogeneration in sugar mills.

Sugar industry participants, as individuals and corporations, are bound by a substantial amount of Australian and state legislation, much of which has a strong focus on environment protection (summarised in Appendix 1).

In particular, the *Environmental Protection Act 1994* establishes a general duty of care, which means growers need to take all reasonable and practical measures to minimise the risk of harm to the environment. New legislation to limit fertiliser and pesticide output from the sugar and grazing industries in the catchment of the Great Barrier Reef has recently been passed by the Queensland Parliament.

All affected farmers in these catchments, which account for over 70% of production, will be required to keep comprehensive records of their use of agricultural chemicals, fertilisers, soil conditioners and soil testing results, apply no more than the optimum level of fertiliser, and observe new restrictions on the use of some agricultural chemicals.

The industry's social obligations require compliance with general workplace health and safety regulations and the *Trade Practices Act 1974* which regulates business activities.

Australia ratified the Kyoto Protocol in December 2007 and has made a commitment to reduce its greenhouse gas emissions to 60% of 2000 levels by 2050. The Australian Government is implementing a strategy for tackling climate change through the Carbon Pollution Reduction Scheme. The government has indicated that agriculture will be included in the scheme; this sector contributes 16% of the country's greenhouse emissions, mainly methane from enteric fermentation in ruminants. However, the form of this participation will not be determined until 2013 and discussions are continuing.

Positive externalities

As noted, the sugar industry is the cornerstone of many towns and communities on the northeast coast of Australia. It is estimated that it employs directly around 5250 people on farm, 3120 in the harvesting sector and 7359 in mills. Logistics, marketing, research, representation and refining contribute another 753 people, giving a total of around 16 482 direct employees. The workforce is skilled and adaptable. Indirectly, around 30 000 persons rely on the industry for their livelihood. The centre of mass that the industry provides keeps rural communities alive and means that services such as education, health and finance are maintained.

The industry's ability to match sustainability criteria

Political positioning, encroachment from urban development, increased environmental scrutiny, competition for land use from other crops and forestry and the diversity of the sugar producing regions are all factors that will affect the industry's ability to match sustainability criteria.

The diversity of climate, geographic location, cane variety, water availability and soil conditions all dictate farm practice. For instance, in the Burdekin dry tropics, cane fires are commonplace as heavy crops and furrow irrigation make trash blanketing difficult. In most other regions, cane fires were replaced with green cane harvesting and green trash blanketing years ago. Maintaining the ability to burn cane when necessary requires an understanding of farming systems that the public and media may not be inclined to develop, leading to simplistic proposals for quick solutions.

Urban development on productive cane land and land-use change to trees or other crops create tension, particularly around production tonnages that are necessary for mill viability. Taxation incentives are available for forestry developments that are not applied to cane growing. Urban expansion into cane areas brings increased public scrutiny of farm practices such as application of fertiliser and chemicals.

We consider that the industry's biggest challenge in terms of legislative outcomes is the rise of the urban green vote and the willingness of politicians to chase this bloc with simplistic solutions. At the same time, regional electorates are seen as unlikely to change hands with the consequence that their concerns can be largely dismissed.

This was clearly evident in an announcement during a recent Queensland State election campaign of measures to reduce pollution on the Great Barrier Reef by 50% in five years by targeting only the sugar and grazing industries.

By contrast to the legislative approach, the industry, in partnership with the Commonwealth government, other peak industry bodies and regional natural resource management groups, has committed to a program of cooperative improvements in farm practices.

The five-year Reef Rescue program will focus on new technology to assist growers make best use of their inputs of fertiliser, chemicals and irrigation water to deliver a more profitable business with greatly reduced environmental footprint. It will be responsible for the delivery of incentives for accelerated uptake of better management practices in the reef catchments.

The representative organisation, CANEGROWERS Australia, produces a Public Environment Report on a regular basis (Wrigley *et al.*, 2008 is the latest). This is designed to provide a comprehensive reference for those interested in the growing sector's environmental progress.

It details the risk management and continual improvement of new farm practices being undertaken by growers for economic, social and environmental sustainability. The reports measure progress and highlight growers' willingness to continually strive to do more, provided that it is practical, is supported by science and delivers a benefit.

The organisation has also been proactive in developing booklets, DVDs and a range of communication tools to assist farmers to adopt improved management practices.

Research

It is fair to say that most research in the Australian sugar industry has a sustainability focus. Work on reducing fertiliser requirements, improving the targeting and effectiveness of pesticide use, drought tolerance of new varieties, and farming systems with lower inputs and lower losses are all examples of research dedicated to improving sustainability.

An examination of the research programs of BSES Limited and the Sugar Research and Development Corporation will demonstrate an almost-universal emphasis on the triple bottom line in research outcomes.

Conclusion

The Australian industry probably operates under more environmental scrutiny and control than most, has less government protection than most and consequently suffers less interference in its commercial arrangements than most.

It dedicates considerable resources to improving its sustainability and will continue to improve. However, it will also be likely to find its operations curtailed through political interference based on simplistic, populist environmental concerns.

REFERENCE

Wrigley, T., Kennedy, N. and Moore S. (2008). Public Environment Report. CANEGROWERS, Brisbane. 36 p. Available at: <http://www.canegrowers.com.au/industry/environment.aspx>.

Appendix 1

Laws, legislation and regulation relevant to agricultural farm practices in Australia

Water Act 2000	<ul style="list-style-type: none"> • Water Licences • Water Allocations • Land and Water Management Plans • Regulates clearing of vegetation in and around water ways
Great Barrier Reef Protection Amendment Act 2009 (Qld) Reef Protection Regulations	<ul style="list-style-type: none"> • Legislation and regulations to improve water quality entering the Great Barrier Reef that is directed at sugarcane farmers and graziers in the Wet Tropics, Burdekin Dry Tropics and Mackay Whitsundays.
Integrated Planning Act	<ul style="list-style-type: none"> • Regulates certain works that take or interfere with water from watercourses, lakes, springs, aquifers or overland flow • Development Permit required for physical construction of works to take or interfere with water in a watercourse • Development Permit required for bores
Nature Conservation Act 1992 (Qld)	<ul style="list-style-type: none"> • Care and protection of native plants, animals and habitat in Queensland • Protects areas of environmental significance
Land Protection (Pest and Stock Route Management) Act 2002 (Qld)	<ul style="list-style-type: none"> • For plants and animals declared as pests • Places obligations on landholders in relation to the control, sale, keeping and transport of declared pests in Queensland
Land Act 1994 (Qld)	<ul style="list-style-type: none"> • Places obligations on leaseholders when it comes to noxious plants eg may require the lessee to destroy plants
Local Government Act 1993 (Qld)	<ul style="list-style-type: none"> • Local Government Minister has power to declare any bird, animal, insect, fungus, matter or thing to be a pest within the meaning of that Act
Vegetation Management Act	<ul style="list-style-type: none"> • Clearing of vegetation in and around water ways • Clearing of vegetation on both freehold and leasehold land • Property Map of Assessable Vegetation
Vegetation Management and Other Legislation Amendment Bill 2009	<ul style="list-style-type: none"> • Management and clearing of regrowth vegetation and regrowth watercourses • Wet Tropics, Burdekin Dry Tropics and Mackay Whitsundays
Soil Conservation Act 1986	<ul style="list-style-type: none"> • Designed to conserve and prevent soil erosion
Wild Rivers Act 2005 (Qld)	<ul style="list-style-type: none"> • Aims to preserve river systems the State Government identifies as having all, or almost all, of their natural values intact
Wild River Code	<ul style="list-style-type: none"> • Sets out requirements that must be met by proposed development
River Improvement Trust Act 1940	<ul style="list-style-type: none"> • Designed to improve the flow of water courses
Environmental Protection Act 1994	<ul style="list-style-type: none"> • Protect the environment in Queensland • Wide range of mechanisms • Eg aerial spray drift
Environmental Protection and Biodiversity Conservation Act 1999 (Cth)	<ul style="list-style-type: none"> • Provides protection to nationally significant aspects of the environment • Farmers may require approvals if new activities significantly impact on matters of environmental significance • World Heritage Properties • National Heritage places • Wetlands • Threatened animal and plant species and ecological communities • Migratory species • Commonwealth marine areas
Local laws	<ul style="list-style-type: none"> • By local governments
Fire and Rescue Service Act 1990	<ul style="list-style-type: none"> • Permits for burning in certain situations
Agricultural Standards Act 1994 (Qld)	<ul style="list-style-type: none"> • Imposes quality and control stands on 'agricultural requirements' (seed, fertiliser, lime or stock food)

Agricultural and Veterinary Chemicals Act 1994 (Commonwealth)	<ul style="list-style-type: none"> Regulate agricultural and veterinary chemicals APVMA (Australian Pesticides and Veterinary Medicines Authority) Registration of agricultural and veterinary chemicals ensures that users have access to approved products that are correctly packaged and labelled with all necessary limitations, precautions and directions for use Sub-section 10(c) of the Agricultural and Veterinary Chemicals Code provides that a person may apply to the NRA (National Registration Authority) for approval of a label for containers for a chemical product.
Agricultural and Veterinary Chemicals Act 1994 (Qld)	<ul style="list-style-type: none"> Responsible for regulation, registration and control of agricultural and veterinary chemicals Chemicals must be registered under the 'AgvetCode' Usage of agricultural chemicals
Chemical Usage (Agricultural and Veterinary) Control Act 1988 (Qld)	<ul style="list-style-type: none"> Use of chemicals according to approved processes eg labels
Chemical Usage (Agricultural and Veterinary) Control Amendment Regulation 2009 (Qld)	<ul style="list-style-type: none"> Use of chemicals according to approved processes to support the Great Barrier Reef Protection Amendment Act 2009
Chemical Usage (Agricultural and Veterinary) Control Regulation 1999	<ul style="list-style-type: none"> Use of chemical products under previously approved labels and permits Restrictions for Endosulfan eg must have Chemcert, FarmCare or similar
Agricultural and Veterinary Chemicals Code Act 1994 (Commonwealth)	<ul style="list-style-type: none"> An Act to make provision for the evaluation, registration and control of agricultural and veterinary chemical products, and for related matters, for the purposes of the Agricultural and Veterinary Chemicals Act 1994
Agricultural Chemicals Distribution Control Act 1966 (Qld)	<ul style="list-style-type: none"> DPIF Controls the aerial distribution of chemicals and the ground distribution of herbicides Contract distribution and application of chemicals
Health Act 1937 (Qld)	<ul style="list-style-type: none"> Prohibits any person under 17 years of age to take part in the distribution, mixing and loading of chemicals
Stock Act 1915 (Qld)	<ul style="list-style-type: none"> Control the introduction of stock into Queensland and movement of stock in Queensland
Plant Protection Act 1989 (Qld)	<ul style="list-style-type: none"> Controls the introduction and movement within Queensland of plants, soil and other things Puts in place quarantine restrictions eg Plant Quarantine Areas for sugarcane
Plant Breeders Rights Act 1994 (Commonwealth)	<ul style="list-style-type: none"> For new plant varieties
Fisheries Act 1994	<ul style="list-style-type: none"> Protection of fish habitat areas. Section 123 makes it an offence to unlawfully destroy marine plants, i.e without a permit Maintenance of drains on-farms involving marine plants Code for self-assessable development
Great Barrier Reef Marine Park Act 1975 (Commonwealth)	<ul style="list-style-type: none"> Long term protection and conservation of the environment, biodiversity and heritage values of the Great Barrier Reef Region. Provides for the establishment, control, care and development of the Great Barrier Reef Marine Park Establishes the Great Barrier Reef Marine Park Authority Provides for zoning plans and plans of management
Great Barrier Reef Marine Park (Environmental Management Charge-General) Act 1993 (Commonwealth)	<ul style="list-style-type: none"> An Act to impose a charge on the grant or transfer of certain permissions under the Great Barrier Reef Marine Park Regulations, so far as that charge is neither a duty of customs nor a duty of excise

Voluntary activities relevant to agricultural good farm practices

Chemcert	<ul style="list-style-type: none"> • Participation in workshops • Payment of relevant certification fees
Land and Water Management Plans	<ul style="list-style-type: none"> • Participation in workshops • Sometimes prior to water trading • Sometimes on a voluntary basis
Nutrient Management	<ul style="list-style-type: none"> • '6 Easy Steps' Workshops • Recommended fertiliser application rates by industry • Development of nutrient management plans • Soil testing • Water quality testing • Shed meetings, farm walks, bus tours etc
Farm Plans	<ul style="list-style-type: none"> • Farm Productivity Assessment Workshops • Compass workshops, Compass workbook
Controlled traffic farming with GPS guidance	<ul style="list-style-type: none"> • Benefits nutrient, sediment reduction and water efficiency
Green cane harvesting and trash blanketing	<ul style="list-style-type: none"> • Benefits nutrient, chemicals, sediment reduction and water efficiency
Water efficient irrigation eg low pressure overhead irrigation	<ul style="list-style-type: none"> • Benefits water efficiency and sediment reduction
Environment Audits	<ul style="list-style-type: none"> • By CANEGROWERS • 1996 • 2004
Public Environment Reports	<ul style="list-style-type: none"> • By CANEGROWERS • 2004 • 2006 • 2008
Best Management Practice Booklets	<ul style="list-style-type: none"> • By CANEGROWERS and BSES • Series of six initially

LA DURABILITE ET L'INDUSTRIE SUCRIERE AUSTRALIENNE

Por

MATTHEW KEALLEY et BERNARD MILFORD
CANEGROWERS Australia
matt_kealley@canegrowers.com.au

**MOTS-CLES: Australie,
Durabilité, Législation.**

Résumé

CET ARTICLE passe en revue les obligations législatives, environnementales et sociales dont a fait face l'industrie sucrière australienne. Il conclut que l'industrie australienne fonctionne dans un contexte environnemental et de contrôle plus contraint que la plupart des autres industries, qu'elle a moins de protection gouvernementale que la plupart mais qu'elle souffre de moins d'interférence dans ses négociations et aménagements commerciaux que la plupart des autres industries.

LA SOSTENIBILIDAD Y LA INDUSTRIA AZUCARERA AUSTRALIANA

Por

MATTEW KEALLEY y BERNARD MILFORD
CANEGROWERS Australia
Matt_kealley@canegrowers.com.au

**PALABRAS CLAVE: Australia,
Sostenibilidad, Legislación.**

Resumen

ESTE ARTÍCULO examina los requisitos legislativos, ambientales y sociales que enfrenta la industria azucarera de Australia. El informe concluye que la industria Australiana probablemente opera bajo mayor escrutinio y control ambiental que la mayoría, tiene menos protección del Gobierno que la mayoría, pero sufre menos interferencias en sus arreglos comerciales que la mayoría.