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## THE HEALTH OF THE PEOPLE IN AGRICULTURE AND ITS INTERDEPENDENCE WITH THE HEALTH OF RURAL COMMUNITIES

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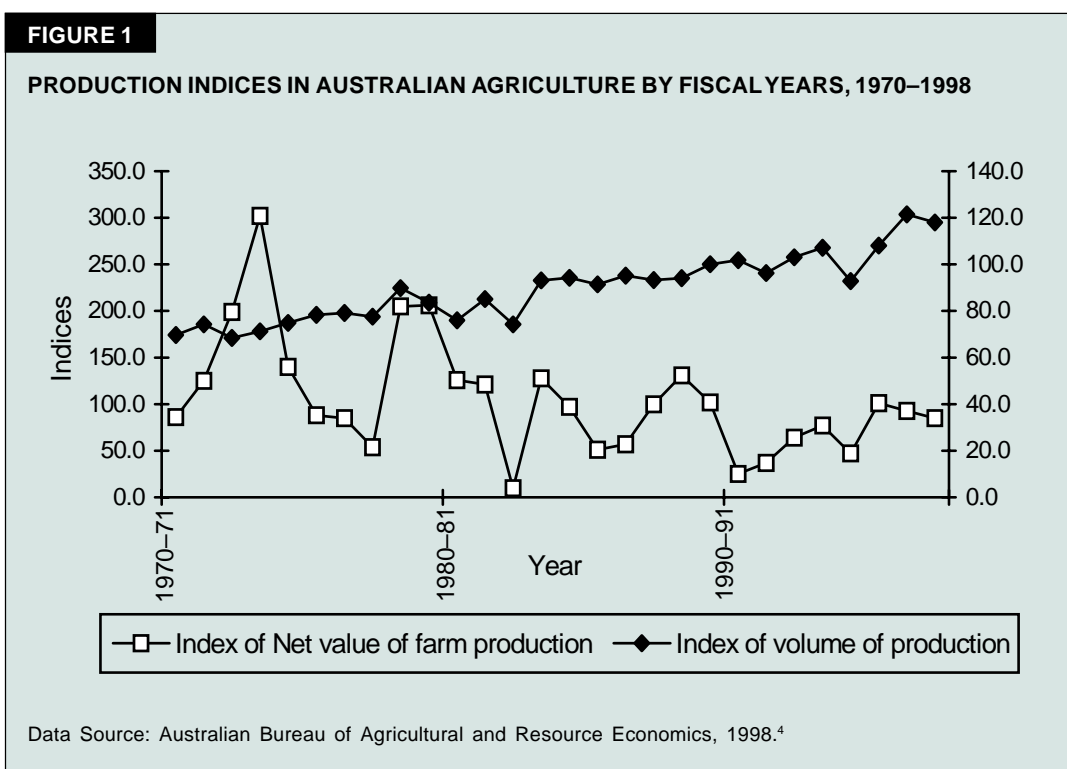
This article describes the factors that are driving change in Australian agriculture, how they affect the health of the agricultural population and of rural communities as a whole.

### BACKGROUND

Australian agriculture comprises a large number of discrete rural industries. While there are some similarities between these industries (such as outdoor work, the use of mobile

plant and equipment, and often the structure of a family business), there are many differences between their production processes and enterprise arrangements. For example, the production processes and labour arrangements of a dairy enterprise contrast markedly with those of a cotton or vegetable enterprise.

Further, agriculture industries are in constant change and, while these changes affect the social wellbeing and health of people in those industries, constant change also affects the social and economic position of the wider rural community. A number of factors have been identified as driving change and the restructuring



**TABLE 1****FACTORS DRIVING CHANGE IN AUSTRALIAN AGRICULTURE****Technological advances**

- Farm production technology, for example: mechanisation, chemical and biological control of insects.
- Communications, including telephone, computer, internet.

**Economic factors affecting the farm business**

- The volume of Australian farm production is increasing, but the real value of the Australian farm production has not grown with the growth of production (Figure 1).<sup>4</sup>
- Australian farmers face continual pressure from falling Terms of Trade: that is, increasing input costs and declining product prices.
- While it remains an important contributor to the Australian economy, the overall importance of agriculture to the economy is declining, with the growth of other sectors.
- Changing demands and prices for commodities produced—the 1990s saw major drop in wool prices, marked fluctuation in beef and grain prices.
- Changing demands for quality standards to be met for products.
- Industry policies: for example, dairy deregulation resulting in a sudden drop in milk prices.
- Environmental factors are increasing in importance for sustainability of the farm enterprise.

**Social factors affecting the farm family**

- Young people leaving the farm for higher education.
- Increasing feelings of loss of control over many factors, including government policies relating to taxation, environment, access to inputs (for example: water, pesticides).
- Lack of services, such as banking, retailing.

**Ongoing pressures for restructuring of farm businesses**<sup>2,3</sup>

- Cost-cutting on farm business and personal expenses.
- Diversification of commodities produced.
- Intensification and changes to input level use: for example, fertilisers, more cropping.
- Increasing farm size.
- Changes to marketing methods, transportation, to respond more efficiently to market demands.
- Changes in farm financial arrangements and business organisation.
- Seeking off-farm income for one or both partners.
- Bartering of goods and services with other enterprises.
- In some cases, leaving the farm.

of the agricultural sector in Australia, with flow-on effects on associated rural communities.<sup>1</sup> These are largely the effects of global changes. As the Australian agricultural sector is primarily supplying overseas markets, farmers tend to be ‘price takers’: that is, they have little capacity to influence the prices that they receive for their products. Because Australia does not provide government subsidy to mitigate the direct economic effect of global market fluctuations, farming enterprises must absorb these effects.

The factors driving change in Australian agriculture are listed in Table 1.<sup>2,3</sup> The cumulative effect of these factors is an ongoing reduction in the number of farming enterprises across Australia, as demonstrated in Table 2. Production indices in Australian agriculture are shown in Figure 1.<sup>4</sup>

**THE HEALTH OF THE FARMING POPULATION**

Not surprisingly, the health status of men and women engaged in agriculture—that is, farmers and agricultural workers—is being affected by these pressures, and by a reduction in farm income. The health of the farming population is the subject of several studies at the Australian Centre for Agricultural Health and Safety.

There is early evidence from death data that Australian farmers experience higher death rates than the Australian male population. A paper presented at the National Rural Public Health Conference in 1997 reported that the age standardized death rate for male farmers aged 15–65 in the period 1990–1993 was 39 per cent greater than the working age male population.<sup>5</sup> Table 3 indicates that excessive higher rates of deaths of male farmers are associated with circulatory disease, neoplasms and injury.

Table 4 indicates that death rates are highest in the Northern Territory, New South Wales, Victoria and South Australia. At this stage, similar data is not immediately available for females, due to lack of valid denominator data, nor for agricultural workers. This is the subject of further investigation.

Rates of death due to injury for male farmers and farm managers are excessively high. The National Occupational Health and Safety Commission has undertaken a study of work related deaths for the period 1989 to 1992,<sup>6</sup>

**TABLE 2****NUMBERS OF AUSTRALIAN FARMING (AGRICULTURAL ESTABLISHMENTS) UNITS WITH AN ESTIMATED VALUE AGRICULTURAL OUTPUT OF \$5,000**

Year	Qld	NSW	VIC	TAS	SA	WA	NT	ACT	Total
No.farms 1986	33,745	51,728	43,931	5,199	18,739	16,004	267	103	169,716
No Farms 1996	31,371	41,578	36,146	4,464	15,562	13,640	221	95	143,211
Number Decrease	2,374	10,150	7,785	735	3,177	2,364	46	8	26,505
Per cent reduction	7.0	19.6	17.7	14.1	17.0	14.8	17.2	7.8	15.6

Source: Australian Bureau of Statistics,<sup>16</sup>

and has made a preliminary report of deaths in the agriculture industry. In the period 1982–1984 there were 19 deaths per 100,000 workers in agriculture, in the period 1989–1992 the rate was 20 deaths per 100,000. These rates for work-related deaths on farms rank among the highest among Australian industries, with deaths from heavy machinery—such as tractors, machinery, aircraft and farm vehicles—being among the leading agents of injury. In addition to these deaths, there are high numbers of bystander deaths and deaths of children on farms: for example, many toddlers die as a result of drowning in farm dams or other bodies of water.<sup>7</sup>

Male farmers die on roads at double the rate of the Australian male population.<sup>8</sup> A study undertaken by the Australian Centre for Agricultural Health and Safety in association with the Australian Transport Safety Bureau has reported key factors associated with road fatalities in the farming community.<sup>9</sup> The study examined road traffic deaths of male farm managers and agricultural workers for the years 1988, 1990, 1992, 1994 and 1996. Female death records inadequately defined female farm managers and farm workers and were excluded from the analysis. Characteristics of the crash circumstances included: a majority of single vehicle crashes, mostly within 50 kilometres of home; low seatbelt usage; and between 31 and 46 per cent were associated with high blood alcohol levels. The role that fatigue may have played could not be examined.

Deaths through suicide of male farmers and farm workers is also around double that of the Australian male population, and is the subject of a study by Page and Fragar.<sup>10</sup> There is a widespread view among the agricultural population that many suicides of farmers are directly related to the economic circumstances of their farm business, and this relationship is being examined.

The factors associated with the high cardiovascular disease death rates of Australian male farmers and farm managers are also being explored further.

While death rates of farmers associated with lung cancer are lower than for the Australian population as a whole, death rates for cancers of the skin, prostate and rectum are higher.<sup>8</sup> These findings are consistent with international reports.<sup>11,12</sup>

People engaged in agricultural production are also exposed to specific environmental health risks associated with their work environment including noise, zoonoses, pesticides and organic dusts.<sup>8</sup>

This brief consideration of the health status of the farming population indicates a relatively poor position for a key population group in rural Australia. It is not unreasonable to suggest an association between the stresses of business and the increasing social isolation being reported by farm families, and the poor health outcomes evident in the data. Increasing loss of control over many factors

**TABLE 3**

**STANDARDISED MORTALITY RATIOS MALE FARMERS—FARM MANAGERS BY FIVE BROAD DISEASE GROUPS 1990–1993 (INDIRECT METHOD)**

Cause of death	Standardised mortality ratio	95% CI L	95% CI U
Circulatory disease	162	151	173
Neoplasms (Cancer)	120	112	128
Respiratory disease	84	65	103
Injuries and poisonings	224	205	243
Other causes	86	74	98
All causes	139	134	144

Source: Fragar et al. 1997<sup>5</sup>

**TABLE 4**

**STANDARDISED MORTALITY RATIOS MALE FARMERS—FARM MANAGERS, ALL CAUSES BY STATE, 1990–1993 (INDIRECT METHOD)**

State	Standardised mortality ratio	95% CI L	95% CI U
New South Wales	149	139	159
Victoria	149	138	160
Queensland	118	107	129
South Australia	149	132	166
Western Australia	121	105	137
Tasmania	131	100	162
Northern Territory	158	40	276
Australia	139	134	144

Source: Fragar et al. 1997<sup>5</sup>

associated with the farm and business seems to be a common thread that warrants further exploration.

Such a position has been espoused by a number of observers over some time. A paper presented at the United States Surgeon Generals' Conference on Agricultural Safety in 1991 described the changing face of American agriculture,<sup>13</sup> the physical and psychological symptoms experienced by individuals in response to the stresses of farm financial difficulty, the effects on rural community and the potential effect of the foreshadowed 'destruction of locally regionally self-sufficient food systems in favour of a globalised system'.<sup>13</sup>

**THE RURAL COMMUNITY AND THE AGRICULTURAL SECTOR**

Socioeconomic changes in agriculture have a significant effect on rural communities:<sup>3</sup>

- population decline in inland and remote Australia is mainly a result of long term pressures on the agricultural sector;

- employment in primary industries is in decline in inland and remote Australia;
- there has been a significant change in the demography of inland rural communities, with loss of young people to metropolitan centres for education and employment;
- percentage growth in population is closely associated with percentage growth in employment;
- most growth is in coastal regions of Australia;
- mining is now nearly as important to employment as agriculture in 'remote' Australia.

The mutual dependence of rural townships and farms has been demonstrated in inland centres, with farmers and their families responsible for a substantial proportion of wholesale and retail turnover in north-west NSW, as well as towns providing the source of off-farm income.<sup>14</sup>

McKenzie investigated the effect of declining rural infrastructure on farming enterprises in the central wheat belt of Western Australia.<sup>4</sup> Faced with withdrawal of services from the local community, the question posed was whether these changes affect the efficiency of farm enterprises. The following effects on farm enterprises were reported:

- unreliability of services was unacceptable;
- lack of choice of service providers was unacceptable;
- while health services were generally considered adequate if not further pared, mental health was a recurring theme. Suicide was viewed as a real threat. Many participants indicated that mental health encompassed unresolved family issues and that sustained stress was having a direct effect on economic viability of the farm for some enterprises;
- access to education was reported as the major infrastructure issue that mobilises families. If adequate educational facilities are not accessible, either the child will be sent away to school, or the family will relocate;
- youth drain from communities is seen to indicate loss of community 'vibrancy and optimism';
- housing shortages pose difficulties in recruiting casual labour;
- farm people recognise the need to support and participate in local community activities, creating further pressure on time away from farm and domestic duties.

Thus a vicious cycle has been established in many inland rural communities, whereby farming enterprises are forced to purchase lower cost inputs from outside the local community, and forced to reduce labour input, causing restructuring and downsizing of smaller inland rural communities, thereby further disadvantaging farming enterprises.

## SOCIAL AND ECONOMIC POLICY FOR IMPROVED RURAL HEALTH

National health strategies for disease prevention in Australia have increasingly recognised the importance of attention to rural populations and Aboriginal and Torres Strait Islander health. Further, there is a similar and admirable tendency for inclusion of community 'capacity building' and community development approaches in such strategies. For example, while the National Environmental Health Strategy has a key focus on the physical environment,<sup>15</sup> it requires community participation for its implementation; and it describes strategies for community participation to achieve sustainability, for example:

- a health promotion approach;
- development of infrastructure that enables community participation;
- provision of information and development of appropriate skills.

## CONCLUSION

While recognising the importance of active community participation and capacity building in rural health policy, and the imperative for maintaining adequate health services delivery to rural populations, it is suggested that such strategies will fail to deliver reduced differentials in health status between rural and urban Australians unless active attention is given to sustaining the economic and employment base of rural communities. Rural health policy in Australia needs to be accompanied by a comprehensive policy for improved social and economic wellbeing. This requires an engagement between industry, resource allocation, business development, education and training; and it necessitates a dialogue between those who make public health policy and those who make social and economic policy.

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## BUILDING CAPACITY IN RURAL HEALTH

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Capacity building to increase health gains in defined populations is not a new concept. Nevertheless, as interpreted by Penny Hawe and her colleagues,<sup>1</sup> and as developed operationally by the NSW Department of Health,<sup>2,3</sup> enhancing regional capacity to deal more effectively with the health needs and demands of people living in rural and remote Australia offers real promise as a useful approach for improvement. Essentially, capacity building in public health involves:

- delivering high quality services;
- responses to specified situations or problems;
- developing the regional system to solve new problems and respond to unfamiliar circumstances.

This article describes what effective and sustainable infrastructure is needed to achieve this capacity, with an emphasis on recent initiatives in the education and vocational training of rural health professionals.

### THE HEALTH NEEDS OF RURAL AUSTRALIANS

Rural health has been on the political agenda for some time now.<sup>4</sup> The poorer health status of rural residents has

been well documented; and in particular, that of Aboriginal and Torres Strait Islander peoples.<sup>5</sup>

Around 30 per cent of the Australian population lives outside the metropolitan centres in communities that are geographically distinct and dispersed, ranging from major regional centres, country towns, to small isolated settlements and pastoral stations. The prominence of regional centres in economic and infrastructure terms is somewhat offset by the fact that most (>85 per cent) rural and remote communities are small in size with populations ranging between 200–5,000. Access to health services in these smaller communities is often limited, and is further compounded by difficulties associated with the recruitment and retention of health practitioners.<sup>6</sup>

The context of rural practice, and the capacity to develop services within a specific rural or remote region, is influenced by historical and local circumstances. Nonetheless, the size and location of a rural or remote community are the main determinants of the range of resident health professionals and services being delivered locally. Population can be viewed as a proxy for availability of services, such as health and education, where government has a role in provision, funding or planning.<sup>7</sup> Also, proximity to, or remoteness from, other larger centres influences the accessibility of other services.

The majority of Australians have access to well-resourced urban centres where effective primary health care tends to be taken for granted and the emphasis is on secondary and tertiary levels of service. By