Farm Health & Safety
Joint Research Venture

Rural Industries R&D Corporation
Grains R&D Corporation
Cotton R&D Corporation
Sugar R&D Corporation
Meat & Livestock Australia
Dairy R&D Corporation
Horticulture Australia Ltd

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RURAL INDUSTRIES RESEARCH
& DEVELOPMENT CORPORATION

R & D Plan for Farm Health and Safety 2002 - 2006

Priority Driven Research

RIRDC Pub. No. 02/041

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Snapshot of the Five Year Plan

Vision

The vision presents the ideal view of the world that will be achieved not only through the R&D program but also the efforts of the industry and government agencies promoting OHS and the effort of individual farmers in adopting safe systems of work.

Enhanced well being and productivity in rural industries through improved OHS status of Australian agriculture delivered by the establishment of safe systems of work on farms.

Mission

To coordinate and support R&D to develop, implement, monitor and evaluate safe systems of work on farms across all rural industries.

Objectives

1. To increase the adoption of safe systems of work on farms.
2. To develop the information and systems to ensure the health and safety of persons transporting, handling, applying and otherwise affected by agricultural and veterinary chemicals.
3. To complete on-farm safety management packages for all major commodities including horticultural industries and encourage their incorporation into broader farm management packages.
4. To update and further develop training material and delivery modes more likely to be taken up by farmers.
5. To maintain, support and utilise the collection of data on farm health and safety issues.

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1. Developing the R&D Plan

The purpose of the Plan and the planning process

The key purpose of this strategic plan is to guide the R&D activities supported by the Farm Health and Safety Joint Research Venture over the next 5 years in the effort to prevent injury on farms. The Joint Venture is coordinated by the Rural Industries Research and Development Corporation (RIRDC) and funded with the support of a range of other organisations including Grains Research & Development Corporation, Meat & Livestock Australia, Sugar Research & Development Corporation, Cotton Research & Development Corporation and Australian Wool Innovations Pty Ltd.

The main aims of developing this plan are to:

- identify priority R&D needs for Farm Health and Safety for the period 2002 to 2006;
- encourage collaboration and coordination within the various parties contributing to efforts to make farming safer that will improve the uptake and dissemination of information and optimise the use of R&D funds;
- provide clear signals to Industry, Commonwealth and State Governments and to the research community regarding R&D needs and priorities for the period 2002–06 that will contribute to reducing the incidence of farm injury;
- encourage further discussion that will enable the Farm Health and Safety needs of Australian agriculture to be further defined and responded to effectively; and
- obtain stakeholder support for the strategic R&D aims of the Program.

Interested stakeholders were invited to a planning workshop, conducted by Strategic Business Development, where the existing plan was revised. Stakeholders included: The Rural Women's Network, Farmsafe Australia, work health authorities (such as Workcover, WorkSafe), Farmer Associations, Australian Workers Union, Country Women's Association, state health and safety authorities, research organisations, Federal Government departments, rural training organisations and health professionals. The draft plan was circulated to the Farm Safety Joint Venture Advisory Panel (Advisory Panel) for comment prior to publication of the final report.

Following circulation of the draft plan the Advisory Panel met to discuss comments and to finalise the plan. In response to comments the plan was substantially revised and a new draft plan prepared for circulation to participants of the planning workshop as well as the Advisory Panel. This final draft reflects their comments.

Understanding farm OHS risk in Australia

The health and safety of Australian farming populations

Death and injury rates are higher for Australian male farmers than for the Australian male population. The higher death rate stems both from the higher injury rate and from systemic factors associated with the farming profession. While there is insufficient data on women farmers' death and injury it is likely to be similarly impacted. Some key findings summarised in Fragar and Franklin (2000) are summarised below.

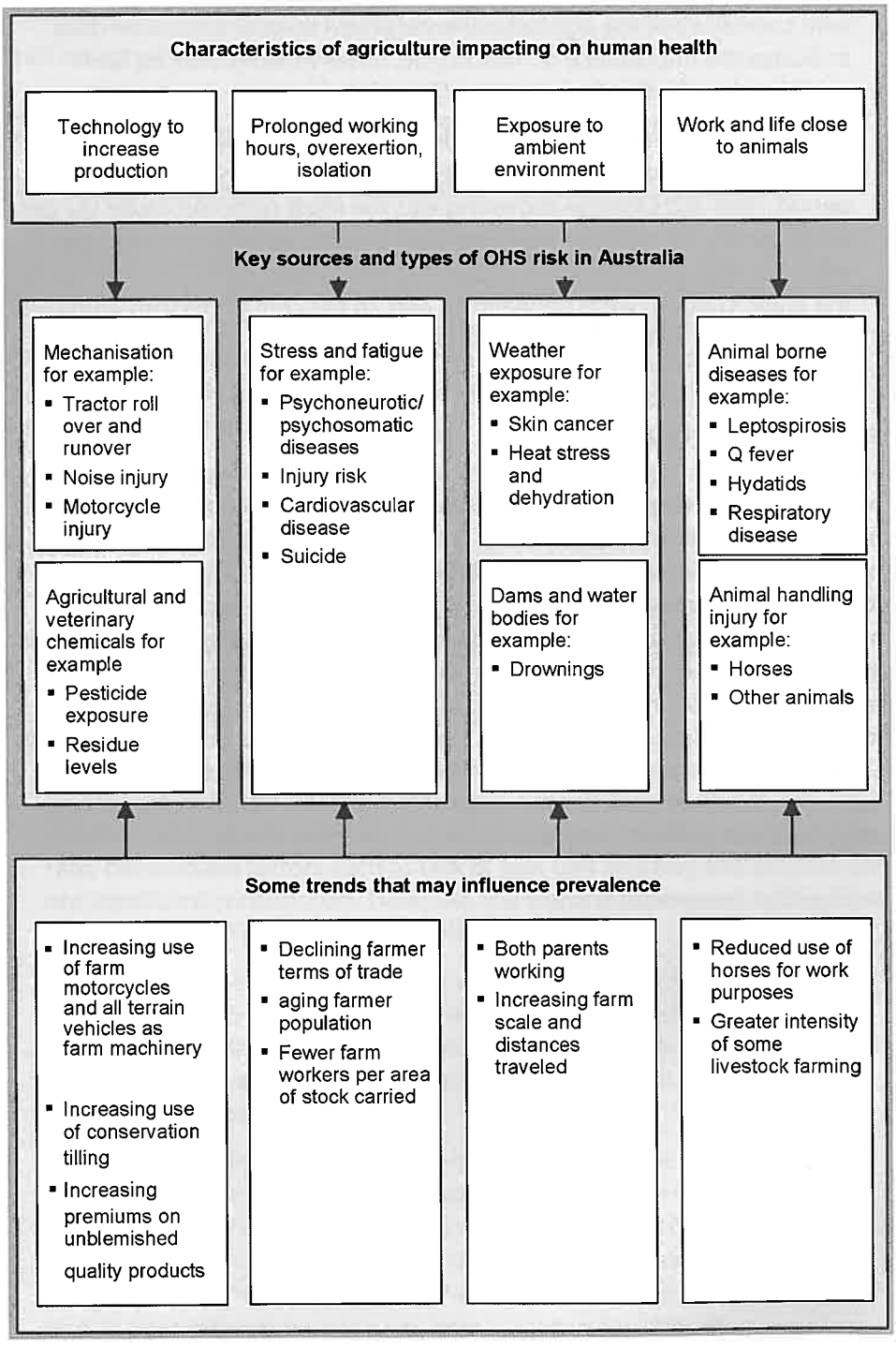
- The age standardised death rate for male farmers aged 15–65 years in the period 1990–93 was 39 per cent higher than the age standardised death rate of the working male population. These excessive rates of death are associated with circulatory disease, neoplasms (cancer) and injury.
- Each year around 150 people die from non-intentional injury on Australian farms. In the period 1982–84 there were 19 injury deaths per 100 000 workers / annum in agriculture. This rose to 20 per 100 000 workers / annum in the period 1989–92.
- Rates of death of male farmers by road traffic accident in the 1990-93 period are 20 per 100 000 population, reportedly well above the Australian average rate. While distances travelled contribute to the higher rate, behavioural factors such as lack of seat belt wearing and alcohol use are significant contributors. However, the trend is downward, falling from 32.7 per 100 000 in the 1985–89 period.
- Cancer rates for some forms of cancer were higher for male farmers/farm managers, at 105 per 100 000 for male farmers compared to 98.3 per 100 000 over 1992–95 for the age standardised working age population. Cancers associated with higher death rates include cancer of the colon, rectum, skin, prostate and brain.
- Rates of suicide deaths of male farmers are around double that of the male population. In the period 1992–95 there were 253 suicide deaths of male farmers/farm managers. This equates to 33.2 deaths per 100 000 male farmers/farm managers compared to 27.9 for the working age male population in 1992–95. The trend appears to be upward with 34.5 in the period 1990–93 and 27.6 per 100 000 male farmers/farm managers for 1985–89.

- There are around 6 500 admissions to hospital each year for non-intentional farm injury. There are between 20 and 70 presentations to hospital emergency departments for farm injury per 100 farms, varying with the nature of the agricultural enterprise. Hospital admission data indicates the importance of motorcycle, other vehicles, horses, farm machinery and animals as agents of farm injury.
- A study of on-farm traumatic fatalities of children by Franklin et al (2000) reported 177 deaths of children aged less than 15 years of age over the period 1989–92. Of these drowning was the most common cause (42 per cent), mostly for children aged less than 5 years. Vehicles and tractors were the next most common cause of death (36 per cent). Depending on the State, children were between 18 and 26 per cent of persons admitted to hospital for selected on-farm injuries in 1995–96.

Factors in injury risk

The World Health Organisation describes four characteristics of work that impact in a number of ways on OHS. These four characteristics and their implication for risk are particularly relevant to agriculture. The four are: technology to increase production (mechanisation and use of agriculture and veterinary chemicals), prolonged working hours and overexertion (stress and fatigue), exposure to the ambient environment (weather and natural environment exposure) and work and life close to animals (animal borne disease and handling injury). Chart 1.1 summarises the current predominant risk factors in Australian agriculture under each of these headings. The final box in the chart summarises some of the general trends in the farm population and production that may impact on these risk factors.

Chart 1.1: Risk factors in Australian agriculture



Major sources of injury and disease risk on Australian farms

Fragar and Franklin (2000) note a number of areas of injury and disease risk concern based on analysis of injury and disease statistics.

- Tractor rollover and run-over are a major area of risk. It has been estimated that approximately 36 deaths occur each year due to farm machinery injury. They would account for approximately 500 hospital admissions and 600 presentations to hospital emergency departments. It is estimates that 22.3 per cent of traumatic deaths on farms during 1989–92 were associated with tractors and mobile plant and fixed plant. No clear downward trend in the number of deaths is discernable over the period 1985–98.
- Two and four wheeled motor cycles are associated with an estimated 400 to 500 admissions to hospital each year, and are an emerging OHS risk.
- Agricultural and veterinary chemicals can have a range of effects through absorption into the skin, inhalation or ingestion. Agricultural industries identified as associating significant numbers of workers or others in the community to risk of pesticide exposure include cotton, orchards and viticulture, vegetable production, sheep, bananas, and greenhouse crop production. The number of reported deaths is low — from 1989 to 1992 there were two on-farm deaths due to acute pesticide poisoning and four others due to other hazardous substances — and hospital admissions for poisoning are around 30 to 40 a year. However, there is less known about the longer term health impacts (Fragar and Franklin 2000). They conclude that while considerable research on the long term health effects has been conducted there is a difficulty drawing firm conclusions as experiments are limited for ethical reasons.
- Noise damage to hearing — hearing loss and tinnitus — has been described as a major disabling problem for farmers and farm workers. The problem is commencing at a young age and is progressive and permanent. A screening of over 5 000 farmers in 1998 found considerable damage to hearing, particularly in the left ear. While the proportion of farmers not using any protection has dropped, from 23.6 to 16 per cent from 1994 to 1997, still 50 per cent of older farmers and 25 per cent of younger farmers use no protection.
- Animal related diseases that can affect humans are increasingly of concern. Mad cow disease is only one that is thought to have 'jumped' the host barrier from cow to human. Singled out for mention as high priority concerns are leptospirosis, Q fever, and hydatids.
- Respiratory diseases related to organic dusts in the piggery, grain and cotton industries are also a concern.

Trends in factors influencing risk

- In the drive for productivity improvement farm size has increased and farms are more likely to be discontinuous. Partly in response to this the use of motorcycles and all terrain vehicles is increasing with associated increase in risk. This trend may be associated with reduced exposure to horse related injury associated with stock work.
- The intensity of farming methods is increasing in some industries with greater exposure to animal borne diseases and chemical and other exposures. More environmentally friendly farming methods may also bring additional risks to farmers, such as minimum tillage farming raising chemical exposures. Similarly the market demand for quality product may raise the use of chemicals, although offsetting this is the increasing demand for minimum residue levels in products.
- Financial conditions for a number of farmers are deteriorating due to a declining farmer terms of trade (price of output relative to farm inputs) and the difficulty of adjustment for some farm families. The condition of machinery is a major determinant in machinery related accidents, with evidence of the majority of accidents happening on older machines and a direct correlation between tractor accidents and the amount of maintenance afforded the machine. Financial conditions have also been related anecdotally to farm deaths due to suicide.
- The median age of farmers/farm managers is increasing in a number of regions and industries. Evidence was presented at the National Tractor Safety Conference that loss of co-ordination skills with age is a contributing factor to accidents with tractors.
- A factor in child risk on-farm is the higher rate of employment of women both on and off-farm. This may expose children to greater risk due to reduced capacity to supervise children and the inclusion of children in farm activities due to combining the child minding role with farm work.
- Some recent legal interpretations in the courts are likely to hasten a re-examination of the legal framework upon which the OHS acts of Australian States are based, with pressure being brought to bear on all businesses to improve risk management systems. It is not clear where the trend in regulation — toward self-regulation or toward externally imposed regulation — is going. Farmers, should be involved in the development of these systems as happens with 'users' in other industries.
- There is an increasing range of courses that farmers are recommended to do to upgrade skills and knowledge. However they are not costless with fees and time involved and farmers' resources are increasingly squeezed with a potential backlash for willingness to be involved in further training unless clear benefits can be established.

Industry and government and OHS

Each State, Territory and the Commonwealth has specific occupational health and safety legislation. Generally, that legislation contains broad performance based obligations, underpinned by more specific regulations and Codes of Practice. In large part these regulations are based upon Australian Standards, although they are not uniformly adopted or applied. Each jurisdiction, similarly, has separate workers compensation legislation. Generally, each State or Territory has in place arrangements that permit one or more authorities to administer and enforce occupational health and safety legislation, provide advice and guidance to employers and employees, fund research and collect statistics and carry out publicity campaigns.

In 1995 the Industry Commission identified major shortcomings in OHS legislation:

There are major shortcomings in OHS legislation – the legal rights and responsibilities are unclear, the present regulatory framework is not conducive to best practice, there is too much legislation, too little practical guidance on what to do to meet it, and there are inconsistent legal requirements placed on workplaces (Industry Commission Work, Health and Safety: An Inquiry into Occupational Health and Safety (1995) Vol. 1: Report No.47 p 41.)

There are moves to address these issues; for example the Workplace Relations Ministers' Council has released three reports on comparative performance monitoring in respect of each jurisdiction. These reports enable users to compare trends in OHS and workers compensation between jurisdictions. In addition, the National Occupational Health and Safety Commission is working towards greater uniformity in the uptake of Australian standards for all OHS subject areas and, at the same time, identify where they need to be brought up-to-date. These standards provide a large number of the specific ways to meet performance-based obligations placed upon employers, including farmers as employers.

The ongoing complexity of OHS laws and underpinning standards and regulations is a major impediment to compliance with OHS especially for small business people, including farmers.

The mid 1990's saw increased government and industry attention to the problem of farm OHS, and the institution of the Farmsafe Australia association at national level and state Farmsafe organizations in most states.

Farmsafe Australia is an interagency association with a mission

To improve the well-being and productivity of Australian agriculture through enhanced health and safety awareness and practices.

It is led by industry and its member agencies are:

- National Farmers' Federation
- Country Women's Association of Australia
- Australian Workers Union
- Department of Transport and Regional Services
- Department of Agriculture, Fisheries and Forestry – Australia
- National Occupational Health and Safety Commission
- Rural Industries Research & Development Corporation
- Rural Training Council of Australia
- Tractor and Machinery Association of Australia
- Australian Centre for Agricultural Health and Safety
- Farmsafe Western Australia Inc
- Farmsafe New South Wales
- Farmsafe Queensland Ltd
- Tasmanian Rural Industry Training Board
- Farmsafe Victoria
- Farmsafe South Australia.

One nominated member and one alternate member represent each member agency on the Management Committee.

The costs of farm injury

The cost of farm injury to Australia has been estimated to be as much as $1.29 billion per annum (Fragar and Franklin 2000). These costs are due to lost production (lost working days), increased farm production costs (such as due to damage to plant and equipment), and health care costs. They do not include the pain and suffering for the victim and the family that accompanies farm death and injury. These costs are significant and a reduction in farm injury and death to all industry levels would provide substantial savings to farmers and to the broader community through reduced costs imposed on

state and federal health services. This fact needs to be demonstrated to raise the awareness of the benefits to be gained.

Worker's compensation

Most farms are family enterprises and farmers are not covered by the State worker compensation schemes. Fragar and Franklin (2000) report that between 15 and 19 per cent of farm injuries that require medical attention or result in at least one working day lost are subject to a worker's compensation claim. In 1995 around 6 000 claims for workers' compensation were made, with an average cost per claim of $6 920. This was 23 per cent higher than the all industries average cost per claim. On average 51.8 days were lost per worker compensation claim in agriculture, ranging from 79.2 days in the vegetable sector to 45.6 in services to agriculture. The total loss of working days in agricultural industries in 1992–93 was estimated as 308 000.

2. R&D to date

The RIRDC program

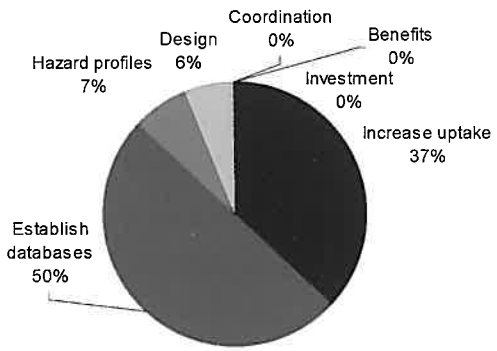
RIRDC established its farm occupational health and safety program in 1990. RIRDC was instrumental in bringing together the Joint Venture partners that fund and oversee the current OHS R&D program. The first R&D plan for the Joint Venture commenced in 1998 after extensive consultations dating from 1996.

The role of RIRDC, in providing cohesive leadership for Farm OHS R&D, has given a central focus to research efforts and has enabled the development of the databases and seed funding for moving research into action. Examples of this include: the development of Farm Safety course materials and curricula; the establishment of the framework for delivery and continued coordination of the Managing Farm Safety Courses to farm managers nationally; and the development of commodity based hazard profiles from the central data sources.

Resources and Allocation: 1998–2001

Over the period of the previous Farm Health and Safety R&D Strategic Plan from 1998–2001, a total of $886 365 was allocated to research projects. Chart 2.1 indicates the allocation of R&D funding by Research Objective for 1998–2001.

Chart 2.1 R&D funding 1998–2001



Data source: Cummings 2001

Over this period, objectives 1, increase uptake, and 2, establish databases, have received the most funding, at 37 per cent and 50 per cent of project funding respectively. These objectives relate to improving the uptake of Farm OHS practices and principles and the establishment of comprehensive information and statistical databases, which were high priority issues. Seven per cent of funding was allocated to hazard profiles, while 6 per cent was targeted at objective 4 ensuring OHS aspects are integrated into the design of all new technology.

No significant project funds were devoted to objectives 5, increase investment, 6, coordination, and 7, measurable benefits. However, this expenditure share belies the considerable effort that has gone into achieving these objectives. These objectives are largely about the process by which R&D is encouraged, coordinated and utilised to deliver information and programs that reduce farm injury risk. The management activities of the program have themselves delivered on these objectives.

Objectives 6 and 7 were to increase investment in farm health and safety and to improve the use of resources through national coordination. Much has been achieved in both areas. The greater involvement of industry organisations and the pivotal role being assigned to Farmsafe point to success in achieving these objectives. The R&D program has been critical in achieving this outcome.

Objective 7 is to ensure that farm health and safety R&D projects deliver measurable benefits and contribute to future needs for the farming community. The capacity to measure benefits has been greatly enhanced by the development of the network of databases. However analysis of the data has yet to link program R&D activities to on-farm OHS outcomes. Objective 7 also requires that teachers, researchers, Farmsafe and Government legislators and funders act to reduce current OHS risks and to be forward looking to mitigate future risks. This objective very much carries over to this new R&D year plan.

Research Projects completed or initiated in the period from 1998 to 2001 are summarised in Appendix B.

Achievements in R&D and their outcomes

The role of R&D in Farm Health and Safety

R&D has played an important role in placing Farm Health and Safety 'on the agenda' for farmer groups, government and research organisations. The driver for this has been the commitment to centralised data collection and analysis that has enabled evidenced based discussions, founded on objective data and information, rather than subjective opinions.

Data analyses have allowed the issues in Farm Health and Safety to be defined, quantified and for consistent messages to be produced and circulated, based on this core data. This move to evidence based decision and discussion has positioned Farm OHS for direct involvement in broader on-farm Quality Assurance programs (that also include environmental management systems and best management practice) and Workers' Compensation issues.

The development of commodity specific hazard profiles has provided a vehicle to move research into action. These profiles have not only identified the areas of risk within production processes but have indicated the current gaps in research and knowledge which can be used to direct future activities towards active interventions to bring about reductions in numbers and severity of injury.

Outputs of the R&D projects to date

The outputs from the R&D program of the Joint Venture have played a significant role in raising the level of knowledge about the high risk and cost of injury and illness in agriculture and in developing OHS risk management resources and training delivery systems to assist farmers and farm managers to improve management of risk. Every program for prevention of injury has relied on statistics for alerting people to the problem, for example ROPs programs, safe tractor access platforms and monitoring imported machinery. The full list of RIRDC projects undertaken is shown in appendix B. Some examples of outputs that have directly contributed to OHS program development are given in table 2.1.

Table 2.1: Examples of outputs that have directly contributed to OHS program development

Outcome area	Key joint venture outputs
Knowledge of injury/ illness risk and cost to industry	▪ Health and Safety of Australia's Farming Community — ACAHS report ▪ Farm-related fatalities in Australia 1989–1992 — ACAHS/NOHSC report ▪ Survey of farm work injury in Queensland — Queensland Division of Workplace Health and Safety report ▪ Health and Safety of South Australian Farmers, Farm Families and Farm Workers — ACAHS report ▪ Rural Injury in Central Queensland — ACAHS report ▪ Effects of modification of tractor seats on musculoskeletal performance — University of South Australia ▪ Effects of whole body vibration on the spine in farmers driving tractors — University of South Australia ▪ Pesticide and Human Health Research Workshop - RIRDC ▪ Maintaining safety of lifting and excavating attachments of tractors — Kondinin Group (UMO) ▪ Safe storage of farm chemicals — Kondinin Group ▪ Farm Injury Optimal Dataset — Providing underpinning coding framework and methodology ACAHS
Commodity specific knowledge	**OHS hazard profiles — ACAHS** ▪ Cotton ▪ Sugar ▪ Sheep and wool ▪ Horticulture ▪ Grain ▪ Dairy **Other research** ▪ Cattle yard design — Kondinin Group
On-farm management resources	▪ Managing Farm Safety — Guidance Notes ACAHS ▪ Evaluation of Managing Farm Safety program — MUARC
Education & Training in Farm Health and Safety	▪ Establishing the farm health and safety training network — Farmsafe Australia ▪ Rural safety education in schools — RIPPER project of VFF

Source: Lyn Fragar personal communication, October 2001.

Issues for the R&D program

SWOT analysis — providing a guide to R&D

The SWOT analysis is presented in table 2.2. A point raised in the workshop is that agriculture is inherently more risky than many other industries. Farmers traditionally work in isolation due to the distances between and within farms which increases risks and often makes communication difficult. In particular the need to use agricultural and veterinary chemicals and handling livestock add to the OHS risk facing farm businesses. In addition the co-location of the home with the farm business compounds OHS risk as family members and visitors not engaged in farm activities may still be exposed to farm work place risks. The SWOT analysis in the table below focuses more on what can be done to manage and mitigate these risks as the sources of risk are largely inherent to the agricultural enterprise.

Table 2.2: SWOT analysis

Strengths	**Weaknesses**
Influencing adoption of farm safe practices	
Most farm organisations support improving OHS	Farmers often do not consider OHS in their decision making processes
	Often a short term approach to OHS
	Imported machinery often has sub-standard OHS designs
	There are no direct financial incentives for OHS training or compliance such as discounts on insurance premiums
	There is general ignorance of the risk and costs to individuals and the farming community of poor OHS practices
Influencing the effort in and success of R&D	
Considerable research experience available in OHS	There is a low private rate of return on R&D investment making it difficult to attract mainstream funding
A central point for data collection has been established which will facilitate analysis	Insufficient analysis has been undertaken to identify all emerging risk areas and contributing factors to risk
Strengths	**Weaknesses**
Influencing the effort in and success of R&D (continued)	
R&D has support of OHS authorities and other key stakeholders	There is a complex regime and array of funding sources that make it difficult to source funding for larger national programs
Existence of rural commodity specific R&D organisations	

Influencing success in promoting adoption	
Agriculture has good infrastructure and systems for communication and the dissemination of information	Current farm OHS programs are not integrated into existing education, extension and training services
Farm OHS community has good access to industry decision makers	Distance to services for rural based businesses which increase program delivery costs and attendance costs for farmers
Legislation is supportive of self-regulatory function of farm safety	Legislation varies by state and contradictory systems exist
Opportunities	**Threats**
For/to adoption of safe farming practices	
Farm safety is on 'priority list' for farmers as indicated by groundswell of local community interest (for example, Farm safety action groups)	Declining agricultural terms of trade increasing financial and labour pressures on farmers
Greater voice of and participation of women in farming, who are generally more supportive of OHS practices	Declining social infrastructure in rural communities increasing isolation of farm families as farm sizes increase and population density declines
For/to adoption of safe farming practices	
Emerging culture of learning within rural Australia, and younger farmers are accessing more formal training	Increasing median age of Australian farmers with fewer young people entering the industry
Greater adoption of farm management systems and focus on QA and environmental management systems	Increasing use of pesticides and hazardous substances with market demands for quality and less mechanical weed control for environmental reasons
Industry restructuring will see some of the higher risk farm sectors (low capital, low profitability) leave the industry and provides an opportunity for introduction of new (better, safer) systems	Natural disasters have a range of economic and social implications that impact on farm OHS
Potential for market based incentives to develop to adopt OHS	Farm community concerned about the cost of achieving minimum compliance standards

Opportunities	Threats
For/to more effective OHS promotion	
The current Federal government is receptive to a rural focus which may assist funding	Changing political priorities can impact on OHS funding
There is increasing focus on human and social issues by all Rural based R&D organisations	Focus on the environment may divert attention from OHS issues
Potential to include farm OHS into EMS and QA programs (for example, Flockcare, Cattlecare)	
More is being learnt about successful agricultural extension (RIRDC are sponsoring a Co-operative Venture in innovating and developing human capacity in rural industries)	Public funding for agricultural extension continues to trend downwards
IT is currently under utilised as a delivery and communication medium and has considerable potential for further development	

Source: Derived from the draft plan (Cummings 2001).

Key issues

A number of themes emerged from the workshop and the SWOT analysis.

The need for an integrated approach

Greater integration is required across all areas of farm OHS from the regulatory system, to the training and education system, to accreditation processes and in R&D. One area for analysis is in legislation and regulatory regimes. There is a need for comparisons with other jurisdictions with different systems to see if there are more successful models. There are also opportunities for enhancing the efforts of regulators through better targeting.

While considerable progress has been made since the inception of the RIRDC program on farm OHS in 1990, this progress needs to be capitalised on to provide farmers with a unified simple set of opportunities to improve safe working practices on farm. Key areas for further progress are in the regulatory and official information regimes and in training and education programs.

Barriers to adoption of OHS

There are a number of opportunities for further eroding the barriers to adoption of safe working practices on farms. The structural change in the industry offers considerable opportunities for whole of farm planning and management, which should include OHS. This is supported by greater participation of women as farmers and farm managers and by the higher level of training and education undertaken by younger farmers.

Since 1999, the Managing Farm Safety Course, which is funded by the Joint Research Venture to deliver its research findings, has trained around 4,000 farmers. In two states (WA and NSW), successful completion of this course is a key requirement for a discount in workers' compensation. However, there is still a need for greater recognition of the costs imposed by poor OHS on farm families and the broader community. Recognition by the insurance industry and worker's compensation in all states of the savings to their industry of safer farm practices and further discounts on premiums, would be a win-win situation for all.

Issues in collection and utilisation of data on farm OHS outcomes

Data is an important resource in understanding the changing impacts on the farming community from an OHS perspective. Farm related data is collated from existing data sources for example, coronial reports, hospital admissions, workers compensation injury and illness. The data provides a mosaic from which lessons can be drawn to identify existing and emerging areas of injury risk. However, the lack of comprehensive data limits the analytical possibilities. Given the cost of additional data collection opportunistic means such as the National Farm Injury Optimal Dataset for all surveys have been set in place. The value of the data will be demonstrated if it provides convincing evidence of the cost savings to insurers of adoption of accredited farm safe work practices.

This data is also used to drive the goals and targets for Farm Health and Safety organisations and to support research, policy and strategy development. Ensuring that data is collected, utilised and disseminated appropriately is a key issue.

Farm machinery

The design of new processes and technologies must incorporate OHS principles to ensure that new products and technologies are safe. Given the negative association of machinery age and safety, research into the OHS impact of existing practices and equipment is also required to ascertain possible remedial actions and modifications that may significantly improve operator safety.

With changing work and social environments, it is also important that potential 'new' hazards are identified and minimised. These issues are magnified by the increasing size and mechanical complexity of farm machinery and by the greater incorporation of agricultural and veterinary chemicals into the production system.

Good machinery offers not just a means of increasing productivity, but also working more safely. For example OHS risks associated with animal handling and shearing could be reduced by new or better machinery. The value of effective well designed machinery to perform work that at present results in farm injury is deserving of attention. Legislative barriers to its encouragement should be identified and addressed.
New technology also offers new approaches to learning and to undertaking research. The Internet provides a direct pathway to information on practices and risk management systems, but the plethora of information can be confusing. Access to a single entry point where the information has been vetted and is consistent and well presented would reduce both the cost of and risk to the farmer of accessing information via the Internet.

3. The R&D Plan

Vision

The vision presents the ideal view of the world that will be achieved not only through the R&D program but also the efforts of the industry and government agencies promoting OHS and the effort of individual farmers in adopting safe systems of work.

Enhanced well being and productivity in rural industries through improved OHS status of Australian agriculture delivered by the establishment of safe systems of work on farms.

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Objectives

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3. To complete on-farm safety management packages for all major commodities including horticultural industries and encourage their incorporation into broader farm management packages.
4. To update and further develop training material and delivery modes more likely to be taken up by farmers.
5. To maintain, support and utilise the collection of data on farm health and safety issues.

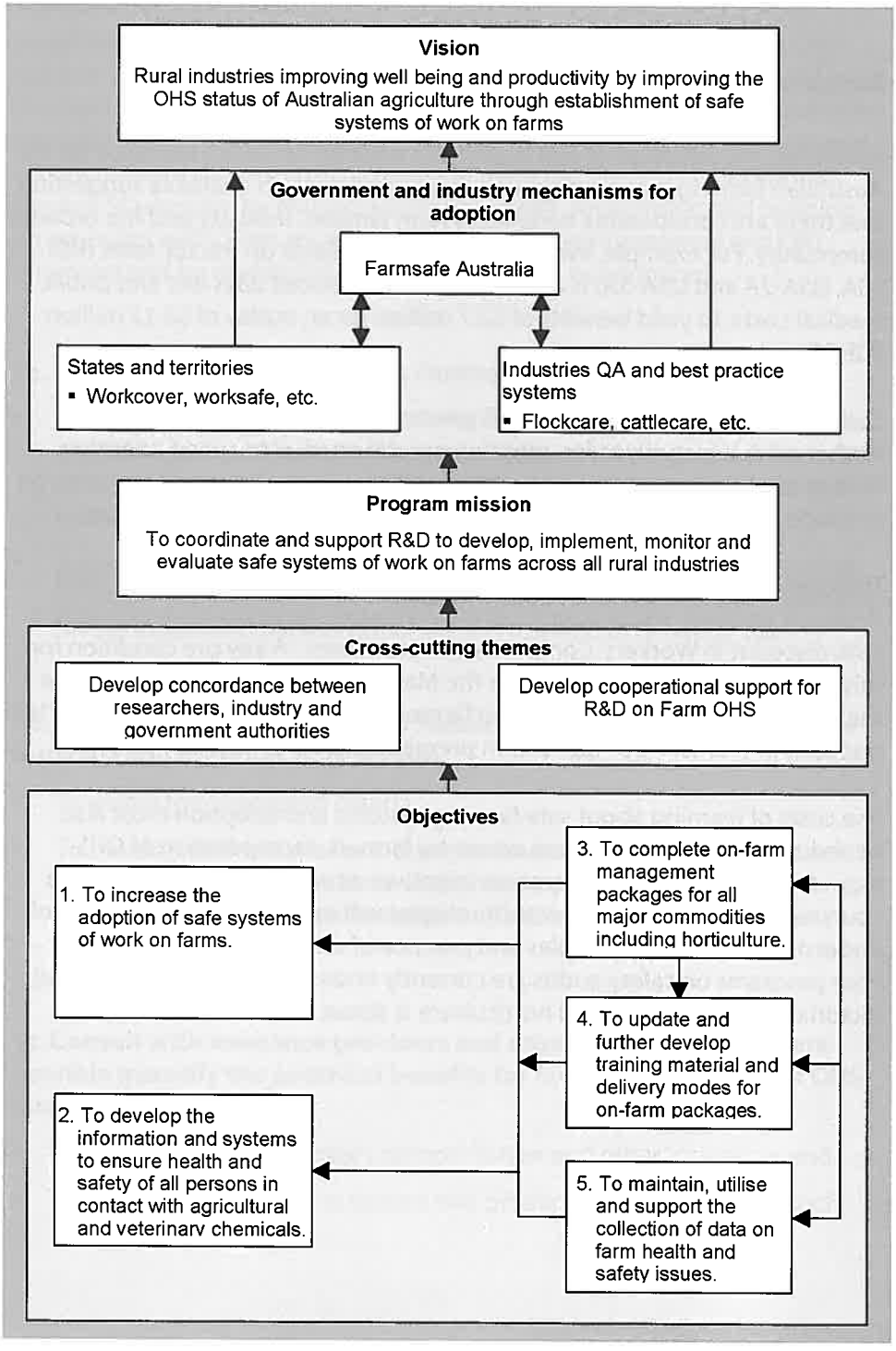
There are two important cross-cutting themes or issues. These are objectives that can only be achieved by partnerships and joint efforts of organisations involved in farm OHS. All the strategies to achieve the objectives should take account of these cross cutting themes and be seen as opportunities to promote them.

The first is the need to provide a process to develop a concordance — agreement on a common approach — across the industry groups and government departments involved in OHS on farms. The objective is to present a unified view to farmers and a single one-stop process for gaining accreditation. This requires coordination between programs that certify and audit safe farm practices as many farmers produce multiple commodities. Cooperation is also needed to identify the rewards from adoption of OHS accreditation. These rewards may flow from negotiated discounts on worker's compensation and other insurance. Premiums on product prices might also be earned on certified commodities, where certification could include an OHS component.

The second cross-cutting theme is the need to coordinate and promote investment in R&D in the OHS area (objectives 5 and 6 in the 1998–2001 Plan). Current industry partners and new partners will be attracted if the program offers their members something of value. Effective policy advice and program designs as well as monitoring and evaluation capabilities are the key R&D outputs of value to these groups. Development of a national register of R&D projects in the area is one component of this. More important are outreach efforts of current members and tailoring R&D and demonstrating effective prevention to attract new partners.

These two themes are part of the mission of the Farm OHS program, but they apply at the decision making level and should be applied to all the strategies. Chart 3.1 summarises the plan.

Chart 3.1: Overview of the Plan



Objective 1

Increase adoption of safe systems of work on farms

Background

Increasing the adoption of safe systems of work on farms is a key issue for the Australian farming community, with the limited analysis available suggesting that there are considerable benefits to farm families, industry and the broader community. For example, evaluation of three projects on tractor seats (KDI-10A, USA-2A and USA-3A) is anticipated, from reduced days lost and public medical costs, to yield benefits of $2.7 million for an outlay of $0.17 million (CIE 2001b).

Cultural barriers to adoption of OHS practices are being eroded but further market incentives for adoption are still needed to speed adoption. Widespread market incentives such as insurance discounts and premiums on products require a supporting accreditation framework for certification.

Through the Managing Farm Safety Training Program funded by the Joint Research Venture, major rural insurers in Western Australia have provided a 15% discount in Workers' Compensation premiums. A key pre condition for this premium is the participation in the Managing Farm Safety Course. The same pre condition exists for cotton farmers in northern NSW to receive a 10% discount in Workers' Compensation premiums.

The costs of learning about safe farming systems and adoption must also be reduced in order to increase access by farmers. Incorporation of OHS aspects into training and education initiatives as well as purpose designed courses, and utilisation of new technologies will improve the penetration of understanding of the principles and practice of safe farming systems. Pilot programs on safety audits are currently underway in Tasmania (sheep), Victoria (small business), and horticulture is about to commence.

Strategies

The overall strategy is to identify market driven incentives to farmers to adopt farm management practices and QA programs that include an OHS module. R&D can support this by developing an appropriate acceptable set of criteria and demonstrate a relationship between these criteria and benefits that will provide a return to farmers from adoption. The cross-cutting theme of concordance can assist this strategy in reducing the costs to individual farmers of adoption by making adoption simpler, recognising and building on synergies with other accredited (for example environmental and QA) programs and by working to improve the returns to adoption.

1a. Review the pilot programs on Farmsafe accredited farms.

- Validate draft criteria for Farmsafe Farm accreditation. Promote inclusion of OHS modules based on criteria into industry QA programs or broader farm management packages. The draft criteria are to be evaluated at the round table (strategy 1b).
- Assess success in adoption and the response of farmers to the incentives provided in the programs — this information is part of building information on the incentives that individual farmers respond to (strategy 1d).

1b. Undertake a round table with industry QA personnel and Farmsafe Australia and others as appropriate.

- To assess the suggested criteria.
- To develop draft criteria for industry consultation — these draft criteria are to be circulated in order to assess the impact they may have on insurance and other costs (strategy 1c.) and incentives for adoption (strategy 1d.)

1c. Consult with insurance providers and others to assess and where possible quantify the potential benefits for farmers of adoption of OHS modules of QA systems.

- Potential savings in worker's compensation and other insurance; and
- Change in market returns (access and premiums) on adoption of such accreditation.

1d. Assess the impact of changes in incentives and disincentives (financial and regulatory) on adoption of safe systems of work on farms. This will include:

- literature review
- response to draft criteria on feasibility of adoption
- relative importance of financial and regulatory incentives
- farmers' understanding of their legal obligations and how this impacts on incentives
- cost of acquiring the accreditation and;
- summary of issues facing attitudinal change to adoption of improved OHS practices.

Targets and performance indicators

Table 3.1: Objective 1 - Targets and indicators

Indicator	Target	Means of verification
Number of commodities with safety audits (criteria agreed and implemented) available	Target to be set annually by Advisory Panel on discussion with Farmsafe Australia	Monitoring by Farmsafe Australia
Share of producers in each industry which have undertaken a safety audit	50 % of farmers 4 years after audit kit available	Industry surveys, possibly include in ABARE Farm Survey
Number of industry management packages (QA and broader packages) that contain an OHS module.	Target to be set annually by Advisory Panel on discussion with Farmsafe Australia and industry	Monitoring by Farmsafe Australia
Change in the cost of worker's compensation insurance	20 % discount for producers on undertaking safety audit and implementing a farm safety management system	Monitored by Advisory Panel through contact with insurers and worker's compensation providers

Objective 2

Information and systems to ensure the health and safety of persons coming into contact with agricultural and veterinary chemicals

Background

In May 2000, the joint venture hosted a one day workshop of 38 invited participants from agricultural industries, chemical industries, government and research agencies to consider research needs in the area of pesticides and human health. There is a myriad of laws and agencies governing chemical use. While the National Registration Authority (NRA) provides federal registration of chemicals for use in agriculture and veterinary purposes it is neither exclusive nor inclusive in its coverage. There are conflicting legal requirements and ramifications under the existing legal framework of State regulation governing 'control of use' and OHS requirements.

Agricultural and veterinary chemicals (pesticides) are defined as a substance used to destroy, prevent, attract or repel pests or to regulate plant or animal growth. It can be in the form of a liquid, power dust, granules, baits or a gas. Some chemicals can cause death if exposed, inhaled or ingested and others may pose long term health risks. For example the pesticide chlordimiform, removed from the market in 1978, had known associations with bladder cancer, and organophosphate pesticides currently used in sheep dips are reported to be related to neurotoxicity under the conditions of use, particularly repeated exposure, in the United Kingdom (Fragar and Franklin 2000).

Worker exposure studies have been undertaken in a number of specific agricultural settings — cotton chippers, horticultural industries, vineyard workers, market gardeners and sheep handlers. The studies that looked at practice found a breakdown of preventative strategies, while those measuring exposure found some evidence of exposure. These studies are thought to be biased toward the more informed and concerned section of each industry.

The National Registration Authority (NRA) is currently reviewing selected organophosphate pesticides in response to OHS concerns. Reviews undertaken as part of the NRA's Chemical Review Program, on priority risk basis. Under the review program the NRA examines approved chemicals and registered chemical products to ensure that they meet contemporary standards of health and environmental safety including occupational health and safety, as well as continuing to pose no undue risk to trade.

A National Farm Chemical User training (Farmcare, CHEMCERT) program has been developed and is being implemented throughout the rural network of TAFE and other training providers. In some states, at least, purchasers and users will be required to hold such certification before being able to purchase more toxic chemicals. A similar program is in place for aerial operators and for resellers of chemicals.

Strategies

2a. Undertake a study of the various agencies' systems (state and federal) that govern the registration and use of agricultural and veterinary chemicals to:

- identify where regulatory systems are aligned, where they diverge, where they overlap and where there are gaps;
- develop recommendations to reduce duplication and inconsistencies and provide a more stream-lined, integrated and simpler regulatory system for farmers to follow; and
- the research should include case studies, such as safe systems for dealing with organophosphates and other chemicals that may have risks in application, and evaluate new application technologies.

2b. Encourage the development of a central system with overall responsibility for providing risk management information on agricultural and veterinary chemicals that is consistent and up to date.

- Define the information needs of all persons coming into contact with agricultural and veterinary chemicals as regards the safe handling, transport, use and disposal of the chemicals.
- Convene a forum to present the results of the study (strategy 2a) and to discuss options for improving coordination between state and federal agencies.

2c.Assess the effectiveness of a range of risk control measures. The study would:

- identify the main risk control measures used in regard to agricultural and veterinary chemicals;
- select a set of priority chemicals and/or measures for assessment — this would draw on exposure information (strategy 2d) and advice from industry and the R&D Advisory Panel: and
- undertake an assessment of the effectiveness in terms of health and safety outcomes at the individual and community level. An assessment of factors influencing adoption should be included in assessing effectiveness at the wider level. Communicate results directly to all parties with responsibility for the risk control measures.

2d. Undertake worker exposure studies in areas of priority concern. This strategy would:

- assemble an expert group to identify what is happening out of the NRA chemical review program and the main areas of exposure for the R&D organisations;
- identify the range of population groups exposed to agricultural and veterinary chemicals and utilise existing data to identify potential problem areas or major gaps in understanding of exposure. The forum proposed in strategy 2b could inform this process;
- undertake exposure studies to identify the level of risk to human health associated with use of agricultural and veterinary chemicals in priority areas, such as organophosphates and the effective barrier distance between farms and residences. Funding partners for undertaking the studies should be sought from industry and others with an interest in the outcomes; and
- communicate the results to all relevant audiences at an appropriate level for the audience. A website providing relevant information should be developed to allow farmer access and feedback.

2e. Encourage and advocate the development of an adverse health effects register of both use as instructed and accidental over exposure.

- Examine existing data collection systems to assess available data on adverse health effects, and systems that may be able to collect data. Assess the costs of additional data collection by type and frequency of data collected. Encourage key stakeholders to support the register.
- Identify the potential stakeholders in an adverse health effects register and explore the benefits to each of the stakeholders from the information that could be available in a registry.
- Communicate results of the studies to potential stakeholders.

Targets and performance indicators

Table 3.2: Objective 2 - Targets and performance indicators

Indicator	Target	Means of verification
Comprehensiveness of information on agricultural and veterinary chemicals available from one point of contact for farmers.	One stop shop to provide current NRA and risk management procedures including an assessment of their effectiveness to be established by 2003	Monitoring by Advisory Panel
Number of inconsistencies between states and between state and federal legislation	Reduced inconsistencies	Monitoring by Advisory Panel
Establishment of an adverse health effects register	Pilot register established	Annual report by Registrar to funding agencies

Objective 3

Complete on-farm management packages

Background

The Managing Farm Safety course, supported by the Farm Health and Safety Joint Research Venture, provides participants with a package of farm OHS management resources that were developed by the Joint Research Venture. These include:

- Commodity specific farm hazard checklist and business plan
- Commodity specific worker induction sheets
- Worker training register template
- Register and record of use of hazardous substances template
- Guidance notes relating to specific hazards:
- Agricultural health and safety guidance notes;
  - Tractor rollovers;
  - Tractor runovers;
  - Tractor power take-offs;
  - Noise on farms;
  - Farm machinery;
  - Ergonomics and manual handling on farms;
  - Children on farms;
  - Horses
  - Farm motorcycles
  - Animal handling
  - Workshop safety on farms
  - Organic dusts on farms
  - Farm chemicals
  - Firearms safety
  - Heat stress on farms
  - Sun safety on farms
  - Woolshed safety.

Strategy

The strategy is to build on current knowledge by addressing the gaps in the knowledge base and to utilise this knowledge to ensure that on-farm management packages are available for all key risk areas in all major commodity industries.

3a. Develop management resources — on-farm management packages including audit kits and OHS plans— for:

- Horticulture (with Horticulture Australia Ltd)
- beef (with Meat and Livestock Association)
- pigs (with the Pork Australia Ltd)
- rice (with the Ricegrower's Cooperative and RIRDC's Rice Program)
- update of grain's package (with the Grains R&D Corporation)
- egg production and chicken meat (with RIRDC's Egg and Chicken Meat Programs)
- others as identified.

3b. Develop effective intervention packages in key risk areas. These packages will require assessment of legal OHS requirements and compliance levels for suppliers and manufacturers. The potential use of personal location devices and emergency communication systems should be assessed as part of the design process. Some key risk areas identified are:

- ag bikes, motorcycles and all terrain vehicles
- farm machinery including some old risk areas such as machinery associated with milk and wool harvest
- tractor run over
- horses
- agricultural and veterinary chemicals (in conjunction with strategy 2c)
- communication for people working in isolation
- others as identified.

3c. Monitor for emergence of other key risk areas (with strategy 4) and provide assessment as required. Advocate for further R&D in these areas. Areas to consider are:

- impact on OHS of new and emerging management technologies; and
- organic dusts and respiratory diseases.

3d. Communicate and promote the on-farm management packages and intervention packages.

- Utilise workshops and forums and find other effective means to promote awareness among regulators, industry bodies and other agencies of the packages.
- Encourage the development of a nationally consistent regulatory regime and support the implementation of national farm machinery strategies, which is currently at the report writing stage.

Performance indicators and targets

Table 3.3 Objective 3 — Targets and performance indicators

Indicator	Target	Means of verification
Number of on-farm OHS management packages completed, by industry and by key risk area	Target to be set annually by Advisory Panel with areas identified	Farmsafe Australia
Adoption rates of the OHS management packages in each industry	Targets to be set on an industry by industry basis	Industry to monitor by inclusion of question in any industry surveys undertaken. Could be included in ABARE farm survey
Adoption of machinery safety standards by suppliers into the Australian market.	100% by 2005	Monitoring by Farmsafe Australia
Reduction in on-farm injury and fatalities	Annual reduction of 20 per cent a year with the goal of no fatalities	Monitoring by AAHU, published reports

Objective 4

Update and further develop training material and delivery modes for on-farm packages

Background

Training material is currently available in print and in some cases electronically. Materials covering the topics described under the background to objective 3 are utilised in the Managing Farm Safety courses. Access to these and other courses that include OHS components is limited by the resources available to farmers and their physical location as well as their family situation. Alternative approaches in extension and education are being developed and used in other areas of agriculture and there is considerable scope for utilising some of these approaches to deliver OHS training. There is also considered to be scope for incorporating more OHS training into other agricultural education and extension services. Training is ideally vertically integrated so all levels of the working team are trained together. As this is not always possible it is essential that information be consistent and have a strong emphasis on developing common attitudes to OHS.

Strategies

4a. Improve methods for assessment of competency and build in an assessment process into training packages.

- Draw on accreditation criteria for QA systems and QA audit processes to develop methods for assessment of competency in OHS.
- Work with the Rural Training Council of Australia (RTCA) to incorporate into the training system.

4b. Develop alternative methods of delivering training on use of on-farm management packages utilising new technologies (Internet, CD ROM versions etc.)

4c. Develop packaging that will effectively transfer information for different target audiences and learning styles.

- Identify the most important target audiences for on-farm management packages.
- Identify communication mediums and presentation styles most appropriate for these target audiences (drawing on findings of strategy 4b).
- Develop new packages of information based on these findings, ensuring material packaged is updated to reflect latest available work (strategy 3a).

4d. Promote the training and development of OHS training professionals.

Performance indicators and targets

Table 3.4 Objective 4 — Targets and performance indicators

Indicator	Target	Means of verification
Incorporation of competency assessment in OHS into training materials	Target to be set annually by Advisory Panel with areas identified	Monitored by Farmsafe Australia
Delivery of information about on-farm OHS packages to target audiences	Communication strategies implemented at target dates to be set annually	Monitored by Farmsafe Australia
Penetration of information (awareness) and active use in target audience.	80% within 4 years of OHS package completion	Industry to monitor by inclusion of question in any industry surveys undertaken. Could be included in ABARE farm survey

Objective 5

Maintain, utilise and support the collection of data on farm health and safety

Background

Much greater understanding of the health and safety of Australian farming populations has emerged as a result of the data collection, compilation and analysis undertaken by the National Farm Injury Data Centre. The development of a national network of databases was the second objective of the first R&D Plan for Farm OHS (1998–2001). Data has been collated from a number of sources, including:

- The Health WIZ National Social Health Database — on rates and causes of death;
- State Coroners — on causes of death;
- National Occupational Health and Safety Commission — on workers compensation claims for injury and disease;
- Hospital admissions — numbers and causes by state; and
- Special collections by the Australian Agricultural Health Unit and others. Recent studies have adopted the definitions and criteria laid down in the National Farm Injury Optimal Dataset.

While the data provides a mosaic of information rather than a complete picture a greater understanding of trends, agents of risk and incidence of death and injury is now available.

Hazard profiles developed so far include:

- Cotton
- Sheep and wool
- Grains
- Dairy, being revised
- Beef cattle
- Horticulture
- Sugar
- Viticulture currently being revised.

These profiles are not static and as new technologies emerge will need to be updated.

Strategies

5a. Maintain the current databases and enhance their usefulness by developing OHS benchmarks for use in QA and accreditation.

- Analyse the data to identify new and emerging OHS problem areas.
- Measure OHS performance across industries and in key risk areas and support the provision of routine update reports on trends from the data to support monitoring of progress on OHS uptake and outcomes.
- Assess the impact on the economic performance of the farm unit and more broadly on industry due to a change in OHS performance, including the effect on insurance costs. (There is a current project looking at methods for undertaking this impact assessment). This analysis should seek to demonstrate the linkages between adoption of safe systems of work and profitability.
- Improve the timeliness of the data collected and information disseminated.

5b. Explore ways of creating additional data sources and capturing currently available data in a centralised system.

- Promote the collection of the 'optimal data set' among researchers undertaking OHS survey work.
- Data warehousing of research databases to make them accessible.
- Opportunistic collection of data.

5c. Maintain and update the hazard profiles series, ensuring all major commodity groups are covered.

- Undertake industry specific hazard analysis in key risk areas of children on farms, machinery, and other key areas as set out in Farmsafe Australia's business plan.
- Update hazard profiles to include the cost of injury and illness (drawing on information in strategy 5c).
- Ensure that in the development and update of hazard profiles they can inform on the criteria for OHS accreditation (strategy 1a, 1b).
- Encourage and provide technical support for commodity groups to pilot on-farm hazard audits.

5d. Promote communication of OHS outcomes and consult with industry to establish OHS benchmarks. Suggested reports (and target dates in brackets) are:

- all states OHS Report (2002)
- farm death toll by State and Industry (2002)
- Australian profile of Farm OHS (2003)
- database compendium listing data sources and information available from databases relating to Farm OHS (2003).

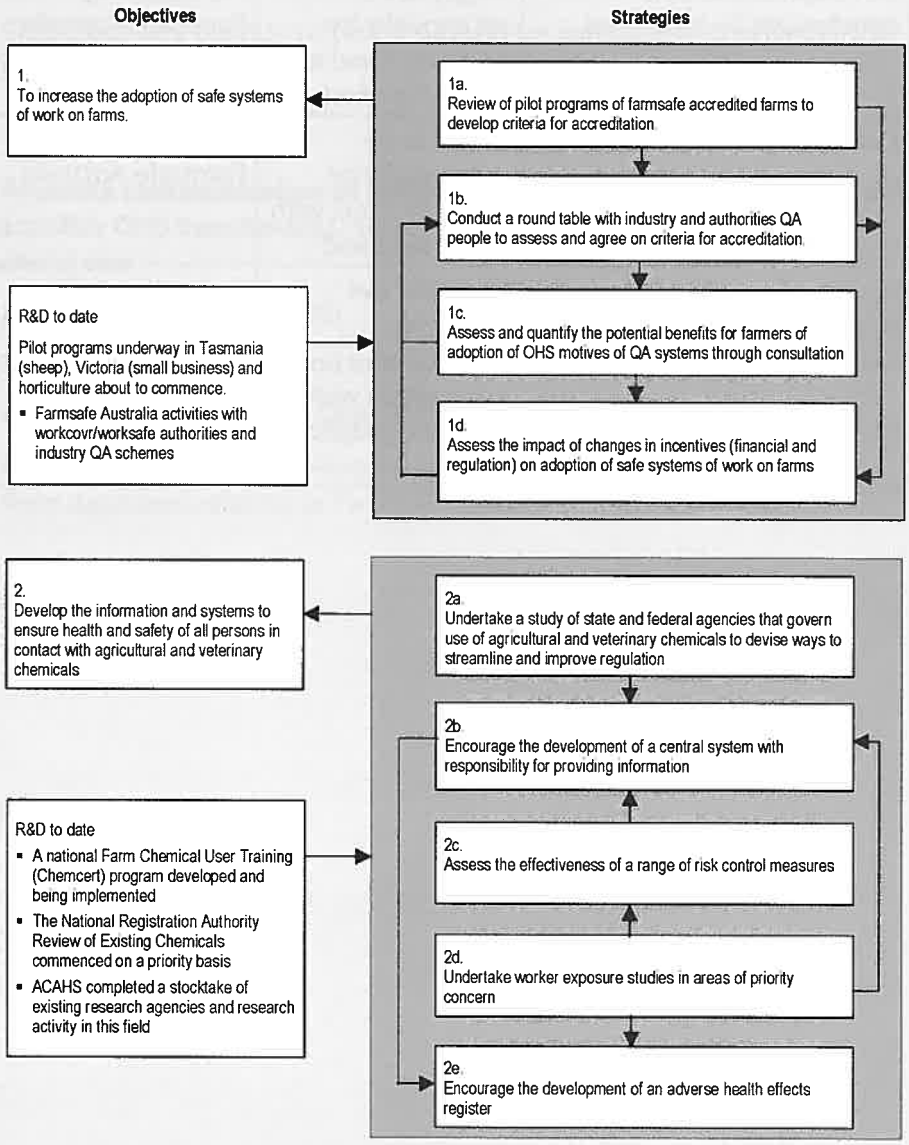
Performance indicators and targets

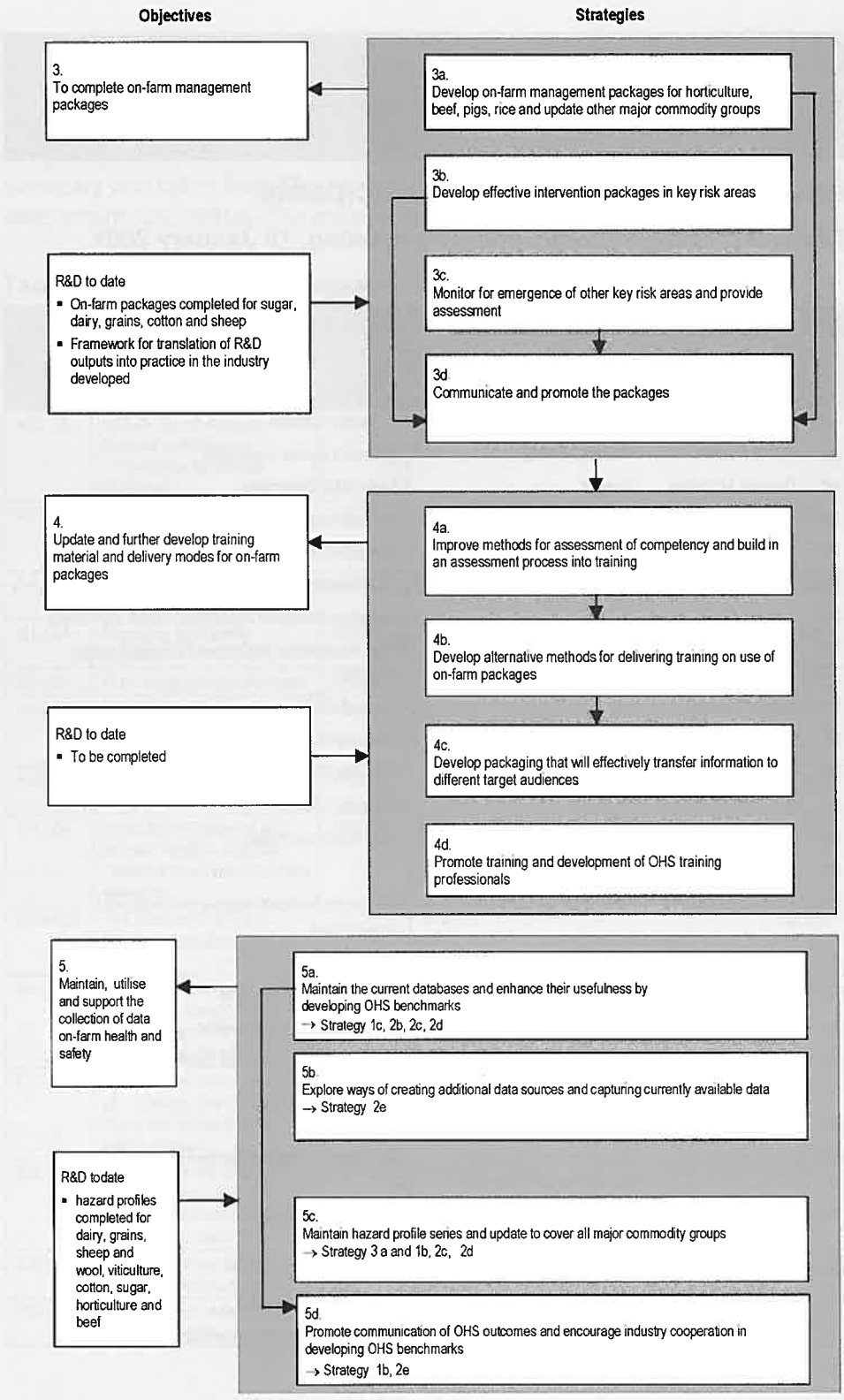
Table 3.5 Objective 5 — Targets and performance indicators

Indicator	Target	Means of verification
Reports produced and number distributed	Target to be set annually by Advisory Panel with areas identified	ACAHS reports and records
Development of OHS benchmarks by industries	Target to be set annually by Advisory Panel with areas identified	Monitored by Farmsafe Australia
Development hazard profiles	Target to be set annually by Advisory Panel with areas identified	Maintained by Farmsafe Australia
Review of the effectiveness of data collection and maintenance agency by 2005.	Cost effective processes undertaken Information widely used and judged valuable	External review

Chart 3.2: Objectives and strategies

Chart 3.2 summarises the objectives and strategies. The arrows in the chart demonstrate the linkages between the strategies. Timing will be crucial, and as there is a chicken and egg problem in many cases an iterative process to progress R&D is recommended.




Objectives
Strategies
3.
To complete on-farm management packages
3a.
Develop on-farm management packages for horticulture, beef, pigs, rice and update other major commodity groups
3b.
Develop effective intervention packages in key risk areas
3c.
Monitor for emergence of other key risk areas and provide assessment
3d
Communicate and promote the packages
R&D to date
On-farm packages completed for sugar, dairy, grains, cotton and sheep
Framework for translation of R&D outputs into practice in the industry developed
4.
Update and further develop training material and delivery modes for on-farm packages
4a.
Improve methods for assessment of competency and build in an assessment process into training
4b.
Develop alternative methods for delivering training on use of on-farm packages
4c.
Develop packaging that will effectively transfer information to different target audiences
4d.
Promote training and development of OHS training professionals
R&D to date
To be completed
5.
Maintain, utilise and support the collection of data on-farm health and safety
5a.
Maintain the current databases and enhance their usefulness by developing OHS benchmarks
→ Strategy 1c, 2b, 2c, 2d
5b.
Explore ways of creating additional data sources and capturing currently available data
→ Strategy 2e
R&D todate
hazard profiles completed for dairy, grains, sheep and wool, viticulture, cotton, sugar, horticulture and beef
5c.
Maintain hazard profile series and update to cover all major commodity groups
→ Strategy 3 a and 1b, 2c, 2d
5d.
Promote communication of OHS outcomes and encourage industry cooperation in developing OHS benchmarks
→ Strategy 1b, 2e

4. Appendices

Appendix A: Workshop participants

Table A1 FH&S strategic planning meeting, 10 January 2001

	Name	Job title	Company
Mr	Russell Cummings		Strategic Business Directions
Dr	Roslyn Prinsley	General Manager, Research	Rural Industries R&D Corporation
Dr	Lyn Fragar	Executive Director	Australian Centre for Agricultural Health and Safety
Mr	John Dawson		Farmsafe Australia
Mr	Richard Calver	Industrial Officer	National Farmers Federation
Mr	Douglas McGuffog	Director	Sugar R&D Corporation
Mr	John Temperley	Executive Officer	Farmsafe Australia
Mr	Richard Franklin	Director, Farm Injury Research	Australian Centre for Agricultural Health and Safety
Ms	Rebecca Mitchell	Injury Prevention Unit	NSW Health Department
Mr	James Houlahan	Farmsafe	Australian Centre for Agricultural Health and Safety
Mr	Dougal Morrison	Farmsafe	Farm Innovations, Agriculture Fisheries Forestry Australia
Mr	James Cupples	Farmsafe	Farmsafe QLD
Mr	Laurie James	Farmsafe	Farmsafe WA
Mr	Lyn Morris	Farmsafe	Farmsafe SA
Mr	S.R Zichy-Woinarski	Farmsafe	Farmsafe TAS
Mr	John Craven		Dairy R&D Corporation
Ms	Anne Taylor		
Ms	Anne Jennings		WA Centre for Rural Health and Community Development
Dr	John Drinan		
Ms	Gilly Simos		Meat & Livestock Australia
Ms	Maree Lalley	President	Country Women's Association
Ms	Sue Richards		Women in Rural Industries Section — AFFA
Dr	Lesley Day	Accident Research Centre	Monash University
Mr	Ron Jenkins		WA Worksafe
Mr	Tony Lower	Senior Lecturer Rural & Remote Health Education	Combined Universities Centre for Rural Health
Ms	Leonie Otago	School of Human Movement & Sports Science	University of Ballarat
Mr	James Taylor	Representative	Young Farmers
Dr	S.R Baskaran		Bureau of Rural Science
Mr	Gordon Gregory	Executive Director	National Rural Health Association
Dr	Brian Curran		Rural Doctors

Appendix B: The RIRDC program projects

Projects undertaken

Forty projects are classified under occupational health and safety. This summary was taken from The Human Capital and Information Systems overall assessment (CIE 2001a). The projects are summarised in table B 1.

Table B1 Industry development and training

Code	Project	Start date	End date	RIRDC total $	Industry total $	Research org. total $	Total $
AAS-2AJ	Update 'Benchmarking financial performance of Australian Broadacre Agriculture	1/12/96	15/03/97	36 915	0	15 000	51 915
AGT-3A	The impact of tax-driven financial investment on new industry development	1/07/97	28/02/99	75 000	0	7 500	82 500
AHU-1A	A national data collection for farm injury prevention	1/07/93	30/06/96	136 200	0	67 890	204 090
AHU-2A	Managing farm safety program	2/01/96	15/06/97	61 826	5 000	25 988	92 814
AHU-3A	Farm injury/illness data centre	1/07/96	30/06/99	189 071	45 000	44 205	278 276
AHU-4A	Establishing the Managing Farm Safety course delivery system	30/03/98	31/12/99	120 600	84 000	60 000	264 600
AHU-5A	Traumatic fatalities on Australian farms 1989-1992	1/06/98	20/12/98	29 043	0	0	29 043
AHU-6A	Agricultural Pesticides and Human Health in Australia - National stocktake of current research	10/06/00	31/08/00	10 000	0	0	10 000
DAN-62A	The Economics of Farm Safety in Australian Agriculture	1/01/91	30/06/93	152 416	0	0	152 416
DAV-64A	Improved Farm Health and Safety through Better Communication of Information on Chemical Labels	1/10/92	30/09/94	51 975	28 000	68 660	148 635
ELL-1A	Consultancy- Development of a strategic plan for farmer occupational health and safety program	1/07/96	2/12/96	36 714	0	0	36 714
ELL-2A	Consultancy- Review of RIRDC project: AHU-1A A national data collection for farm injury protection	1/07/96	31/07/96	3 000	0	0	3 000
GAP-1A	Farm machinery safety regulatory review project	2/01/00	31/05/01	50 400	15 000	1 600	67 000
KDI-10A	An evaluation of farm tractor and utility/4WD seats	1/07/95	30/06/96	25 000	5 000	10 000	40 000

KDI-15A	Identification and dissemination of safe cattle handling alternatives and cattle yard design	1/07/96	30/06/97	8 500	63 000	72 830	144 330
KDI-16A	A study of farm machinery safety	1/07/96	30/06/97	20 000	15 000	15 715	50 715
KDI-23A	A publication about the safe storage of farm chemicals	1/08/98	30/06/99	7 000	0	3 000	10 000
KDI-5A	An investigation of personal protection equipment	1/07/92	30/06/93	18 000	10 000	34 000	62 000
KDI-8A	An evaluation of farm lift hoists and other back saving equipment	1/07/94	30/06/95	21 500	10 000	10 000	41 500
MS967-49	Melbourne meeting to discuss Ripper	18/06/97	18/06/97	3 099	0	0	3 099
MS978-33	FH&S - Preparation of presentation to chair of chairs meeting	1/06/00	1/06/00	1 344	0	0	1 344
MS989-41	Agricultural Chemicals Usage - Preparation of brief	1/06/99	30/06/99	2 420	0	0	2 420
MS989-43	Farm Health and Safety Joint Venture Research Program - Communications strategy	1/12/98	30/03/99	5 370	0	0	5 370
MS990-39	Agricultural Pesticides & Human Health - a one day workshop: Additional expenses (not charged to WS990-22)	2/02/00	15/06/00	1 122	0	0	1 122
MS990-49	Partial Publication costs arising from printing of the report AHU-5A 'Farm Related Fatalities in Australia, 1989-1992'	1/06/00	30/06/00	8 424	0	0	8 424
QDE-1A	Survey of farm work injury and operational procedure on farms in Queensland to assist intervention planning	1/01/95	30/11/95	30 300	0	27 433	57 733
STR-1A	Managing Farm Safety in the Sugar Industry Field Sector	1/05/00	31/07/02	74 974	80 000	32 806	187 780
UMO-15A	Farm injury prevention: the identification and removal of barriers	1/01/96	31/03/98	53 137	5 400	30 842	89 379
UMO-16A	Maximising safety of lifting and excavating attachments for tractors	1/01/96	16/02/00	35 000	20 000	30 000	85 000
UMO-22A	Evaluation of farm injury prevention in Victoria 1998-2001	1/08/98	31/12/02	180 538	0	0	180 538
UNE-42A	Analysis of farmers' perceptions of risk to improve the effectiveness of farm health and safety programs.	1/07/95	30/06/96	26 767	0	15 248	42 015
US-86A	National Farm Injury Data Collection - Australian Centre for Agricultural Health &Safety	1/12/99	30/09/02	242 589	18 000	110 863	371 452

US-87A	National farm machinery safety program - Australian Centre for Agricultural Health & Safety	1/12/99	30/11/01	158 547	28 000	36 850	223 397
USA-2A	The effects of whole body vibration on the spine in farmers driving tractors	1/07/94	30/06/95	20 735	15 000	20 063	55 798
USA-3A	The influence of seat modifications of trunk muscle performance, muscle fatigue and spinal flexion creep in farmers driving tractors	1/11/95	2/12/98	30 491	9 000	21 000	60 491
UWS-10A	Developing an effective extensive strategy for the safe use of farm chemicals by market gardeners of non-English speaking background in the Sydney basin	30/06/94	30/09/97	90 000	97 950	221 724	409 674
VFF-1A	Rural safety education in primary schools	1/06/96	1/04/97	27 164	0	0	27 164
VFF-2A	Rural safety education in primary schools - a project to develop national curriculum and supporting aids	1/07/97	28/02/98	38 900	0	0	38 900
WS967-5	Strategic planning workshop for the development of the farmer OHS R&D plan	24/09/96	24/09/96	5 761	0	0	5 761

Source: RIRDC database

Issues to do with chemicals

Eight projects have focused on chemicals. The focus of all projects has been on reducing risks to human health.

- AHU-6A is a recent project that undertook a stocktake of existing research and research agencies addressing human health issues relating to pesticide exposure. This was input into a workshop (WS990-22 and MS990-39) on pesticides and human health.
- MS989-41 funded the preparation of a brief on agricultural chemicals usage.
- DAV-64A was an early project looking at how farmers use the information on chemical labels, including interpretation of symbols. The aim was to improve effective communication by labels.
- API-1A was an extension project that aimed to improve farm practices to industry standards and reduce the risk to farmers from inappropriate use of chemicals.
- UWS-10A followed a similar line, but focused on communicating with

at raising farmer awareness of practices that result in a high level of injury on farms.

Farm safety programs

Three projects involved planning for programs on farm safety.

- ELL-1A and WS967-5 developed a strategic plan for farmer OHS program. It reviewed existing research programs and strategy plans to develop innovative ways for a cooperative strategy on OHS.
- MS978-33 supported a farm health and safety presentation to the Chair of Chairs meeting.

Farm injury data

Seven projects have collected or compiled statistics on farm injury. The aim of this work is to assess the magnitude of the problem to raise awareness of the need to address the problem and to monitor performance of programs.

- AHU-1A was an early collection of a national data set on farm injury. ELL-2A reviewed this collection.
- US-86A supports the Australian Centre for Agricultural Health and safety collection and reporting of farm health and safety in agriculture and in specific industries. It also aims to assess the costs associated with illness and injury.
- QDE-1A undertook a statistically based farm survey in four areas of Queensland on workplace injury and illness as an input into intervention planning.
- AHU-3A maintained data on farm injury and illness to support policy development in OHS in agricultural industries. AHU-5A drew on this database to describe the frequency, incidence, nature and circumstances of non-suicide traumatic death on farms. MS990-49 supported the publication of this report.

Initial assessment

Table B 2 summarises the classification and the initial assessment. Twenty-eight per cent of projects were assessed as having high returns and almost 17 per cent as medium returns. Eighteen per cent were too early to assess and 33 per cent unknown. This high share is due to the large numbers of earlier projects in this classification.

Table B2: Classification and initial assessment of projects in the Farm Health and Safety Program

Code	Project	Keywords	Stage*	Initial assessment
AHU-6A	Agricultural Pesticides and Human Health in Australia - National stocktake of current research	Chemicals	I	Low
API-1A	Farm Chemical Safety	Chemicals	III	Unknown
DAV-64A	Improved Farm Health and Safety through Better Communication of Information on Chemical Labels	Chemicals	II	Unknown
KDI-23A	A publication about the safe storage of farm chemicals	Chemicals	III	Medium
MS989-41	Agricultural Chemicals Usage - Preparation of brief	Chemicals		Medium
MS990-39	Agricultural Pesticides & Human Health - a one day workshop: Additional expenses (not charged to WS990-22)	Chemicals	II	Medium
UWS-10A	Developing an effective extensive strategy for the safe use of farm chemicals by market gardeners of non-English speaking background in the Sydney basin	Chemicals	III	Medium
WS990-22	Agricultural Pesticides and Human Health — a one-day workshop	Chemicals	II	Low
WSA-1A	Occupational Safety and Productivity of Bushfire Suppression Crews	Fire crews	III	Unknown
AHU-2A	Managing farm safety program	Guidelines	III	High
AHU-4A	Establishing the Managing Farm Safety course delivery system	Guidelines	II	High
DAN-62A	The Economics of Farm Safety in Australian Agriculture	Guidelines	I	Unknown
KDI-15A	Identification and dissemination of safe cattle handling alternatives and cattle yard design	Guidelines	III	Medium
KDI-5A	An investigation of personal protection equipment	Guidelines	III	Medium
MS989-43	Farm Health and Safety Joint Venture Research Program — Communications strategy	Guidelines	III	None
STR-1A	Managing Farm Safety in the Sugar Industry Field Sector	Guidelines	II	Too early
UMO-15A	Farm injury prevention: the identification and removal of barriers	Guidelines	II	Medium
UMO-22A	Evaluation of farm injury prevention in Victoria 1998–2001	Guidelines	I	Too early
UNE-42A	Analysis of farmers' perceptions of risk to improve the effectiveness of farm health and safety programs.	Guidelines	I	Low
VFF-1A	Rural safety education in primary schools	Guidelines	II	Medium
VFF-2A	Rural safety education in primary schools — a project to develop national curriculum and supporting aids	Guidelines	III	Medium
MS967-49	Melbourne meeting to discuss Ripper	Guidelines	III	Medium
GAP-1A	Farm machinery safety regulatory review project	Machinery	II	Too early
KDI-10A	An evaluation of farm tractor and utility/4WD seats	Machinery	II	Medium
KDI-16A	A study of farm machinery safety	Machinery	III	Medium
KDI-8A	An evaluation of farm lift hoists and other back saving equipment	Machinery	III	Medium

UMO-16A	Maximising safety of lifting and excavating attachments for tractors	Machinery	II	Too early
US-87A	National farm machinery safety program — Australian Centre for Agricultural Health & Safety	Machinery	III	Too early
USA-2A	The effects of whole body vibration on the spine in farmers driving tractors	Machinery	I	Medium
USA-3A	The influence of seat modifications of trunk muscle performance, muscle fatigue and spinal flexion creep in farmers driving tractors	Machinery	I	High
ELL-1A	Consultancy — Development of a strategic plan for farmer occupational health and safety program	Planning	I	Medium
MS978-33	FH&S — Preparation of presentation to chair of chairs meeting	Planning	III	High
WS967-5	Strategic planning workshop for the development of the farmer OHS R&D plan	Planning	II	Unknown
AHU-1A	A national data collection for farm injury prevention	Statistics	I	Medium
AHU-3A	Farm injury/illness data centre	Statistics	II	Medium
AHU-5A	Traumatic fatalities on Australian farms 1989–1992	Statistics	II	Medium
ELL-2A	Consultancy — Review of RIRDC project: AHU-1A A national data collection for farm injury protection	Statistics	I	Unknown
MS990-49	Partial Publication costs arising from printing of the report AHU-5A 'Farm Related Fatalities in Australia, 1989–1992'	Statistics	III	Medium
QDE-1A	Survey of farm work injury and operational procedure on farms in Queensland to assist intervention planning	Statistics	I	Unknown
US-86A	National Farm Injury Data Collection — Australian Centre for Agricultural Health & Safety	Statistics	III	Too early

** Stage I Identification of issues / research*

Stage II Development

Stage III Extension of research output

Source: RIRDC database and classification. CIE 2001a forthcoming).

5. References

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