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Rural Industries Research and Development Corporation

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Foreword

This plan is the first analysis of the R&D priorities for the Australian buffalo industry.

It presents the rationale for the program that the Corporation manages on behalf of the Australian Government and industry, and provides all stakeholders with guidelines on what R&D will be funded by the Corporation.

Many industry representatives including members of the Corporation's Buffalo R&D Advisory Committee have provided inputs into the Plan and the Corporation appreciates their valuable contributions.

Dr Peter O'Brien
Managing Director
Rural Industries R&D Corporation

Contents

1. Purpose of the Plan

The purpose of the plan is to give direction to address the objective of the RIRDC Buffalo sub-program (subsequently referred to as program) to accelerate the commercial development of the buffalo industry.

The buffalo R&D plan has three main purposes:

1. to provide clear signals documenting the R&D needs and priorities for the Australian buffalo industry
2. to encourage and support continuing discussion, and interaction between the Australian and international buffalo industries, RIRDC, the facilitators of research, development and extension, and commercial investors, for the benefit of all sectors of these industries
3. to produce R&D strategies and document performance indicators to monitor progress and measure success.

In summary it is published by RIRDC for the Australian government for investors, industry stakeholders and researchers.

The Plan is the first for the Buffalo program and reflects the objects of the PIERD Act (1989).

2. Framework of the Plan

The framework of the Plan is within RIRDC Corporate Plan (2003-2008) which was formulated taking in account the PIERD Act (1989) and the Australian government's four national priorities and seven rural research priorities. The three goals produced in this Buffalo Plan reflect the four goals of the RIRDC Corporate Plan.

Industry priorities were sought via networks created by the Australian Buffalo Industry Council. This plan has been endorsed by the Corporation's Buffalo Research and Advisory Committee. The plan is a living document that can be reviewed at any time and updated as circumstances require.

3. Vision

The Plan's vision is:

A competitive viable Australian buffalo industry, producing livestock and meat/dairy products for domestic and export trading.

4. Background

4.1 Australian History – Summary

Buffalo were initially introduced into Australia at Melville Island in Northern Territory (NT) in 1825. By 1844 buffalo had been imported from Indonesia, Timor and Kisan to three locations in NT. Soon buffalo were released or escaped to many northern parts of NT, and south into the Katherine and Arnhem Land districts.

The first buffalo products traded were hides from 1880 but this industry was greatly decreased with the advent of synthetic products and competition from skins from Asian livestock.

Slaughter for human consumption commenced in Australia in 1961. Export markets to the EC were established in the 1970's. In the early 1980's the Australian BTEC commenced in NT and from a peak population of about 350,000 domesticated and feral buffalo numbers were greatly reduced and today 15,000 to 20,000 are domesticated in NT and an additional up to 40,000 remaining in the Arnhemland.

From the 1980's buffalo have been increasingly farmed in all states of Australia.

4.2 Present situation

<u>World</u> – World buffalo numbers have increased at a rate of 2% over the past 20 years with the population being 165m in 2000. They are spread through most continents – Asia, 97%, Europe 1.3% and South America 0.7%. India has 57% of the world population, China 14% and Pakistan 14%. Buffalo has been for centuries a major component of Asian farming – in both the irrigated and high rainfall locations.

The world's average meat and milk production per animal per annum is 140 kg and 1395 kg respectively with productivity increasing in the last 10 years by 0.07% and 2.31%.

<u>Australia</u> – in 2003 there were about 75 buffalo farms in Australia with 16,400 on farm and about 35,000 undomesticated on aboriginal lands.

Live exports were 2800 at average live weight of 370 kg at an average price of $1.40 per kg.

Tenderbuff, a certified quality control buffalo meat, at an average carcase weight of 200 kg, returned to the seller $2.90 per kg. About 300 tenderbuff were marketed in Australia in 2003.

About 850 cull buffalo at an average carcase weight of 228 kg were marketed in 2003 at a average return of $1.10 per kg.

There was also buffalo smallgoods worth $40,000.

The total value of meat and livestock products ‘at the farm gate’ was $1.812m in 2003.

During the last few years there have been two dairy buffalo established in Australia. Milk products are domestically traded.

NT – In northern NT buffalo are regarded as more productive than beef cattle in the flood plain environment and also in other areas where they better utilise in the mid to late dry season low protein, high fibre roughage.

Since the mid 1990’s breeding of swamp type female buffalo with the imported River type has produced crossbreed progeny that grow 40% faster then 100% swamp type. Most such crossbreeds now in the Australian states have originated in the NT.
In 2003 there were 29 buffalo farms in the NT, holding about 14,570 buffalos.

Almost without exception live exports from Australia are transported from NT farms to Malaysia and Brunei.

Australian States – The main buffalo products traded in the states are value-added products, smallgoods and tenderbuff.

The number of buffalo farms and number of buffalo held in 2003 were respectively 13 and 640 for SA, 20 and 540 for Vic, 6 and 372 for NSW, 4 and 150 for WA, 1 and 70 for Qld and, 3 and 17 for Tasmania.

4.3 Industry Organisations

The Australian Buffalo Industry Council was formed in February 2000. The Council has representations from NT and all Australian states. An Annual General Meeting is held in February each year and by 2005 four states and the NT have hosted the meeting. Most states also have an independent state or territory Buffalo Industry Council.

Industry Plans of some of these Councils have distinct components that are not included in the RIRDC Plan. These include:

- Formation and operating industry Councils and holding of Annual General Meetings (eg National, NT, Vic)
- Actions to increase membership and services to the industry

- Ways of promoting products for local and export markets
- Raising wholesaler, retailer, and consumer of the quality assurance of Tenderbuff
- Ways of interacting with governments in the development and revising regulatory protocols and funding of services
- Developing databases of industry related information and web sites for public and private sector stakeholders
- Developing means of importing livestock and semen
- Identifying access to meat and milk processing establishments
- Negotiating with state and local governments for licensing of farming and processing works
- Developing of codes of practice for farming, transporting and processing.

4.4 Research and Development

A federal levy on buffalo slaughtered and live exports has been in place for over forty years. Funds collected for R&D were transferred and administered in the early 1990’s by the Meat Research Corporation. In the mid 1990’s the buffalo industry requested and the federal government agreed to transfer the R&D responsibilities to RIRDC.

After the RIRDC Board isolated buffalo R&D as a separate sub-program from the New Animal Product sub-program a RIRDC Buffalo Research and Development Advisory Committee was established in 2004, with appointments made for the period 1 July 2004 to 30 June 2007. The committee members are appointed under Section 89 of the PIERD Act 1989. The names of current committee members are given in Attachment A.

The levy for slaughtered buffalo is $10-33 per animal of which until 2003 $4-60 was collected for R&D and the levy for live exports is $5-33 per animal. The federal government provides matching funds up to 0.5% of the gross value of production as the levy funds are expended. In 2003 the government and industry agreed that for three years (1 May 2003 to 30 April 2006) the National Residue Survey component of the levy would be reduced to $1 per head and the R&D component increased to $8-60 per slaughtered animal. The annual value of the levies have been $30,358 in 2001/02, $37,292 in 2002/03 and $13,165 in 2003/04. The latter value reflects a downturn in live exports, a trend that has been partially reversed in 2004/05.

In addition to the above R&D support the NT government have since the 1960’s funded research at the Coastal Plains Research Station and subsidised the employment of a full-time Buffalo Development Official. Other R&D in meat, and more recently milk has occurred by investment of producers in most states in production, processing or marketing.

In developing the R&D Plan a review has been undertaken on international published articles, particularly the Proceedings of the 7th World Buffalo Congress held in the Philippines in October 2004. Australia has representation on the Standing Committee of the International Buffalo Federation which organised the Congress.

4.5 Resourcing and Managing the Program

The research program has been funded during the past two years by RIRDC 42%, Research Organisation 45% and Industry 13%. Of the RIRDC component 69% is from the industry levy and 31% from the federal government. The overall leverage from the federal government is therefore 13%.

The program is supervised by a Research Manager who operates within the RIRDC Corporate Plan (2003-2008) and is guided by outcomes of meetings and communication with industry organisations, owners/managers of enterprise along the value chain, investors, research agencies and researchers.

5. SWOT Analysis

The buffalo industry has strengths, weaknesses, opportunities and threats (Attachment 2A). This information is used as a basis for analysis and then the development of industries strategies for R&D (Attachment 2B). The analysis includes ‘using strengths to take advantage of opportunities; ‘using opportunities to overcome weaknesses’; and ‘minimising weaknesses to avoid threats’. The information and analysis are directed to factors that can be influenced by R&D and commercialisation through RIRDC. Other factors that affect the buffalo industry such as domestic and international meat prices, changes in the Australian dollar value, are not readily influenced by Australian R&D and therefore are not included specifically in the strategy development. The challenge is to improve productivity along the supply chain.

6. The R&D Plan for 2005-2010

The Plan is based on strategies identified in Attachment 2B. These strategies have been allocated to three Goals and it is acknowledged that there are interactions and inter-relationships between some of these strategies and goals.

The measure of success include project identification, implementation, analysis and reporting. Acceptance, adoption and commercialisation will be monitored and measured during and after the projects have been completed. Specific performance indicators are given for each strategy.

Strategies marked with * will have higher initial priority for investment.

Goal 1: Develop New Opportunities

Strategy	Major Targets	Performance Indicators
• Use R&D capability to further improve breeding and genetics*	• Increase AI reproduction rate and live weight gain to marketing	• Increase AI rates to 70% and rate of live weight gain by 15% over the next five years
• Expand production of meat and dairy products by R&D in meat and milk science	• Obtain initially additional information of the composition of carcasses of different buffalo pure and crossbreeds	• Analytical results to be included in the database prepared by Food Standards Australia New Zealand within two years
• Ensure regularity of supply by market research	• Identification by market development research new trading opportunities for live exports	• Two new markets serviced during the next four years
• To initiate and increase export of buffalo meat as game meat	• Identify by market development research trading opportunities for export of buffalo meat	• Two markets serviced by 2010

Goal 2: Increase Competitiveness

Strategy	Major Targets	Performance Indicators
• R&D in market research to increase the domestic consumption of buffalo meat and milk products*	• Increase share of the national consumption of meat and milk products	• Increased consumption of ‘tenderbuff’ by 25% and milk products by 50% over the next five years
• Develop more international liaison in R&D, and in the production and marketing systems	• Identify increased national and international linkages for researchers and investors	• Visits and attendance on average of two personnel at conferences during the period of the plan
• R&D in alternative buffalo husbandry systems	• Compare productivity with cattle, both on pasture and in feed-lots	• Initiate a comparison trial during the period of the Plan

Goal 3: Increase Capability, Communication and Adoption

Strategy	Major Targets	Performance Indicators
• Continued publication of the Buffalo Newsletter containing R&D information	• Publish national and international R&D plans, implementation and outputs	• At least four issues a year
• Increase industry communication within the Council of R&D information by more frequent teleconferencing	• Interaction of researchers and industry on progress of projects	• Three teleconferences per year
• Encourage investment in R&D to increase production and R&D capacity*	• More postgraduate personnel employed in R&D projects	• At least one post graduate input into the program during the next three years

7. Annual Operating Plan

Annual operating plans funds will be given to address some goals/strategies for 2006/07.

8. Recent Publications

A list of publication of recent RIRDC buffalo reports, and selected publications are given in Attachment 3.

9. Industry Contacts

Members of the Australian Buffalo Industry Council are given in Attachment 4.

Attachment 1

Members of the Buffalo Research and Development Advisory Committee

Douglas Robertson	NSW (Chairperson)
Mitch Humphries	Qld
Ian Padget	Vic
Neil Ross	NT
Michael Swart	NT
Jeff Davis	RIRDC
Peter McInnes	RIRDC

Attachment 2A

SWOT Information

Strengths

- Meat and milk products are healthy and nutritious
- Production can be adapted to many parts of Australia
- Buffalo utilise efficiently low protein, high roughage pastures
- Low level of diseases/parasites
- Some R&D capability and capacity
- Initiatives by many producers/marketers
- Government consultation strong in NT and federally
- Regular communication via industry newsletter

Weaknesses

- Insufficient meat quality control
- Lack of regular communication between producers
- Industry is small in size and scattered
- Lack of an improved genetic program
- Lack of sufficient success with artificial insemination
- Insufficient market development
- Insufficient international linkages
- Little if any interest of state governments
- Decreasing processing facilities

Opportunities

- Meat product developments
- Expansion of the buffalo dairy industry particularly in speciality cheeses
- Production and market R&D for ethnic groups in Australia and in Asia/America
- Taking advantage of Australia image of unique and organic production of buffalo products
- More local market development, international visits and attendance at conferences overseas
- Exporting of buffalo meat as game meat
- Increased exposure to tourism
- More government consultation
- Greater producer networking
- Strengthen commitments in the Australian Buffalo Industry Council

Threats

- Exotic/Endemic diseases
- Insufficient R&D funding
- Continuity of supply
- Reduction in R&D capacity
- Lack of more enthusiastic investors in the industry
- Meat substitution both in species and quality

Attachment 2B

SWOT Analysis – Strategy Development

Using strengths to take advantage of opportunities

- Use R&D capability to improve breeding and genetics
- Use initiatives of producers and marketers to expand tourism
- Expand production and scope of meat and dairy products
- Liaise with NT/federal governments to increase live exports
- Continue to publish industry newsletter further expanding international recipients
- Using the industry Newsletter to increase communication to producers and state governments

Using opportunities to overcome weaknesses

- Develop more international liaison in R&D production programs and market development
- Increase industry communication by more frequent teleconference within the Council
- Ensure regularity of supply – quantitatively and qualitatively
- Encourage game meat marketing to reduce reliance on live exports

Minimising weakness to avoid threats

- Ensure regularity of supply by market research
- Encourage investment in R&D capability and in all industry sectors – in R&D inputs and commercialising outputs

Attachment 3

Recent Reports/Articles

‘Australian Buffalo Industry R99/071 (1999) RIRDC Report 99/071

‘Increasing Buffalo Production Using Reproduction Technology’ (2000) RIRDC Report 00/165

‘Maximising Marketing Opportunities for Buffalo Products’ (2001) RIRDC Report 01/015

‘Production of Specialised Quality Meat Products from Water Buffalos: Tenderbuff’ (2004) Barry Lemcke. Proceedings of the 7th World Buffalo Congress pages 49-54

‘The Philippines – ACIAR Project Designed to Improve the Production Potential of Local Livestock (2004) K.R. Phillips. Proceedings of the 7th World Buffalo Congress pages 78-81

‘Development on Gene Mapping and its Potential Impact on Genetic Improvement in Water Buffalos’ (2004) L Iannuzi. Proceedings of the 7th World Buffalo Congress pages 181-184

‘The Development of a Milking Buffalo Industry in China’ Brian McGuirk

‘Responses to Hormonal Manipulations aimed at achieving higher Reproductive Efficiencies in Water Buffalos’ (2004) Pieto Sampaio Baruselli and Nelcio Antonio Tonizza de Carvalho. Proceedings of the 7th World Buffalo Congress pages 131-139

Attachment 4

Industry Contacts

Australian Buffalo Industry Council Members: Industry Contacts

STATE / TERRITORY REPRESENTATIVES

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