

The logo for AGMARDT, consisting of the letters 'AGMARDT' in a bold, black, sans-serif font, enclosed within a yellow rectangular box with a black border.

AGMARDT

THE AGRICULTURAL AND MARKETING
RESEARCH AND DEVELOPMENT TRUST

A wide-angle photograph of a rural landscape. The foreground is dominated by a lush green field of tall grass. In the middle ground, there are rolling green hills with scattered trees and a fence line. In the background, there are more rolling hills under a clear blue sky.

2008/2009
ANNUAL REPORT



ABOUT US

Our role in Agribusiness

AGMARDT's mission is fostering the development of leadership, capability and capacity in agribusiness to successfully meet the challenges of tomorrow's market.

To achieve our mission, AGMARDT invests in areas that meet our strategic goals of:

1. being a catalyst for the translation of international consumer, market, environmental and trade policy trends into potential opportunities,
2. creating a greater understanding of world class marketing, global supply chains, new products, new technologies, and business models within the agribusiness community,
3. fostering greater efficiency and sustainability in production, processing and distribution where recognised gaps exist,
4. enhancing the speed of innovation and its application throughout the production and marketing system,
5. improving linkages between science and agribusiness in the application of technology, and
6. fostering capability development in research towards advanced expertise.

Investing in the future of New Zealand Agribusiness

AGMARDT aims to foster and encourage research capability, leadership development and innovative thinking within the agricultural, horticultural and forestry sectors.

Each year, AGMARDT invests around \$2.5 million into developing world-class capacity and capability within the agribusiness sector to meet the increasing demands of our international markets.

To achieve this we invest in four areas within agribusiness:

- Leadership development programmes,
- Developing research expertise and capability within universities and Crown Research Institutes,
- Providing farmer groups with seed funding to develop and evaluate innovative ideas, and
- Funding international speakers and experts to New Zealand to speak at conferences and forums.

AGMARDT is independent

AGMARDT is an independent not-for-profit organisation with a proven track record of making targeted investments that contribute positively to the agricultural, horticultural and forestry sectors.

AGMARDT was established by the Government in 1987 with funds of \$32 million, which came from the wind-up of the British, Christmas Island and New Zealand Phosphate Commissions. AGMARDT'S funds currently stand at approximately \$55.3 million.

Over the last 22 years, AGMARDT has provided grants and funding to the agribusiness sector of more than \$55 million.



CONTENTS

Chairman's Report	02	Statement of Responsibility	18
General Manager's Report	04	Audit Report	19
Developing Research Capability	05	Summary Statement of Financial Performance	20
Leadership and Development Programmes	08	Summary Statement of Changes in Equity	21
Agribusiness Innovation Grants	10	Summary Statement of Financial Position	22
Conferences, Forums and Workshop Support	12	Summary Statement of Cash Flows	23
Grants 2008/2009	13	Summary of Accounting Policies	24
Finances	16	Directory	25

CHAIRMAN'S REPORT

The year proved to be an eventful and interesting one in which the Trust had some major successes and faced some challenging times due to the economic downturn.

The Trust's vision is for "international pre-eminence in the sustainable production of increasing higher value agri-food and fibre products". It is therefore critically important that we improve information flow between science and the practitioner.

The vital importance of agri-food and fibre sectors to New Zealand's biological and export dependent economy continues, as demonstrated by the contribution made to GDP (21%) and total exports (64%) with more than 90% of the production exported.

However over the last ten years the competitive advantage of New Zealand's agri-food and fibre sectors has declined. This fall has been associated with increased costs of agricultural inputs and the challenges that confront farming in terms of compliance issues relating to environmental sustainability, animal welfare, food safety, an unprecedented increase in land prices, the high volatility of our exchange rate, and a downward trend in commodity prices.

Without significant growth in productivity, New Zealand faces a continuing fall in the standard of living, the potential for capital and intellectual flight offshore, and a vicious downward economic spiral. To address these issues, AGMARDT stimulates and challenges conventional thinking and explores opportunities arising from developments in technology within the agri-food and fibre sectors, and the sustainable management of associated natural resources.

This year AGMARDT supported the publication of *Future Food Farming in New Zealand Inc. Meeting tomorrow's markets*, a forum at Massey University to discuss the publication's findings, and a wide range of visiting international speakers in an effort to foster the need to think outside the square and evaluate:

- The opportunities that new and emerging technologies present for adding value to agri-food and fibre products in their production, processing and marketing;

- Changes in consumer requirements for high value agri-food and fibre products;
- Global challenges and opportunities, both current and future, on the sustainability and consumer acceptance of our production, processing and marketing systems; and
- Inconsistencies in the alignment of existing policies, which hinder innovation, growth and development in the productivity of our agri-food and fibre sectors.

It is the Trust's view that significant improvements in productivity of the primary sector must be supported by a more coordinated and focused approach to the effective linking of education, research, and industry, which in turn needs to be linked by a clear government policy. This year the Trust made submissions to the Government on this and related matters.

Today many new factors are presenting challenges to agriculture that places it in a significantly different context to that of the past. There is a new level of complexity confronting the agribusiness sectors in New Zealand driven by our international markets through increasing consumer demands on food safety, animal welfare and environmental sustainability (carbon and water foot printing).

Environmental degradation and resource scarcity raises questions about the long term sustainability of our current production systems. The lack of long term strategic research often leaves New Zealand producers struggling to meet the requirements of international markets and the expectation of our consumers.

Over a number of years the Trust has supported Doctoral Scholars, Post Doctorate Fellows and various projects on developing the capability and technology for the sustainable management of soils. A recent study supported by AGMARDT indicates that in practice much of the Hawkes Bay cropping systems are not sustainable in their current form. Further, scientists and practitioners appear to be working from different knowledge systems, one based on their own management experience and the other on the findings from reductionist research projects. This highlights the need to improve information flow between the scientist and the practitioner.

In yet another attempt at connection, AGMARDT sponsored the Agribusiness Breakfast and Regional Climate Change Seminars, which discussed the impact of changing climatic conditions in New Zealand and also Australia. This illustrates the opportunities to engage more widely on Trans-Tasman issues relating to agriculture that includes farmers, rural professionals, educationalists and researchers. In addition to this we recently supported Marie McNicholas from NZX Rural Newsroom to attend and report on the climate change conference in Copenhagen.

In a world of increasing specialisation the dangers of increased fragmentation, narrowness of vision and disconnection are becoming increasingly more common. However the challenges facing agriculture are more global and holistic in concept and it is becoming increasingly apparent the very inter-connectiveness of these issues will continue to force creative rethinking of the needs of agriculture.

Product life cycles continue to shorten driven by consumer needs, with the result that speed to market is become increasingly important. In fact New Zealand's competitive advantage in agri-food and fibre production may in the near future be more or totally reliant on our ability to access and apply technology faster than our competitors.

I would like to thank the Trustees for their guidance and enthusiasm over the year.

On behalf of the Trustees and Management I have great pleasure in presenting our 2008/09 Annual Report.

Bill Kain
Chairman of Trustees



GENERAL MANAGER'S REPORT

A challenging economic environment and global recession is a stark reminder of how quickly international markets for New Zealand's agri-food and fibre products can change within the space of a year.

To equip New Zealand agribusiness to meet these types of challenges and explore future opportunities within the agricultural, horticultural and forestry sectors, AGMARDT funds a range of programmes for the purposes of fostering research capability, leadership development and innovative thinking within the agribusiness sector.

AGMARDT continues to target areas where knowledge and skill gaps exist within the science and farming communities. Our independent position and ability to operate across different sectors are key strengths of AGMARDT and underpins our unique position within agribusiness.

I am pleased to report that AGMARDT made 47 grants worth \$2.9 million for the year ending June 2009, which compares with \$1.6 million in the previous year.

AGMARDT invested \$1.8 million into developing research expertise and capability within New Zealand's science community during the year. A highlight of this year's programme was the appointment of Professor Tony Parsons as AGMARDT first part-funded Chair in Carbon Cycling in Pastoral Farming Systems. We see this position as building capability in research and education within universities in a strategically important area to New Zealand's pastoral sector.

Developing leadership capability continues to be an important area for AGMARDT. We recognise the need to support programmes that encourage and develop future industry leaders within rural communities and agribusiness. During the year we funded five leadership programmes, and three AGMARDT awards recognising excellence within selected areas of agribusiness.

This year we awarded fifteen Agribusiness Innovation Grants across a broad range of projects and sectors. The aim of this programme is to provide seed funding for groups to develop new and innovative products, processes and services to a point where other funders or commercial interests can take over. In making grants,

consideration is given to how the project will benefit the sector in question and the wider agribusiness community.

AGMARDT contributions enabled conference organisers from 12 different sector groups to bring 13 international speakers to New Zealand over the course of the year. Providing support to target international speakers that can provide timely advice and information that may not be readily available in New Zealand continues to be well received by sector groups.

AGMARDT's grant programmes and some of the year's highlights are included in the following sections of this Annual Report for the year under review.

Looking Ahead

In my view AGMARDT has had a very successful year. The year ahead may prove to be more challenging as the Trustees attempt to maintain and increase AGMARDT's real capital levels (inflation adjusted initial capital) following the poor returns from the financial markets. Whilst it is pleasing to see the financial markets recover some of the ground lost since March 2009, we have needed to review our grant programmes for the next financial year which has included the suspension of some of our programmes. This decision has not been taken lightly and will be reviewed once our real capital levels are suitably restored.

Looking forward we will continue to fund high quality and relevant programmes that make a positive contribution to our beneficiaries within the agribusiness sector. Establishing better linkages across research, education and the industry will be the key focus for AGMARDT in the future and is absolutely essential if New Zealand is to maintain and grow its competitive advantage.

I wish to thank all the individuals across the sectors, university and Crown Research Institutes we have worked with over the past year for their contribution and commitment to the agribusiness community.

Stephen Macaulay
General Manager



DEVELOPING RESEARCH EXPERTISE AND CAPABILITY

During the year, AGMARDT invested \$1,806,970 to build research capability and capacity within New Zealand's science community for the purpose of underpinning the agriculture, horticulture and forestry sectors.

Chair in Carbon Cycling in Pastoral Farming Systems

This year, our first part funded Chair was awarded to Tony Parsons of AgResearch. This position will be hosted at Massey University.

Visiting Fellowship

AGMARDT's visiting fellowship programme supports visits by international experts, who have recognised global expertise in selected areas of relevance, to come to New Zealand and provide advice, information and direction to researchers, farmers and industry groups. Visiting fellows usually come to New Zealand for two to three short visits over 12 to 18 months to look at a specific area of strategic interest to the agribusiness sectors.

During the year AGMARDT funded three visiting fellowships. Our visiting fellows provided advice on greenhouse gas emissions from agriculture and horticulture sectors, planning processes for a new mastitis control extension package, and implementation of the InCalf assessment research project.

Post-Doctoral Fellowship

AGMARDT offered seven post-doctoral fellowships in the 2008/09 year. Post-doctoral fellowships continue to represent a significant investment by AGMARDT with around 50 per cent of our funding dedicated to this area.

During the year post-doctoral fellowships were awarded in the following topics:

- manipulating lipid accumulation and packaging in forages,
- epigenetic regulation of milk protein,
- exploring molecular mechanisms of wood dimensional stability in pine,
- investigating parasitoid ecophysiology in weevil,
- rhizoctonia diseases of potato,
- decoding secondary metabolite biosynthesis by ryegrass endophytes, and
- soil water repellency consequences of soil degradation.

Doctoral Scholarships

This year a doctoral scholarship was awarded to Amber Parker at Lincoln University for 'Determination of agro-climatic models to predict the precocity of grapevine phenology'.

Visiting Fellow Professor Gareth Edwards-Jones

Under the AGMARDT visiting fellowship programme, Professor Gareth Edwards-Jones of Bangor University, Wales, UK, has made three visits to New Zealand to work with growers, industry groups, scientists and government agencies on issues related to greenhouse gas emissions from agriculture and horticulture sectors. He has focused on life cycle assessment and carbon footprinting.

Hosted by Hort Research (now Plant and Food Research), Gareth's visits have provided an international perspective of the challenges facing New Zealand given the distance from our markets, and how our sectors can improve their understanding of carbon footprinting and its potential impact.

Gareth believes that scientific understanding of greenhouse gas emissions from food chains is in its infancy. We know very little about how carbon moves in and out of agricultural systems, and even less about how this varies between systems, locations and years, he says. Because of these uncertainties Gareth notes that it is very difficult to develop carbon labels for food items.



Professor Gareth Edwards-Jones

Some commercial organisations may be tempted to use these scientific uncertainties to their advantage. It is only through international exchange of ideas and methods that we can ensure that best practice is shared, and through this develop practical certification methods for carbon labelling.

Chair in Carbon Cycling in Pastoral Farming Systems



Professor Tony Parsons

We are pleased to announce the appointment of Professor Tony Parsons as AGMARDT's first Chair in Carbon Cycling in Pastoral Farming Systems. The position is part funded over five years and will be hosted at Massey University. The Trustees view this appointment as an important mechanism for building capability in research and education within universities in key areas of strategic importance to New Zealand's primary sector.

The Chair will help, encourage, mentor and provide scientific leadership to students and postgraduate researchers by increasing the understanding of biological processes and the management on soil quality, forage and animal production of New Zealand's pastoral-based farming systems.

The development and transfer of research findings and associated information on carbon cycling within pastoral farming systems to farmers, universities and Crown Research Institutes will be a key role of the position.

AGMARDT acknowledges the support of Professor Tony Parsons' employer AgResearch in making this part funded position possible. We also wish to thank Massey University in hosting Professor Parsons.

Investing in young researchers making a difference

Mark Robinson

Mark Robinson received an AGMARDT Doctoral Scholarship in 2007. The title of his thesis is "Investigating the immune response of red deer to Johne's disease".

Johne's disease, also known as paratuberculosis, causes diarrhoea, weight loss and death in ruminants. In New Zealand, losses between \$30 million and \$200 million per annum are attributed to Johne's, caused by *Mycobacterium avium* subspecies *paratuberculosis*. This is related to *Mycobacterium bovis* - the cause of bovine tuberculosis.

Mark has been studying the immune responses in red deer to both infection and vaccination and how these change over time.

He has been using various immunological techniques to create immune profiles that can distinguish healthy, diseased and vaccinated animals and is identifying the tissue samples and sampling times that will result in the most reliable test results. It is hoped this approach

Mark Robinson



will identify immune profiles that characterise animals exhibiting susceptible or resistant status.

Mark is also studying the hypothesised role that regulatory T cells play in disease progression and development of clinical disease. The roles of different immune cells in controlling further spread of disease and why this control breaks down in some animals are also being investigated.

Johne's disease affects many countries and Mark's research is making a significant contribution to better understand and control the disease.

The work is supervised by Professor Frank Griffin and Dr Rory O'Brien in the Department of Microbiology and Immunology, University of Otago.

Natalie Parlane

Natalie Parlane received an AGMARDT Doctoral Scholarship in 2007 for her thesis: "To produce bionanoparticles (BNPs) for delivery of biocontrol agents to possums, and vaccines against bovine tuberculosis (Tb)".

Bionanoparticles (BNPs) are polyhydroxyalkanoate (PHA) beads formed inside some bacteria as a reserve energy source. The small size of the BNPs makes them suitable for uptake by cells to initiate an immune response.

The overall goals of Natalie's research are:

- To engineer bacteria to use the PHA biosynthesis pathway for display of specific mycobacterial antigens at the surface of BNPs; and
- To transfer this technology to produce vaccines for animal diseases, which have no effective vaccine.

Natalie engineered bacteria (*E.coli*) to produce PHA beads displaying a mycobacterium fusion protein known to be antigenic. The beads were injected into mice and resulted in a weak immune response. Further work produced PHA beads with three different recombinant

Natalie Parlane



proteins, of which one gave significant immune responses when used with the adjuvant Emulsigen.

A cattle tuberculosis vaccine trial is currently underway involving BNP with or without adjuvant. Natalie is also exploring an alternative to *E.coli* as the host for BNP production because *E.coli* produces an endotoxin, which can be pathogenic.

Her research, being carried out at the Hopkirk Institute, is relevant to vaccine development for all species and may well become an important technology in the future.

Natalie's supervisors are Professor Bernd Rehm (Massey University), Dr Neil Wedlock (AgResearch) and Dr Bryce Buddle (AgResearch).



Don Lawson presenting during the Agribusiness Breakfast. Other presenters include (left to right, Bill Kain, Doug Avery, Hugh Ritchie)

LEADERSHIP DEVELOPMENT PROGRAMMES

AGMARDT invested \$233,625 in Leadership Development Programmes for the 2008/09 year.

Leadership Development Programmes are important for encouraging and developing leadership capability within the agribusiness sector. During the year we invested in five programmes. We also have ongoing commitments to the FAME programme, Waipaoa Station Farm Cadet Training Trust, as well as governance training for the Dairy Women's Network. Leadership programmes will continue to be a major focus for AGMARDT in the future.

National Bank Young Farmer Contest

AGMARDT is a strong supporter of the National Bank Young Farmer Contest, and the Trustees congratulate Tim O'Sullivan on winning the 2009 contest.

The contest continues to provide an opportunity to develop the skills and knowledge of all contestants at a regional and national level. We also believe the contest is important in developing the leadership and organisational skills of those involved in organising the event.



Bill Kain (right) congratulating Tim O'Sullivan the 2009 Young Farmer of the Year

A highlight of the grand final is the AGMARDT Market Innovation Challenge, where the winner receives a career development package worth \$28,000. Richard Coplan won this year's award with his project on 'Meating the Market - A model for coordinating high yield genetics effectively between store producers and lamb finishers'.

As well as the grand final prize, AGMARDT supplies regional prizes that enable finalists to research their topics for the Market Innovation Challenge project.

AGMARDT Agribusiness Breakfast and Climate Change Seminars

As part of our involvement in the National Bank Young Farmer Contest, we sponsor the AGMARDT Agribusiness Breakfast. This year's focus was on adapting farm management practices to meet the challenges of changing climatic conditions in Australia and New Zealand. Over 120 people listened to presentations by Don Lawson from Victoria, Australia, Doug Avery of Marlborough and Hugh Ritchie from Hawke's Bay.

AGMARDT also held seminars in Gore, Lincoln University, Wellington and Hastings leading up to Agribusiness Breakfast, which attracted a total of 170 participants.

Federated Farmers of New Zealand

AGMARDT supported Federated Farmers in running two leadership programmes, 'Getting your feet wet' and 'Shining under the spotlight!'. Both programmes are aimed at developing leadership capability within the rural community and to encourage and develop leadership capability by giving people the skills and confidence to become active participants in the agricultural sector.

Young Horticulturist of the Year

We continue to be a major supporter of the Young Horticulturist of the Year competition. We provide prizes for the AGMARDT Market Innovation Challenge worth \$24,000. For the first time, AGMARDT also provided prizes for the seven sector competition winners in recognition of their efforts and to help them to complete their research project for the AGMARDT Market Innovation Challenge.

Congratulations to the 2008 winner of the Young Horticulturist of the Year Competition, Jason Greene, a sales manager for Rainbow Trees in Auckland. Jason represented the nursery and garden sector.



Jason Greene, Winner of the 2008 Young Horticulturist of the Year and the AGMARDT Market Innovation Challenge

FAME

AGMARDT supported the third FAME (Food and Agribusiness Market Experience) programme during the year. We also provided part-funded scholarships to Mark Bayley, Gerry Glover, Tony Howey and Frank van Rijen to attend FAME3.

We are also pleased to see the commitment of current and past participants of FAME. We also acknowledge the good work of the FAME Alumni in providing networking events for FAME participants.



Jon Morgan and Bill Kain

AGMARDT Awards

We sponsor three AGMARDT Awards recognising excellence within areas of agribusiness:

- The AGMARDT Agribusiness Award, coordinated through the New Zealand Guild of Agricultural Journalists and Communicators, recognises high quality information and effective analysis of national, global and other external agribusiness factors. Jon Morgan of the Dominion Post received this award for 2009.
- The AGMARDT Technology Transfer Award is organised through the New Zealand Institute of Agricultural and Horticultural Science Inc and recognises achievement and excellence in technology transfer in agriculture. The 2009 award was won by Dick Lucas for his work in promoting pasture legumes suitable for droughty, low phosphate status acidic soils throughout New Zealand
- The AGMARDT NZSAP Young Scientist of the Year Award is run by the New Zealand Society of Animal Production Inc. This year's award went to Alice Allsop of Landcare Research. This is the first time we have been involved with this award.



Alice Allsop,
Winner of the
AGMARDT NZSAP
Young Scientist of
the Year

AGRIBUSINESS INNOVATION GRANTS

During the year, AGMARDT awarded 15 Agribusiness Innovation Grants totalling \$708,876.

Agribusiness Innovation Grants provide seed funding for farmer-based groups to develop and evaluate innovative ideas. Our grants allow recipients to develop their projects to a stage where they can attract funding for further development or commercialisation.

Agribusiness Innovation Grants are targeted to areas aligned with AGMARDT's strategic goals and that promote and encourage the development of innovative products and processes that benefit the agribusiness sector.

Agribusiness Innovation Grants have been in place since 1996.

Where we can, AGMARDT will develop arrangements with other funders with similarly aligned interests. In today's environment this is crucial for ensuring sufficient contributions are made toward projects as well as securing succession funding once AGMARDT's support ends.

In 2008/09 we invested in fifteen projects covering a diverse range of areas and stakeholder groups. A full list of funded projects is on page 14.

THE NZ DRYLAND FORESTS INITIATIVE (NZDFI)

Breeding select eucalypts for naturally durable timbers.

At a time when organic wine and fruit growers are looking beyond CCA-treated timber posts, and there is increased pressure on traditional sources of imported hardwoods, an alternative source of timber for posts is needed.

CCA-treated posts are difficult to dispose of and there is considerable negative publicity about the potential to leach arsenic, contaminating groundwater. NZDFI decided that an opportunity existed for New Zealand to develop fully eco-certified eucalypt plantations to produce vineyard posts and high value hardwoods.

The project aimed to establish breeding populations for a range of ground durable eucalypt species suited to dryland areas of New Zealand. AGMARDT funding ensured the project could begin planting the first base breeding population of *Eucalyptus bosistoana* in spring 2009.

The potential benefit of the project to Marlborough not only extends to producing an alternative source of timber posts for vineyards and sustainable hardwoods, but also provides additional benefits to the region's drought-prone and eroding pastoral land.

The NZDFI project to breed select eucalypts for naturally durable timbers represents a funding partnership of AGMARDT's, regional government, research and educational agencies and commercial businesses.



THE LINCOLN UNIVERSITY + COOPWORTH SOCIETY 'FUSSY SHEEP' CONSORTIUM

- Identification and multiplication of sheep with weak dietary preferences.

Dietary preferences of our domestic herbivores (sheep, cattle and goats) are well recognised. In general they prefer the more nutritious components of pasture, the green leaf rather than the stem, clovers rather than grasses. Although the selection of these components is in the short-term interests of animal production, the longer-term effect is to deplete the 'good' components and increase the proportion of the 'poor' components in the subsequent diet. Without forcing animals to eat the less preferred components at a cost to nutrient intake or mechanically removing them, it is not possible to maintain a pasture with the desirable balance of plant species and plant parts.

Two strategies are evolving to solve this paradox. The first is to reduce the difference in partial preference between dietary components. For example, research to date shows sheep have a lower preference for clover when offered with grass of high sugar content. The second approach is to identify and exploit animals that show less strong dietary preferences and this is the basis of the current research project.

Under pen-feeding conditions sheep with strong ("more-fussy") and weak ("less-fussy") dietary preferences co-exist within the same sheep flock. The differences are consistent on different diets, between siblings and mother/offspring relationships. The aims of this project are to expand the above observations to:

- determine whether we can exploit this difference in dietary preference by demonstrating that grazing by sheep with weak dietary preferences leads to improved and more sustained pasture quality and thus higher long-term animal performance;
- determine the relative contribution of heredity and learning to differences in dietary preferences;
- to investigate other means of identifying strength of dietary preferences so sheep with weak dietary preferences can be available to the wider sheep industry.

Dr Alastair Nicol and Professor Grant Edwards of Lincoln University are carrying out this work with the support of the Coopworth Society.

SOILS INITIATIVE – Farmer practice to enhance soil quality.

The soils science initiative was established by AGMARDT in 2007 to look at the potential role of soil in capturing and retaining carbon to mitigate climate change and increase sustainable production.

During the year we invested in a project aimed at delivering a process that links farmer observations and practices in enhancing soil quality with science. The aim is to provide an understanding of the underlying processes and the connection with effective practice. The case study used was based on Hawkes Bay cropping and horticulture in the Heretaunga Plains.

The project was in two parts: interviews with Hawkes Bay cropping farmers to elicit their observations and practices to enhance soil quality; and a literature review of soil carbon under pasture, horticulture and arable land uses.

Farmer participants appeared to have a broad or system-like understanding of soil quality. Even so, there was a keen desire for information and guidance on growing soils, on understanding and managing the biological or living component of the soil, and on soil carbon. Furthermore,

there is a need to evaluate and understand the impacts of various farming options (e.g. cover crop species) in various conditions (e.g. soil types) on soils and cropping, and the viability of farm businesses. Farmer observations, practices and measurements provide an invaluable pool of knowledge not only relevant to, and shaped by, the local environment and farmer experiences and needs, but perhaps complementary to, as well as being a resource for, more formal and scientific knowledge.

The farmer knowledge was complemented by the literature review that described the range of levels of soil carbon under varying land use, the processes of growth and the management practices available to increase soil C.

Researching, understanding and using farmer knowledge to enhance soil quality will require greater synergism between science and farming, and the collation and presentation of results in an accessible and useable form.

We wish to acknowledge Max Purnell's commitment to the soils initiative.



Making Irrigation Pay Workshop in Wairarapa

CONFERENCE , FORUMS AND WORKSHOP SUPPORT

During the 2008/09 year, AGMARDT provided \$63,013 in conference support that brought 13 international speakers to New Zealand. The Trust also provided \$4,830 for two industry forums.

AGMARDT provides travel assistance for international keynote speakers and experts to come to New Zealand to speak at conferences and forums to enhance stakeholders' understanding of issues impacting upon the agribusiness sector. The aim of these visits is to transfer knowledge and international expertise and to create value for our agri-food and fibre products.

Some of the conference speakers funded by AGMARDT during the year include:



Professor Robert Neilsen of Purdue University, Indiana, US, was a keynote speaker at the Maize Conference organised by the Foundation for Arable Research. Over the two days of the conference Professor Neilsen discussed the challenges and opportunities of growing maize in the US, fungicide use, genetic modification of crops and the latest maize production statistics in the US.



Professor David Montgomery of University of Washington, USA, was a keynote speaker at Organics Aotearoa New Zealand (OANZ) Organic Sector Conference, held at the University of Waikato. The conference focused on the innovations in organic and biodynamic farming, marketing and organisations.

A professor of geomorphology in the university's Department of Earth and Space Sciences, Professor Montgomery spoke at the conference on global food security and the risks to society when the quality of soil declines. His most recent book – "Dirt: The Erosion of Civilizations" – traces the history of agriculture, showing what happens to civilizations when soil becomes exhausted.



Professor Keith Goulding of Rothamsted Research, Harpenden, UK, spoke at the 22nd Annual Fertilizer & Lime Research Centre Workshop. Professor Goulding's paper was on the 'Potential for soil carbon sequestration, but with a full greenhouse gas budget'.

As part of the paper he notes that the worldwide trend of clearing grassland, forest and draining wetlands is releasing carbon to the atmosphere and worsening climate change, and that mitigation would be best served by slowing these trends, rather than attempting to quantify small and often questionable increases in soil carbon through changes in agricultural practices.

Making Irrigation Pay Workshops

Irrigation New Zealand held workshops in Canterbury, Wairarapa and Hawkes Bay to promote best practice and encourage sustainable and cost effective use of water in farming systems. The workshops provided a platform for speakers and farmers to discuss the importance of good irrigation design and scheduling, and what can be done to improve irrigation management systems. The workshops attracted 180 attendees across the three regions.

GRANTS 2008/09

Grants awarded for 2008/09.

PROFESSORIAL RESEARCH FELLOW

- **Professor Tony Parsons (AgResearch) \$253,125:** (Grant 960) AGMARDT part funded Chair in Carbon Cycling in Pastoral Farming Systems over 5 years. Host facility: Massey University

VISITING FELLOWSHIP

- **Professor Gareth Edward-Jones: \$28,575** (Grant 970) School of the Environment & Natural Resources, Bangor University, Wales. Area: Working and discussing issues related to greenhouse gas emissions from agriculture and horticulture sectors with growers and scientists. Host: Declan Graham, Hort Research.
- **Dr Theo Lam and Dr Rod Dyson: \$12,320** (Grant 971) GD Animal Health Management Service, Deventer, Netherlands; and Dairy Focus, Melbourne, Australia. Area: Planning processes for the new mastitis control and milk quality improvement extension package. Host: Dr Jane Lacy-Hulbert, National Mastitis Advisory Committee.
- **Dr John Morton: \$13,950** (Grant 972) School of Veterinary Science, University of Queensland. Area: Developing and implementing of the InCalf assessment research project. Host: Dr Scott McDougall, Animal Health Centre.

POSTDOCTORAL FELLOWSHIPS

(Funding over 2 years)

- **Dr Marissa Roland: \$176,000** (Grant 990) Manipulating lipid accumulation and packaging in forages, AgResearch Limited. Mentor: Dr Nick Roberts.
- **Dr Kara Swanson: \$176,000** (Grant 991) Epigenetic regulation of milk protein α 1 casein in the dairy cow, AgResearch Limited. Mentor: Dr Kuljeet Singh.
- **Dr Christina Weinberg: \$176,000** (Grant 992) Exploration of the molecular mechanisms of wood dimensional stability in pine, the

New Zealand Forest Research Institute Limited.
Mentor: Dr Armin Wagner

- **Dr Jessica Dohmen-Vereijssen: \$176,000** (Grant 993) Investigation into weevil pasture pest and parasitoid ecophysiology for improved management, Lincoln University. Mentor: Dr Stephen Goldson.
- **Dr Sanjeev Vencu Raikar: \$176,000** (Grant 994) Rhizoctonia diseases of potato in New Zealand, the New Zealand Institute for Plant and Food Research Limited. Mentor: Dr Jeanne Jacobs.
- **Dr Tet Verne Lee: \$176,000** (Grant 995) Decoding secondary metabolite biosynthesis by ryegrass endophytes, University of Auckland. Mentor: Dr Shaun Lott.
- **Dr John Carter: \$176,000** (Grant 996) Soil water repellency – economic and environmental consequences of an emerging issue of soil degradation, the New Zealand Institute for Plant and Food Research Limited. Mentor: Dr Markus Deurer.
- **One year postdoctoral fellowship extensions: \$176,000**
Dr Carolyn Mander (Grant 20790) and
Dr Sathiyamoorthy Meiyalaghan (Grant 20791)

DOCTORAL SCHOLARSHIPS

- **Amber Parker: \$91,000 over 3 years** (Grant 981) Determination of agro-climatic models to predict the precocity of grapevine phenology, Lincoln University.

LEADERSHIP DEVELOPMENT

- **The National Bank Young Farmer Contest: \$46,250** (Grant 950) Includes a career development package for the winner of the Market Innovation Challenge.
- **Young Horticulturist of the Year Contest: \$27,000** (Grant 951) Support for the AGMARDT Market Innovation Project and prizes for sector winners.
- **FAME Scholarships: \$56,250** (Grant 952) Awarding part-funded FAME Scholarships to Mark Bayley, Gerry Glover, Tony Howey and Frank van Rijen.

- **Federated Farmers of New Zealand: \$59,325**
(Grant 953) Leadership Development Programme.
- **The New Zealand Federation of Young Farmers: \$44,800**
(Grant 954) Leadership Development Programme.

SOILS SCIENCE INITIATIVE

- **Soils First Farmers \$161,318**
(20735B) Farmer Practice to Enhance Soil Quality
(Development of soil quality, with a focus on Carbon under primary production land use)

AGRIBUSINESS INNOVATION GRANTS

- **The Veterinary Centre: \$30,000**
(Grant 920) An assessment of the copper status of grazing dairy cows.
- **PERKINZ Limited: \$50,000**
(Grant 921) Research and analysis of biomechanical data from shearers using PERKINZ shearing cradle.
- **Clover Root Weevil Biocontrol Team (AgResearch): \$30,000**
(Grant 922) Irish wasp dissemination.
- **Farmers Concerned about Sustainable Parasite Management Group: \$120,000**
(Grant 923) Sustainable parasite management – evaluation of best practice.
- **New Zealand Calla Council Inc: \$32,154**
(Grant 924) Quality assurance of New Zealand calla tubers.
- **New Zealand Dryland Forests Initiative: \$80,000**
(Grant 925) Breeding select eucalypts for naturally-durable timbers.
- **Buller Community Development Company Ltd: \$49,434**
(Grant 926) Nodulised stack dust as a lime and potassium source for grapes.
- **Winchmore Soil Profile Carbon Group: \$28,913**
(Grant 927) Impacts of long-term irrigation and fertiliser on pasture soil carbon.
- **NZ Merino Sixteen to Eighteen Micron Wool Innovation Group: \$80,000**
(Grant 928) Innovation in sixteen to eighteen micron wool – applying the model for success.
- **The Lincoln University – Coopworth Society ‘Fussy Sheep’ Consortium: \$30,000**
(Grant 929) Identification and multiplication of sheep with weak dietary preferences.
- **NZ Society of Animal Production (Inc): \$30,000**
(Grant 930) Funding the publication ‘Mineral Requirements and Managing Deficiencies in Grazing Ruminants’.
- **Fresh Vegetable Product Group, Horticulture New Zealand: \$90,000**
(Grant 931) Rapid diagnosis of insecticide resistance in aphids.
- **Waihi College Farm Unit Research: \$20,000**
(Grant 932) Investigate levels of carbon in soils under different land use systems and to investigate causes of low dry matter in Hayward kiwifruit.
- **Agvance Marketing Limited: \$30,000**
(Grant 933) The impact of molybdenum on the efficacy of organic and inorganic copper supplements in New Zealand dairy cattle.
- **Mid North Island Beef Producers Group: \$8,375**
(Grant 934) Study USDA beef twinning programme during calving.

CONFERENCE SUPPORT

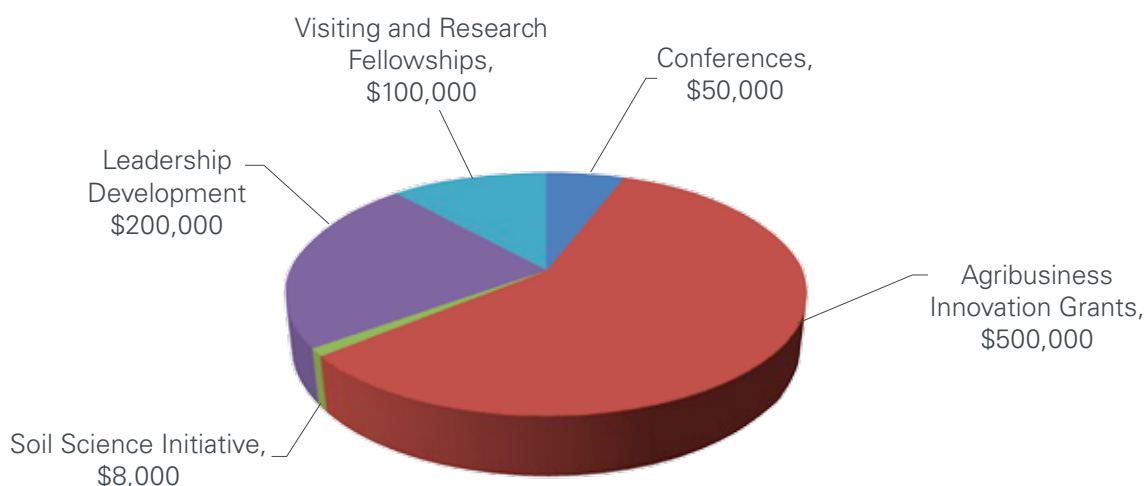
- **New Zealand Institute of Agricultural & Horticultural Science Convention: \$2,250**
(Grant 901) Sponsorship of the Biofuels Forum.
- **Professor Bruce Weir: \$4,898**
(Grant 902) Keynote speaker at the 4th New Zealand Molecular Mapping Workshop, and for the Summer Institute in Statistical Genetics Conference.
- **Steve Mills and Dale Miller: \$6,654**
(Grant 903) Keynote speakers at the 2008 Irrigation New Zealand Conference.
- **Dr Hugh Pritchard: \$3,950**
(Grant 904) Keynote speaker at the 2008 Seeds for Future Symposium.
- **Professor Keith Goulding: \$3,375**
(Grant 905) Keynote speaker at the Fertilizer & Lime Research Centre’s 2009 Workshop.
- **Professor Robert Nielson: \$7,000**
(Grant 906) Keynote speaker at the Foundation for Arable Research’s Maize Conference 2009.

- **Professor Blair McClinton: \$3,855**
(Grant 907) Keynote speaker at the New Zealand Soil Carbon Conference.
- **Dennis Avery: \$16,875**
(Grant 908) Keynote speaker and support for the 2009 ASB Agribusiness Conference.
- **Mark Bryden: \$3,416**
(Grant 909) Keynote speaker at The New Zealand Merino Company's Woolstock Conference.
- **Professor David Montgomery: \$4,612**
(Grant 910) Keynote speaker at the Organics Aotearoa New Zealand National Organic Conference.
- **Professor Jeff Olsen: \$2,860**
(Grant 911) Keynote speaker at the New Zealand Tree Crops Association's 2010 Tree Crops Conference.
- **John Stanley: \$1,518**
(Grant 912) Keynote speaker at the Nursery & Garden Industry Association's 2009 Annual Conference.
- **Irrigation New Zealand: \$2,580**
(Grant 913) Sponsor of the 'Making Irrigation Pay' workshops.
- **Dr Aneesh Kumar: \$4,000**
(Grant 914) Speaker at the 5th International Bovine TB Conference.

Summary of Grants made in 2007/09	Grant amount	% of grants programme
Professional Research Fellow	\$253,125	8.5%
Visiting Fellowships	\$54,845	1.8%
Post-Doctoral Fellowships	\$1,408,000	47.3%
Doctoral Scholarships	\$91,000	3.1%
Leadership and Capability Development	\$233,625	7.8%
Soil Science Initiative	\$161,318	8.4%
Agribusiness Innovation Grants	\$708,876	23.8%
Conference and Forum Support	\$67,843	2.3%
Total	\$2,978,632	100%

*This includes grants awarded during the year. Any adjustments to these may not necessarily be reflected in this table.

2009/2010 Budget



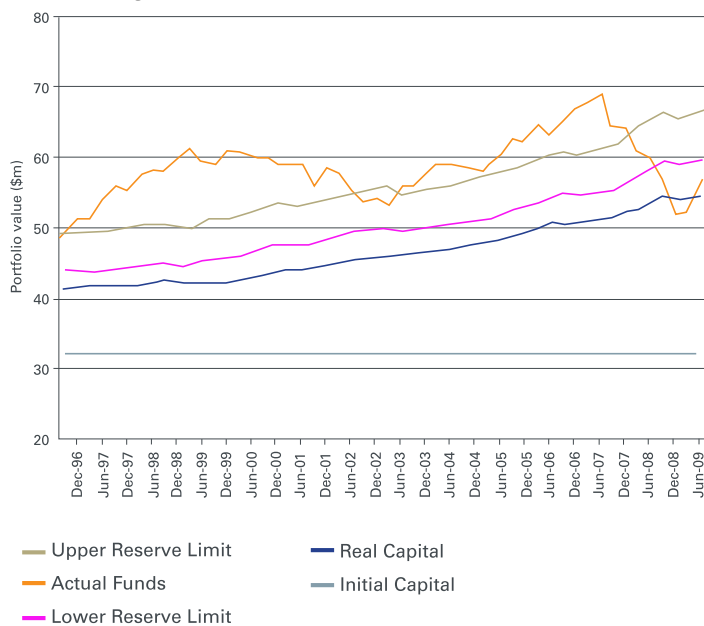
FINANCES

Fund Performance

AGMARDT's funds emerged from an exceptionally difficult period for the global economy returning -4.6 per cent against a benchmark of -6.8 per cent during the financial year ending 30 June 2009. This return reflects the substantial declines and distress in world financial markets during the second half of 2008.

The resulting reduction in the fund's value, demonstrated in the following Chart, shows our capital and reserves as of 30 June 2009 totalled \$55.3m (includes AGMARDT's future funding commitments), which is slightly above the Real Capital of \$54.6m (\$32m plus inflation). However, the fund's value remained below the lower reserving limit of \$59.5m, which is an indicative measure for Trustees to review and possibly reduce future granting programmes.

Reserving Chart



Global equity markets hit a low in March 2009 after experiencing significant declines in both October and November 2008. These markets then rebounded strongly from March to June 2009, helping the fund recover some of its earlier losses.

Nevertheless, our exposure to growth assets did detract from AGMARDT's performance for the year ending June 2009 with global equities returning -27 per cent and global listed real estate securities -37.7 per cent. The New Zealand equity segment of the portfolio fared

better on a relative basis, declining only 11.8 per cent for the same period. While this was disappointing, growth assets represented only a part of AGMARDT's total portfolio. These losses were partially offset by our significant exposure to fixed interest securities with New Zealand fixed interest returning 10 per cent and global fixed interest returning 9 per cent.

In addition to the strong returns from the fixed interest portfolio, AGMARDT benefited from an overweight to fixed interest securities relative to the policy benchmark and an underweight to commodity and equity allocations. In May, as volatility began to subside, the Trustees initiated a rebalancing programme in order to return the Fund to its policy allocations.

Strategic Asset Allocation

In January 2009, the Trustees, in consultation with AGMARDT's Investment Advisors, revised its Strategic Asset Allocation (SAA). This review formed part of the regular monitoring of the Fund's strategy with the last review having taken place in 2006. The new SAA, which specifies the Fund's asset mix and view in the economic environment increased the Fund's investment in fixed interest securities by reducing to zero the investment in the commodity and hedge fund asset classes. The resulting allocation to equity securities is now 40 per cent in growth assets (International and New Zealand equities, and property) with 60 per cent allocated to fixed interest securities. The Trustees are of the view that this asset allocation will best meet AGMARDT's future granting commitments while preserving AGMARDT's Real Capital.

Strategic Asset Allocation	%
Growth Assets	
• Global equities	27
• New Zealand equities	8
• Property	5
	40
Income Assets	
• International fixed interest	45
• New Zealand fixed interest	15
	60
Total Assets	100%

SUMMARY FINANCIAL STATEMENTS FOR THE YEAR ENDED 30th JUNE 2009

The following are summary financial statements. For full audited financial statements see www.agmardt.org.nz.

Prepared by
Curtis McLean Limited
Chartered Accountants
Wellington, New Zealand

Statement of Responsibility	18
Audit Report	19
Summary Statement of Financial Performance	20
Summary Statement of Changes in Equity	21
Summary Statement of Financial Position	22
Summary Statement of Cash Flows	23
Summary of Accounting Policies	24
Directory	25



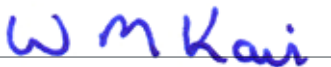
STATEMENT OF RESPONSIBILITY For the Year Ended 30th June 2009

The Board of the Agricultural and Marketing Research and Development Trust (the Trust) accepts responsibility for the preparation of the Summary Financial Statements and the judgements made in them.


The Board of the Trust has the responsibility for establishing, and has established, a system of internal control designed to provide reasonable assurance as to the integrity and reliability of financial reporting.

In the Board's opinion, these Summary Financial Statements fairly reflect the financial position and operations of the Trust for the year ended 30 June 2009.

For and on Behalf of the Board



W M Kain
Chairman



M Purnell
Trustee

Date 18 December 2009

Audit Report

**To the readers of the
Agricultural and Marketing Research and Development Trust's
summary annual financial statements
for the year ended 30 June 2009**

We have audited the summary financial statements as set out in pages 20 to 24.

Unqualified Opinion

In our opinion the information reported in the summary financial statements complies with FRS-43: *Summary Financial Statements* and is consistent with the full financial statements from which they are derived.

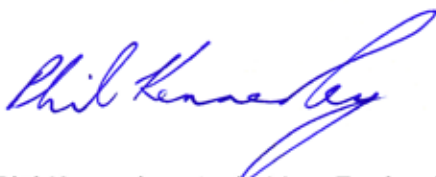
We expressed an unqualified audit opinion, in our report dated 30 October 2009, on the full financial statements.

Basis of Opinion

Our audit was conducted in accordance with the Auditor-General's Auditing Standards, which incorporate the New Zealand Auditing Standards. Other than in our capacity as auditor, we have no relationship with or interests in the Trust.

Responsibilities of the Trust and the Auditor

The Board of Trustees is responsible for preparing the summary financial statements and we are responsible for expressing an opinion on those summary financial statements.



Phil Kennerley, Audit New Zealand
On behalf of the Auditor-General
Wellington, New Zealand
18 December 2009

SUMMARY STATEMENT OF FINANCIAL PERFORMANCE

For the Year Ended 30th June 2009

		2009	2008
Income			
Interest Income		85,429	64,662
Gain (Loss) on Investment Portfolio		(3,391,721)	(4,050,784)
Investment Fee Rebates		270,387	348,008
Other Income		-	897,910
Total Income		(3,035,905)	(2,740,204)
Less Expenses			
Other Expenses	278,089		375,697
Auditors Remuneration -Accounts	16,240		18,784
Auditors Remuneration -NZIFRS Transition	-		6,750
Depreciation	531		555
Electricity Expenses	798		-
Investment Advice	61,060		61,248
Personnel Costs	130,254		114,185
Rent & Accommodation	19,702		37,983
Trustees' Remuneration	77,760		76,260
		584,434	691,462
Surplus (Deficit) of Income over Expenditure before Allocation of Grants		(3,620,339)	(3,431,666)
Net grants allocated this year		2,121,997	1,587,246
Net Surplus (Deficit) for the year		(5,742,336)	(5,018,912)

SUMMARY STATEMENT OF CHANGES IN EQUITY

For the Year Ended 30th June 2009

		2009	2008
Equity as at 1 July		61,021,683	66,040,595
Amounts Recognised Directly in Equity		-	-
Net Surplus (Deficit) for the year	(5,742,336)		(5,018,912)
Total Recognised Income and Expense		(5,742,336)	(5,018,912)
Transfer From Income Fluctuation Reserve		3,768,149	-
Transfer To Capital Maintenance Reserve		(3,768,149)	-
Equity as at 30th June 2009		\$55,279,347	\$61,021,683

SUMMARY STATEMENT OF FINANCIAL POSITION As at 30th June 2009

		2009	2008
Trust Funds			
Capital	32,000,000		32,000,000
Capital Fund Maintenance Reserve	22,595,609		18,827,460
		54,595,609	50,827,460
Revenue Reserves			
Accumulated Income (Deficit)	(5,015,974)		726,362
Income Fluctuation Reserve	5,699,712		9,467,861
		683,738	10,194,223
Total Trust Funds		\$55,279,347	\$61,021,683
Represented By:			
Current Assets			
Cash and cash equivalents	275,535		186,318
Accounts Receivable	616		897,910
Total Current Assets		\$276,151	\$1,084,228
Investments - Current		\$24,445,334	\$27,256,525
Less Current Liabilities:			
Creditors and other payables	398,917		96,471
Provision for Grants - Current	2,694,936		2,157,024
Total Current Liabilities		3,093,853	2,253,495
		21,627,632	26,087,258
Investments - Non - Current		34,680,671	37,065,904
Property, Plant and Equipment		3,438	337
Provision for Grants - Non-Current		1,032,394	2,131,816
		\$55,279,347	\$61,021,683

For and on Behalf of the Board


W M Kain
Chairman

M Purnell
Trustee

Date 18 December 2009

SUMMARY STATEMENT OF CASH FLOWS For the Year Ended 30th June 2009

		2009	2008
Cash Flows from Operating Activities			
Cash was provided from:			
Interest Income		85,429	64,662
Dividends Received		-	-
		85,429	64,662
Cash was applied to:			
Payments to Suppliers and Employees		606,351	638,246
Payments for Grants		2,359,229	2,432,636
		2,965,580	3,070,882
Net Cash from Operating Activities		(2,880,151)	(3,006,220)

Cash Flows from Investing Activities			
Cash was provided from:			
Maturity and sale of investments		36,499,050	67,941,961
		36,499,050	67,941,961
Cash was applied to:			
Purchase of Investments		33,526,050	64,995,969
Purchase of Fixed Assets		3,632	-
Net Cash from Investing Activities		2,969,368	2,945,992
Net Increase (Decrease) in Cash and Cash Equivalents		89,217	(60,228)
Cash and cash equivalents at beginning of year		186,318	246,546
Closing Cash Balance		\$275,535	\$186,318
Closing cash and cash equivalents represented by:			
Cash at bank and call deposit		275,535	186,318
Fund Manager's cash deposits		-	-
		\$275,535	\$186,318

SUMMARY OF ACCOUNTING POLICIES As at 30th June 2009

The Agricultural and Marketing Research and Development Trust was established by a Deed of Trust dated 20 October 1987 and the summary financial statements have been prepared pursuant to Clause 17 of the said Deed and the Public Finance Act.

Reporting Entity

The Agricultural and Marketing Research and Development Trust (the Trust) is a fourth schedule entity in terms of the Public Finance Act 1989. These summary financial statements have been prepared in accordance with the Public Finance Act 1989 and the Crown Entities Act 2004.

The Trust's primary objective is to provide public services to the NZ public, as opposed to that of making a financial return.

Accordingly, the Trust has designated itself as a public benefit entity for the purposes of New Zealand Equivalents to International Financial Reporting Standards (NZIFRS).

The summary financial statements for the Trust are for the year ended 30 June 2009, and were approved by the Board on 30 October 2009.

Basis of Preparation

Statement of Compliance

The summary financial statements of the Trust have been prepared in accordance with the requirements of the Crown Entities Act 2004, which includes the requirement to comply with New Zealand generally accepted accounting practice (NZ GAAP).

The summary financial statements comply with NZ IFRS, and other applicable Financial Reporting Standards, as appropriate for public benefit entities.

These summary financial statements comply with the requirements of FRS-43.

Measurement base

The summary financial statements have been prepared on a historical cost basis, in New Zealand dollars, except for the measurement of equity investments and derivative financial instruments at fair value.

Differential Reporting

In the full financial statements, the Trust is a qualifying entity for Differential Reporting because it is not publicly accountable and does not qualify as a large entity as defined by the New Zealand Institute of Chartered Accountants framework for Differential Reporting. The Trust has not taken advantage of any of the Differential Reporting exemptions except for some components of NZ IFRS 7: Financial Instrument Disclosures.

Full Financial Statements

This summary has been extracted from the full financial statements that received an unqualified audit opinion.

This summary cannot be expected to provide as complete an understanding of the Trust's financial performance and position as the complete financial statements.

A copy of the full audited financial statements for the Trust is available from the Trust's Wellington Office - see the directory on page 25 or visit www.agmardt.org.nz.

AGMARDT TRUST DIRECTORY As at 30th June 2009

BOARD OF TRUSTEES

Dr William Kain (Chairman)
Mr Max Purnell
Mr Jeff Grant
Prof. Jacqueline Rowarth

MANAGEMENT

Stephen Macaulay (General Manager)

TRUST OFFICE

5th Floor	PO Box 25207
Axon House	Panama Street
1 Willeston Street	Wellington 6146
Wellington	
Tel (04) 499 6173	Fax (04) 472 8620

INVESTMENT ADVISER

Russell Investment Group Ltd

AUDITOR

Audit New Zealand on behalf of the Auditor-General

BANKERS

ASB Bank limited

SOLICITORS

Izard Weston

