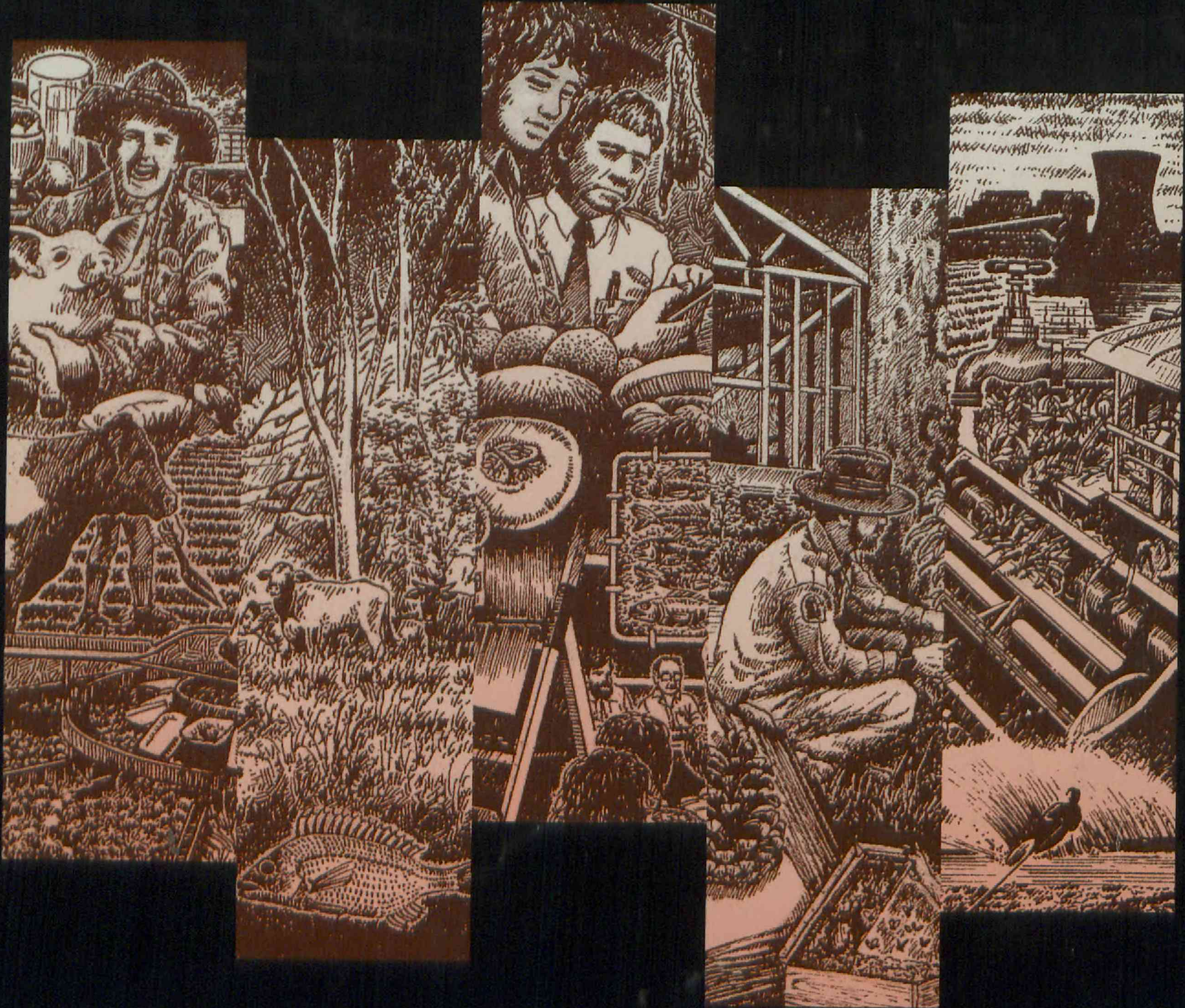




Queensland Department of Primary Industries



Annual Report
1989-90

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Annual Report 1989-90



Queensland Department of Primary Industries

This annual report's purpose is to account to the Queensland Government and the community on performance of programs and results achieved within the Queensland Department of Primary Industries.

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Office of the Director-General

The Honourable E.D. Casey, MLA
Minister for Primary Industries
Primary Industries Building
80 Ann Street
BRISBANE QLD 4000

Dear Mr Casey,

It gives me pleasure to present this report, for the year ending 30 June 1990, to you. It covers the activities of the Department of Primary Industries, comprising five corporate groups - Land Use and Fisheries, Queensland Forest Service, Agricultural Production, Water Resources Commission, and Agricultural Marketing and Development - and activities related to Group Coordination.

Yours sincerely,



(J. G. Miller)
DIRECTOR-GENERAL

Director-General's Message

In recognition of the key role that primary industries play in Queensland's development, the new Government restructured the Department of Primary Industries in late 1989. Apart from continuing its traditional support for the rural sector, the Department now has responsibility for water resources and forestry.

This restructuring is intended to end fragmentation and remove duplication by bringing all major rural economic matters together within the one department. Consequently, the new Department is in a position to formulate better policy options. I am sure that we now have an institutional framework that can give Queensland the right foundation for sustainable development of the State's rural resources.

One of the new Department's first initiatives was the creation of strategies to ensure the delivery of whole on-farm advice and the integrated management of major catchment areas in Queensland. I am excited by the opportunities associated with such important strategies and the lead role the Department will play in fostering the sustainable management of our natural resources.

A Board of Management was established to provide corporate direction for the new Department. At this level, six executive directors were appointed, five of whom head corporate groups. The other, Peter Bevin, has corporate planning and group integration responsibilities for the whole Department.

Tom Ryan retained his position as Conservator of Forests in charge of the Queensland Forest Service, and Tom Fenwick remained Commissioner of Water Resources in charge of the Water Resources Commission. The executive directors appointed to head the three corporate groups derived from the former Department of Primary Industries are: John Leslie (Agricultural Production Group), Harley Juffs (Land Use and Fisheries Group) and Derek Marrable (Agricultural Marketing and Development Group).

During the year, the Department achieved major progress with the rehabilitation program for the Great Artesian Basin. The Water Resources Commission, with the Commonwealth Government, is helping landholders recondition uncontrolled bores and so conserve a vital resource. New measures to improve the State's return on water resource infrastructure investment were also introduced. One such measure, water auctioning, was successfully introduced at St George.

The Department is under public scrutiny through the Resource Assessment Commission into the forestry industry and the Fitzgerald inquiry into the future of Fraser Island - all of which are significant to the future of the Department and the forest industry.

Recognising the importance of primary production to the Queensland and Australian economies and the links to the manufacturing and retail sectors, the Department undertook a major strategic review of extension during the year. The outcomes will influence and shape the Department's extension policies and services in the future.

As a matter of priority, the Board of Management, in consultation with the Minister, has taken steps to revise the Department's corporate plan to recognise our broader role. This process will be finalised in the first half of 1990-91. It will involve a review of the Department's program structure and priorities, and establish strategies to realise the Department's broader role.

This report is an account of the programs managed by the Department's corporate groups and their achievements. While each of the former departments had implemented program management, their experiences and successes with this management process have been varied. This is reflected in our reporting this year. I am confident that the knowledge gained from our program management experiences will significantly contribute to and shape our new Department's direction and structure.

I am indebted to my staff's continuing diligence and competence. While the Department has been undergoing significant change, they have accepted the challenges of maintaining programs and servicing clients. I commend all of them on their achievements during 1989-90.

I believe the Department has fulfilled its duty to the people of Queensland through overseeing the productive and sustainable management of the State's agricultural lands, pastures, forests, water, wetlands and fisheries. It will continue to do so and thereby play a vital role in the State's development and prosperity.



Jim Miller
Director-General



Department of Primary Industries

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STRUCTURE

The basis of the new Department of Primary Industries' submission to the Machinery of Government Committee was to set up the new Department as an organisation with five functional groups: Queensland Forest Service, Water Resources Commission, Land Use and Fisheries Group, Agricultural Production Group, and Agricultural Marketing and Development Group.

The groups were perceived to be client based and to provide a mechanism for maintaining and enhancing the Department's wide diversity of skills and technical expertise.

The organisational arrangements and program structures depicted in this report are interim and will be subject to change as a result of the Department's planning processes.

STAFF NUMBERS

At 30 June 1990, 6 263 salaried and wages staff were employed in the Department of Primary Industries.

Of these, 3 292 were located in the three Agriculture Groups, 1 477 in the Queensland Forest Service and 1 494 in the Water Resources Commission.

PURPOSE

The Department of Primary Industries' purpose is to oversee the productive and sustainable management of the State's agricultural lands, pastures, forests, water, wetlands and fisheries for the community's net benefit.

(Top left) The area of Queensland covered by Land Care committees. More committees are being formed.

(Below left) ACI Timber Products' new sawmill at Imbil uses the latest technology to achieve maximum usage of hoop pine logs harvested from nearby plantations.

(Top right) The first water auctions for Queensland were held in St George in November 1989 and raised \$1.16m in revenue.

(Middle right) Stock inspector Perry Jones (second from left) records details of a tuberculosis test on Gulf country cattle. Queensland was declared 'Impending Free' of tuberculosis in January 1990.

(Below right) Marketing reporter Trevor Brewer (left) collects market information for entry into the computer-based marketing information system. The information is used in the daily DPI report from the Brisbane Wholesale Market, Rocklea.



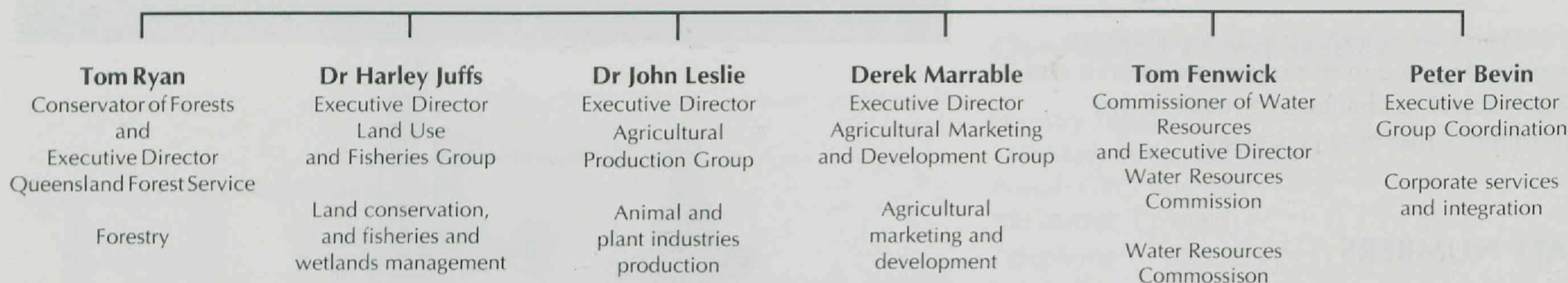


Board of Management

Hon. Edmund Casey, M.L.A.
Minister for Primary Industries

Jim Miller
Director-General and Chairman of Board of Management

Budget and policy



The Department of Primary Industries is managed through a Board of Management, comprising the director-general, as chairman, and its six executive directors.

Role. The Board's role is collectively to manage the Department, particularly at a strategic and corporate level, with individual members responsible for activities within their own area.

Responsibilities. The Board's responsibilities are to establish, in consultation with the Minister, a clear view of the Government's policies, aims and objectives for the Department. The Board is required to set and provide corporate direction, to allocate resources across programs, and to deal with the many significant issues that constantly affect the Department. These actions/activities will be achieved through a program-based system of management.

Management approach. For the Department to fulfil its role, team work is essential for doing business. Interdependencies between the Department's corporate groups are recognised. Corporate team effort, at all levels, is essential for effective service delivery to clients.

Interacting and facilitating communication with the Department, industry and the community at large is a priority and focus of team work.

Responsible and participative management is promoted; and measured risk-taking by managers is encouraged. Results are recognised as the appropriate measure of performance.

Board members are committed to a high standard of corporate behaviour as illustrated in the values contained in the Department's operating philosophy. For staff and clients, Board members will always endeavour to be responsive and accessible, and to set a clear vision of the future.

Operating philosophy. The principles set out below are inherent in all of the Department's activities and are its code for conducting business.

Clients. The Department has a client-centred focus. Service to the community is a fundamental value. The aim is to provide timely quality products and services.

Staff. Staff are the Department's most important resource. Their professional and personal development are emphasised within a context of program achievement.

Community participation. Consultation with community groups and industry organisations about their needs and concerns is an integral part of doing business.

Future. The Department recognises its role as a corporate citizen of Queensland. It is committed to the sustainable multiple-use management of those natural resources for which it has responsibility. Management decisions taken today are recognised for their impact on future generations and take account of the community's values and needs.

James Gordon Miller, B.Agr.Sc., Grad.Dip.Bus.Admin., QDDM, Director-General

Mr Miller joined the DPI in 1964 and, for the next 6 years, was a field technologist in dairy production and processing in the State's dairying areas. In 1970 he became a senior technologist in charge of the dairy technology section at Otto Madsen Dairy Research Laboratory, Brisbane. Four years later, he became the supervising scientist in the field services branch, based in Brisbane, and was involved in daily administration of staff in 30 centres throughout Queensland. Subsequently, he was appointed assistant director (1978) and director (1980) of field services branch; director, division of dairying and fisheries (1983); assistant director-general (1986); deputy director-general (1988); acting director-general (1989); and director-general (1990).

Peter John Charles Bevin, B.E.(Civil), M.I.E.(Aust), Executive Director, Group Coordination

Mr Bevin joined the Water Resources Commission in 1961. A civil engineer, he worked throughout the State on planning, design and construction of major water supply projects. He gained wide experience in district office management, particularly in Emerald and Bundaberg, before transferring to Brisbane in 1980. During the early 1980s, he had statewide responsibilities for designing and managing irrigation projects. In 1987 he was appointed deputy commissioner of water resources. He was appointed executive director, group coordination, in 1990.

Harley Shields Juffs, QDDM, B.Agr.Sc.(Hons), Ph.D., Grad.Dip.Bus.Admin., F.A.I.F.S.T.

Executive Director, Land Use and Fisheries Group

Dr Juffs joined the DPI in 1967, initially as a microbiologist at the Otto Madsen Dairy Research Laboratory, Brisbane. He did postdoctoral research in the United States in 1973 and became officer-in-charge of the regional dairy research laboratory, Toowoomba, in 1976. In 1978 he transferred to the dairy field services branch. Subsequently, he was appointed director, dairy field services branch (1983); director, food research and technology branch (1985); deputy director (1988) and director (1989) of the division of dairying and fisheries; director, division of dairying and food technology (1989); and executive director, land use and fisheries (1990).

Thomas Ryan, B.Sc.(For)(Hons), Dip.For. Conservator of Forests and Executive Director, Queensland Forest Service

Mr Ryan commenced duties with the then Department of Forestry in 1961 in research at Beerwah. This was followed by a series of 2-year appointments as an assistant to the resources officer and to the marketing officer, and as officer-in-charge automatic data processing, education officer and district forester Brisbane. In early 1978 he took over the position of district forester Gympie, transferring back to head office in mid-1979 as officer-in-charge, harvesting and marketing. Then followed promotion to director of marketing (1981); assistant conservator, technical services (1983); deputy conservator (1985); and conservator of forests (1988).

John Kenneth Leslie, B.Agr.Sc.(Hons), Ph.D., F.A.I.A.S. Executive Director, Agricultural Production Group

Dr Leslie's career began with a departmental fellowship to the University of Queensland in 1952. In 1956 he began agronomic research on the Darling Downs and contributed to the selection and evaluation of sown pastures and their establishment on black soils, to zinc



Board of Management

The Minister for Primary Industries, Mr Edmund Casey (seated middle), with the DPI Board of Management (from left): Jim Miller (chairman seated), Peter Bevin, Dr Harley Juffs, Derek Marrable, Tom Ryan, Dr John Leslie and Tom Fenwick (seated).

nutrition of field crops and to fallowing and land preparation for annual crops. He has had extensive experience in research and extension administration. He was the first Queensland Wheat Research Institute director (1967-74); directed research and extension for field crops, sown pastures and rangelands for Queensland (1974-81); and administered research and extension for field crop, horticultural and pasture-based industries in Queensland (1981-89). During 1989-90, before his present appointment, he was executive director, technical services.

Thomas David Fenwick, B.E.(Hons), F.I.E. Aust. Commissioner of Water Resources and Executive Director, Water Resources Commission

Mr Fenwick joined the Water Resources Commission in 1963. A civil engineer, he worked in water and land resource planning and major works construction before resigning in 1970 to broaden his experience in the private sector. He rejoined the Commission in 1973. He has been closely involved in planning and developing many of the State's major water and land development projects, including the Burdekin River project. Recently, he has helped shape new initiatives to support greater flexibility in water resource management. He was appointed assistant commissioner in 1985 and commissioner in 1986.

Donald Derek Marrable, M.B.E., B.Sc., F.A.I.C.D. Executive Director, Agricultural Marketing and Development Group

Mr Marrable joined the DPI in mid-1990. He graduated from the Australian and the Royal Naval colleges and saw active service in Malaya, Borneo and Vietnam before retiring as a commander in 1977. Key posts included head of the RAN surface weapons trials unit and, from 1973 to 1976, Defence Staff at the Australian Embassy, Washington, D.C. He did postgraduate study in systems management at the University of Southern California and was elected a Fellow of the Institute of Directors, Australia, in 1978. Between 1983 and 1987, he organised and led many trade missions from Australia to China and the United States before joining Elders IXL Ltd as director, Elders Tradelink.



Corporate Highlights

GROUP COORDINATION

- The Department was restructured to include three Agriculture Groups, the Queensland Forest Service and the Water Resources Commission.
- A new head office was opened in the Primary Industries Building, 80 Ann Street, Brisbane, and includes a ground floor public Information Centre.
- DPI publication sales reached new levels with 37 220 product units sold for a return of \$576,932.

LAND USE AND FISHERIES GROUP

- Conservation measures now protect 1.22m ha of Queensland's cropping lands.
- The Year of Land Care was launched.
- Land Care committees now service much of Queensland.
- Total protected fisheries and habitat and wetland reserves reached 2m ha.
- Construction of the Bribie Island Aquaculture Centre was well advanced.

QUEENSLAND FOREST SERVICE

- The revenue-to-expenditure ratio of the Native Forest Production Program rose from 0.57 to 0.71.
- The Plantation Production Program provided more than 62% of total Crown mill logs, representing about \$400m of sales for locally based industry, all of which is import replacement.
- The Quarry Materials Subprogram achieved a 33% increase in removals, with a record 2.16m m³ supplied to industry.
- Research on accelerating the growth of rainforest cabinetwood trees was featured on the popular television series *Beyond 2000*.

AGRICULTURAL PRODUCTION GROUP

- The disease-free status for brucellosis was maintained and impending freedom from tuberculosis was achieved.
- Environmental, animal welfare and community issues relating to feedlots were being addressed.
- New decision-support computer packages aided crop, pasture and animal management.
- Research for sustainable agriculture received high priority.
- New integrated pest management books and videos were released.
- The first phase of a strategic redesign of the DPI's extension services began.

WATER RESOURCES COMMISSION

- The *Water Resources Act 1989* amalgamated provisions of four Acts and modernised water legislation.
- Heavy rainfall filled the State's dams to a record 96% of full supply level, permitting record sales of water.
- The Great Artesian Basin Rehabilitation Program to recondition uncontrolled bores began.
- The Commission raised \$1.16m at Queensland's historic first water auction at St George.
- The Commission auctioned a further 16 new Burdekin Irrigation Area farms as part of the plan to develop 500 new farms over 15 years.

AGRICULTURAL MARKETING AND DEVELOPMENT GROUP

- Initial development of a computer-based marketing information system began.
- Community understanding of responsible use of chemicals improved.
- Collaboration and cooperation with food industries were enhanced.
- Awareness of export business potential and opportunities for horticulture increased.
- Registration procedures for new chemicals were standardised and simplified.

Legislation

During 1989-90, 10 pieces of legislation, now administered by the Minister for Primary Industries, were enacted through the Queensland Parliament.

Cotton Industry Deregulation Act 1989

As a further step in deregulating the cotton industry, this Act was passed after the winding up of the grower-controlled Cotton Marketing Board and the establishment of the new grower-controlled Queensland Cotton Corporation. This is a company incorporated under the laws of Queensland and is not a statutory body. The Corporation was granted exclusive rights to establish, own and operate cotton gins in Queensland, south of the 22nd parallel, until 31 December 1992. In return, the legislation requires the Corporation to contract with all growers who wish to deliver to the gins and to accept for ginning all seed cotton delivered by contracted growers.

The Act will expire on 31 December 1992. Before that date, the Minister for Primary Industries may recommend at any time to the Governor-in-Council that the operation of the Act be suspended.

Primary Producers' Co-operative Associations' Act Amendment Act 1989

This amending Act enables amalgamation of Queensland primary producers' co-operative associations with similar bodies formed in other jurisdictions, provided complementary legislation exists in the other jurisdiction. Specific provision was made for the Minister's approval of a proposed merger between a Queensland dairy co-operative and a New South Wales dairy co-operative.

Queensland Grain Handling Act Amendment Act 1990

This Act amended the *Queensland Grain Handling Act 1983-1988* to alter the composition of the board of directors of the Queensland Grain Handling Authority (trading as Bulk Grains Queensland). The size of the Authority's board was reduced from 12 to 10 members. Two of the new directors will have special qualifications in grain handling, marketing, finance, business administration or industrial relations, and one will represent the grain merchants and traders operating in Queensland. The new board will take office on 1 October 1990.

Recreation Areas Management Act Amendment Act 1990

This amending Act ensures that the Recreation Areas Management Act cannot override the primary legislation of land tenures within recreation areas. It provides for the Director of National Parks and Wildlife and the Conservator of Forests to constitute the Queensland Recreation Areas Management Board.

Stock Act and Local Government Act Amendment Act 1990

This Act divides responsibility for regulating cattle feedlots between local authorities and the Department of Primary Industries. A licensing scheme for cattle feedlot operations was established. Licences are now issued under strict guidelines by the Chief Inspector of Stock, subject to the approval of the relevant local authorities for use of a site as a cattle feedlot. The Chief Inspector of Stock is solely responsible for regulating the management and operation of feedlots.



A Darling Downs feedlot - one of 200 licensed feedlots in Queensland.

Sugar Acquisition Act Amendment Act 1990

This amending Act extended the marketing functions of the Sugar Board to 30 June 1991 to enable the Board to continue to market Queensland's raw sugar crop for the 1990 season.

Sugar Experiment Stations Act Amendment Act 1990

This amending Act expanded the Sugar Experiment Stations Board from four to seven members to provide for one additional representative each of cane growers and mill-owners and the appointment of a person with special qualifications. The amendment also provided for the appointment of delegate members of the Board to deputise for absent members.

Water Resources Act 1989

This Act repealed the Water Resources Administration Act, the Irrigation Act and the Water Act and thereby consolidated and improved the legislation that deals essentially with water resources assessment and management and rural water supply. It restated and clarified the Crown's right to the use and control of non-tidal surface and underground water without affecting in any way the rights of riparian landowners or the ownership of land.

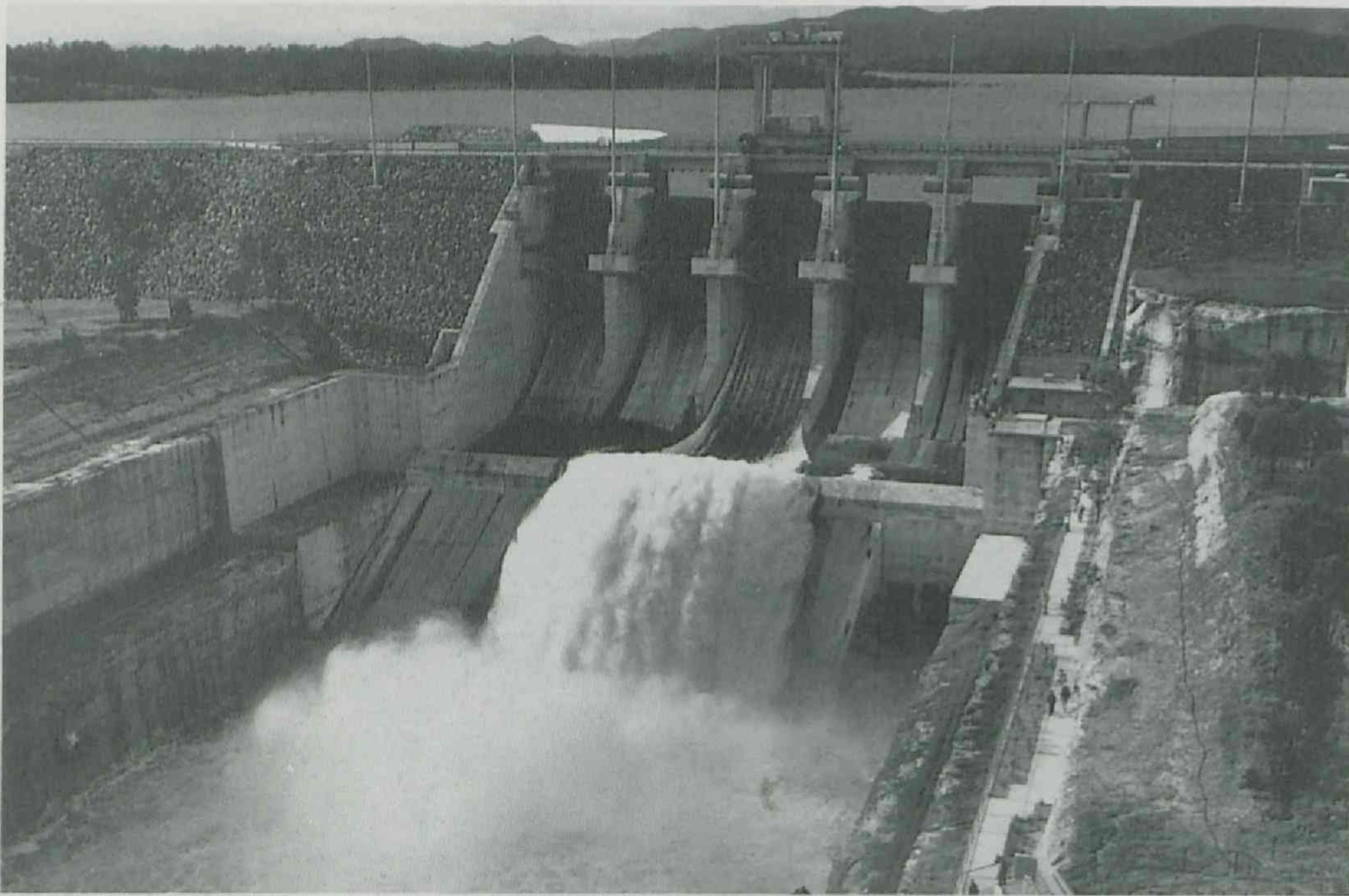
New provisions deal with tourist and recreational facilities at the Water Resources Commission's storages, the sale or lease of those facilities, the disposal of farms within irrigation areas and the transfer of water allocations between irrigators. Other new initiatives include advertising bore licence applications, removal of time limits on licences, use of water by government departments and contractors, and a more practical approach to the use of surface water for domestic purposes. New measures were added to minimise possible losses of hazardous wastes resulting from the treatment of minerals from holding dams and ponds into surface or underground water. Water management was enhanced by introducing announced allocations. This enables irrigators to plan ahead, confident of receiving an assured supply of water during the irrigation season. Provisions relating to water supply and drainage areas were also updated.

Wheat Marketing (Facilitation) Act 1989

This Act facilitates joint venture marketing arrangements between the Australian Wheat Board and the State Wheat Board for wheat and various other grains as declared by the Governor-in-Council for the purpose of the Act. The Act authorises the Australian Wheat Board to operate within Queensland in conjunction with the State Wheat Board and also continues the Wheat Varieties Advisory Committee, which advises the two Boards on variety classification and other related matters. The Act made a number of minor amendments to the Wheat Pool Act.

Wivenhoe Dam and Hydro-electric Works Act Amendment Act 1989

This Act amended the Wivenhoe Dam and Hydro-electric Works Act so that a tourist resort development at Wivenhoe Hill, overlooking Wivenhoe Dam, could proceed. The amendment provides that land vested in the Brisbane and Area Water Board as trustee may be used for certain purposes authorised by the Governor-in-Council. The Board has no power to sell the land, but may lease it to another party for one of the authorised purposes. Funds generated from rentals will partly offset the Board's operating and administration costs.



Amended legislation will allow a tourist resort to be built at Wivenhoe Hill overlooking Wivenhoe Dam, near Esk.

Group Coordination

RESPONSIBILITIES

The group coordination function was established after the appointment of an Executive Director, Group Coordination, in June 1990.

This position has two main responsibility areas as set out below.

- Ensuring a coordinated, departmental-wide approach to corporate activities that are common to more than one management unit, particularly in corporate planning, financial management, staff development, and information and administrative services.

(The establishment of a small group of staff to handle this work was being addressed late in the year.)

- Providing executive coordination and focus, at Board of Management level, for corporate support services to the three new corporate groups (Agriculture Groups) derived from the former Department of Primary Industries.

(Six branches - Accounts, Administrative Services, Biometry, Information, Organisational Services and Staff Development - provided these support services as part of the former Department's Corporate Services Program.)

ACHIEVEMENTS

In late 1989, a number of small working groups undertook preliminary analyses to find improved ways of integrating or amalgamating activities common to the three former departments: Primary Industries, Water Resources and Forestry. Action was taken to implement some of the findings.

Particular attention was paid to integrating and amalgamating administrative services across the new Department to ensure efficient resource use and effective information delivery to all management levels and outside clients.

Initial steps were taken to revise the Department's corporate plan in recognition of its broader role. Planning began late in the year for a common financial management and accounting system to serve all of the Department's five corporate Groups.

Under the former Department's Corporate Services Program, a number of significant achievements, as outlined below, were made during the year.

Administrative services. Office complexes were provided for staff at Charters Towers and Monto, and residences at Charters Towers and Longreach. Construction of the research facilities at the Bribie Island Aquaculture Centre was in the final stages and construction of a new training centre on the site had begun.

Administrative staff at most country centres had been supplied with word processors and training in the use of WordPerfect 5.0, and a significant start had been made in providing laser printers.

Administrative support services throughout the State were being reviewed to increase their effectiveness in meeting regional needs.

Biometrical and computing services. Statistical analysis of research data undertaken by staff was enhanced through organisational software licences, and menu-driven and sophisticated statistical packages for microcomputers.



Christmas in the DPI - receptionist Lynette Bates had a Christmas smile in December for customers in the newly opened DPI bookshop on the ground floor of the Primary Industries Building, 80 Ann Street, Brisbane.

Enhancements to the expert system, CONSULTANT C, will give staff and the public readier access to much of the specialised and technical information held in data bases by the Department's Agriculture Groups. The expert system will provide a common interface between information systems and will help interpret technical information. Investigations into spatial modelling and presentation of spatial information using geographic information systems are proving fruitful.

Local area networking over the departmental network, QDPINET, is providing higher capacity data communications. Networking was provided to the Department's head office and was being extended to the Animal Research Institute, Yeerongpilly, and the Agricultural Research Laboratories, Indooroopilly. High-quality presentation graphics were provided on the network, allowing quality slides and overhead transparencies to be produced.

Information. A public Information Centre began operating in August 1989 on the ground floor of the new Primary Industries Building, Brisbane. Clients now have access to a range of information resources, including displays, brochures, farm notes, videos, books and computer data bases. The Centre provides clients with answers through self-help facilities and operates a telephone and mail enquiry service.

The opening of a bookshop, as part of the Information Centre, means that the public can now easily see the range, prices and availability of Departmental books, videos, computer software, educational kits and posters. Improved public access and display brought increased sales.

Book marketing continued to expand, building upon the outstanding achievements of 1988-89. Dealings with the wholesale/retail sector were consolidated, and this sector accounted for 28% of total sales, while 31 sales centres in DPI country offices accounted for 12%. At 49%, mail-order sales remained the main sales avenue, supported by regularly updated book-distribution mailing lists that were extended to 41 market segments.

A plan to market the Department's books into agribusiness stores was implemented with encouraging results. From January to June 1990, the direct mail/telephone canvassing of selected stores resulted in 33 new retail outlets. The signs for continued growth in this sector are promising.

Total sales from all sectors were 36 766 books, 205 videos, 60 educational kits and 189 software programs, returning \$576 932.

The Library of the Agriculture Groups, the second largest agricultural library in Australia, was re-established next to the Information Centre, Primary Industries Building. This has encouraged greater public and departmental use of library resources and services. A significant increase in demand for library services came from students of tertiary institutions and colleges. A fee-for-service was introduced for some library search services to agribusiness clients.

Organisational services. A comprehensive range of quality services was provided in human resource management, management services, internal audit and administrative computing.

Highlights included:

- completion of the primary industries personnel system and its transfer to the branch information system to make personnel information available on-line to branch management;
- a training program for personal computer users to enhance their skill and effectiveness; and
- wide-ranging reviews in information technology, management strategies, administrative systems and cost efficiencies.

Improvements to departmental efficiency and effectiveness were emphasised through better use of management information and information technology, and increasingly widespread organisational reviews.

Staff development. Managerial and interpersonal-knowledge training services were provided to staff to ensure efficient and effective performance of duties.

Important initiatives were the introduction of action learning methods and the associated movement away from single courses towards programs incorporating contact with participants over an extended period. The goal is to improve the transfer of knowledge and skills in the work place. Early results indicate this was being achieved.

A survey of extension staff's organisational culture and values was completed as a research project supporting the Department's extension policy review. The survey findings will help in developing strategies to meet many of the challenges facing extension staff and senior management.



Land Use and Fisheries Group

HISTORY

The Land Use and Fisheries Group was established as part of departmental restructuring that took effect in April 1990. The Group administers the Land Conservation Program and the Fisheries and Wetlands Management Program.

The Queensland Boating and Fisheries Patrol was transferred from the former Department of Harbours and Marine to the Division of Fisheries and Wetlands Management. Botany Branch was transferred from the Division of Plant Industry to the Division of Land Management.

In 1989-90 the Group administered two of the Department's focal programs: Land Care and Aquaculture Development.

LAND CONSERVATION PROGRAM

The Land Conservation Program is designed to protect Queensland's land resources from loss or damage while maintaining or improving soil productivity and the quality of commodities produced from the land.

Guidelines were published for agricultural land evaluation in Queensland. These will help in planning for changing community requirements, developing new land uses and adopting new technology.

Substantial progress was made towards all landholders using sustainable land and farm management practices. Soil conservation measures now protect 1.22m ha of Queensland's cropping lands and 5 500 properties now have property plans.

A major part of Division of Land Management activity is now subsumed under the ethic of Land Care. The Queensland Land Care Council's formation recognised concerns for the future health of the agricultural landscape.

FISHERIES AND WETLANDS MANAGEMENT PROGRAM

The Fisheries and Wetlands Management Program is designed to manage and conserve the fisheries resources and the natural environment supporting the fishing industry in Queensland, and to improve industry productivity.

This program was given significant impetus by a separate Division of Fisheries and Wetlands Management being created out of the former Division of Dairying and Fisheries. Additional staff and resources were allocated to give greater direction and urgency to managing the State's marine resources and the ecosystems that support those resources.

The transfer of the Queensland Boating and Fisheries Patrol gave the Division extensive manpower and vessel resources along the entire Queensland coastline, and a highly trained and professional operating unit in fisheries management and wetlands protection.

The Aquaculture Development Focal Program focused on the building of the Bribie Island Aquaculture Centre and on determining the Centre's goals and impact on overall aquaculture development in Queensland.

FUNCTIONS

Land Conservation Program

Description. The program incorporates a range of activities to protect Queensland's land resources from loss or damage while maintaining or improving productivity of the soil and quality of commodities produced on the land.

Purpose. The program's purpose is to maintain the quality and productivity of the State's lands.

Goal

- To maintain and improve the stability and productivity of rural lands and sustain the quality of food and fibre produced from them through the adoption of agricultural and pastoral systems that have minimum adverse impact on water resources, public utilities and the environment.

Objectives

- To prepare an inventory of Queensland's land resources in terms of their condition and suitability for agricultural use.
- To introduce land and farm management systems that optimise productivity of land while protecting it from degradation and minimising environmental damage (sustainable agriculture).
- To provide land use and land management information in a form useful for decision making by land users.
- To create an inventory and understanding of the State's flora and vegetation as an expanding resource for planning and management.
- To develop chemical and physical monitoring systems that ensure produce meets food quality standards.

Program structure. The Division of Land Management administers the Land Conservation Program, which is split into four subprograms: Land Resource Assessment, Plant Resource Assessment, Soil Conservation and Land Management, and Soil Fertility and Product Quality. The Division administered and contributed to the Land Care Focal Program.



The Queensland Boating and Fisheries Patrol's largest vessel, the 23 metre Wauri, on patrol in Torres Strait. The vessel and its crew are jointly funded by the Queensland and Commonwealth governments.

Fisheries and Wetlands Management Program

Description. The program incorporates a range of activities, including fisheries research, extension and resource management advice, surveillance, patrols and extension in relation to small-craft boating.

Purpose. The program's purpose is to provide for the good order, management, development and protection of Queensland's aquatic resources.

Goals

- To improve the productivity and value of the fishing and aquaculture industries, enhance the resources available for recreational fishing and effectively manage and protect the natural resources supporting these industries.
- To ensure safe small-craft boating and to protect the State's marine resources.

Objectives

- To optimise use of Queensland's aquatic resources based on biological and socio economic criteria.
- To conserve wetlands for sustainable fisheries productivity.
- To support the development of the aquaculture industry.
- To conserve threatened aquatic species.

Program structure. The program is split into five subprograms: Commercial Fisheries, Recreational Fisheries, Marine and Freshwater Habitats, Aquaculture, and the Queensland Boating and Fisheries Patrol. The Division of Fisheries and Wetlands Management administered the Aquaculture Development Focal Program.

The Queensland Boating and Fisheries Patrol performs an important role in small-craft safety and marine resource protection through education, advice, surveillance and enforcement. The Patrol is active in five areas: field operations, special fisheries, development and shark operations, resources and prosecutions.

MANAGEMENT

Land Conservation Program

The Division of Land Management has established its purpose, objectives, basis for setting priorities, priorities and projects, and a structure to manage its program.

Essentially, projects and reporting are outcome oriented and based on achieving predetermined milestones. Defined performance indicators have yet to be established, but, overall, the yardsticks are efficiency and effectiveness. Within a formal divisional work program, subprograms are managed by nominated officers. Industry has a major input to the work program. The Division has a flat management structure with a high level of delegation. Most functions are decentralised, with officers at 38 country centres. Managers within the Division's extension arm are regionally located. Division and branches each have management committees. Management is both top-down and bottom-up.

Most functions and projects are multi-organisational and multi-disciplinary and often involve officers from more than one work group.

The Division's budget is cast in terms of functions and services required to achieve particular objectives. Allocations are not set by precedent.

About 70% of funding is derived from consolidated revenue, with the remainder obtained from external sources. Many projects are consultancies on behalf of other bodies.

Fisheries and Wetlands Management Program

The Division of Fisheries and Wetlands Management's strategic planning process, as with all planning processes, must be continually reviewed and updated. The addition of the Queensland Boating and Fisheries Patrol is an example of how the planning process deals with changes. The strategic plan now incorporates the Patrol's goals and activities as integral parts of the goal to develop and manage the State's fishing industry and fisheries resources.

The planning framework calls for consultation with the fishing industry and other users of the Division's resources. The subprograms are managed as individual units, with managers being responsible for ensuring the relevance of goals and objectives and the quality of output.

Each subprogram is continually tested against the external environment through the Division's participation in joint industry-government committees and forums. These include the Ministerial Advisory Committee on Aquaculture, the Ministerial Recreational Fishing Advisory Committee, the Fishing Sector Advisory Committee, the Queensland Fishing Industry Research Advisory Committee, and inter-departmental and inter-government committees considering coastal management and fisheries protection.

The Division's operating philosophy seeks to tie outputs closely with the express needs of commercial and recreational fishermen, aquaculturists, and community members involved in issues such as coastal management and development, and marine safety.

Performance indicators are derived from the external focus of most of the Division's work. Close consultation with industry and other clients allows for direct feedback on the effectiveness and impact of the various activities.

Funding is primarily from consolidated revenue, supported by specific external funding that ensures research is closely tied to external organisations' needs. The Patrol's operating costs are partly offset by revenue generated from vessel registrations and speedboat licence fees, and from the Commonwealth Government for work performed on its behalf.



The Bribie Island Aquaculture Centre at 30 June showing the prawn nursery and algal production facilities, and the header tanks for salt and freshwater supplies (centre); the seawater pipeline (top centre); and the prawn maturation building under construction (left centre).

LAND USE AND FISHERIES GROUP ORGANISATION



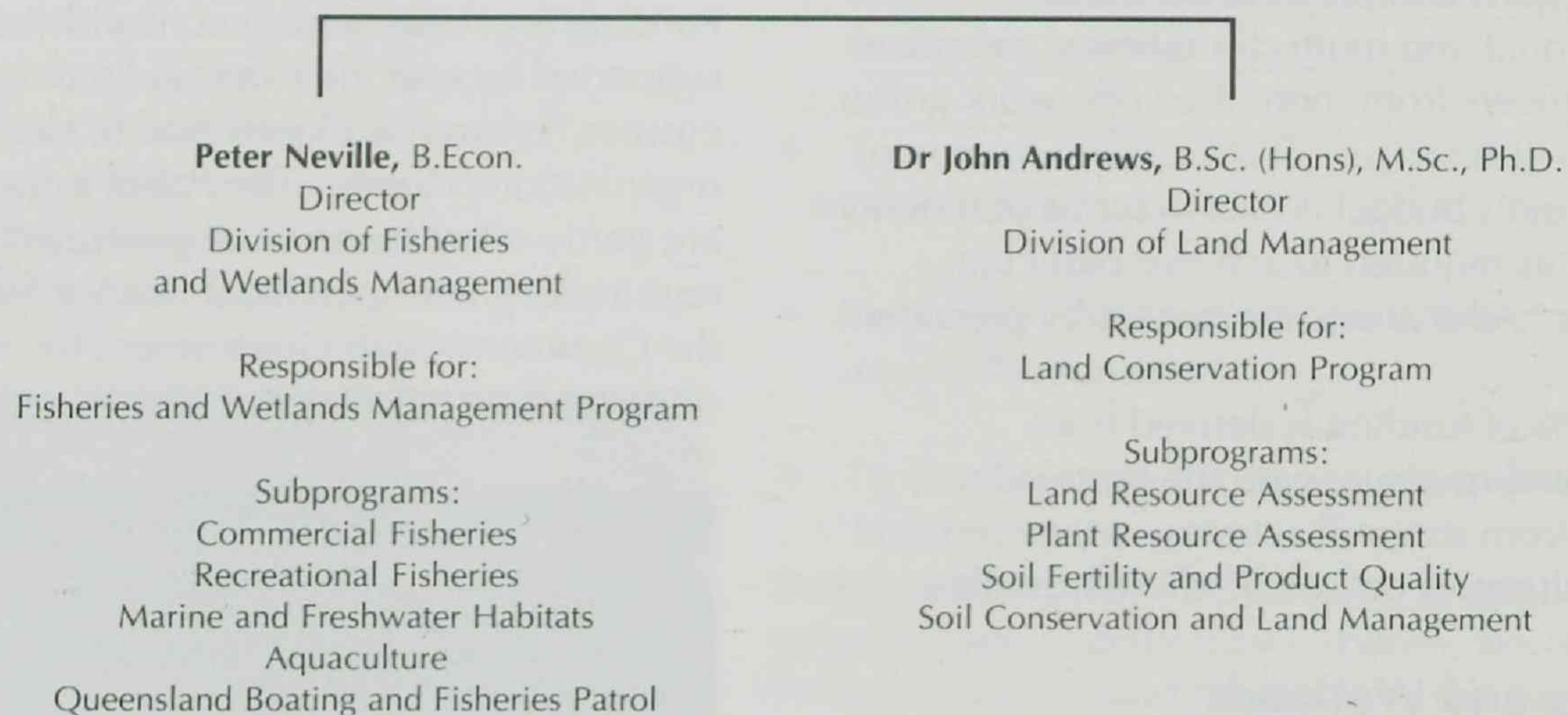
The executive team (from left): Peter Neville, Dr Harley Juffs and Dr John Andrews.

Dr Harley Juffs, QDDM, B.Agr.Sc. (Hons), Ph.D., Grad.Dip.Bus.Admin., F.A.I.F.S.T.

Executive Director
Land Use and Fisheries Group

The **Division of Fisheries and Wetlands Management** has 298 research, extension, regulatory, service and administrative staff located in 29 research centres and offices throughout Queensland.

The **Division of Land Management** has 334 research, extension, service and administrative staff located in 40 research stations and offices throughout Queensland.



OPERATING PHILOSOPHY

The Land Use and Fisheries Group's purpose and goals provide the basic framework for its operating philosophy. The Group's character derives from its main role of documenting the State's land and aquatic resources and promoting the sustainable development of these resources.

Human resources. The Group's staff are its most valuable asset. Emphasis is placed on personal development, technical competence and a professional approach.

Clients. The citizens of Queensland, both individually and collectively, are the Group's clients. However, special emphasis is placed on the Group's relationships with rural landholders, commercial fishermen and recreational anglers.

Community participation. Community groups and industry organisations are consulted about their needs and concerns, and participate in developing and implementing the Group's programs.

Corporate approach. The manifold links between land and aquatic resources are reflected in the Group's role: interacting and facilitating communication with all other DPI corporate Groups, other government agencies at all levels, industry groups and the community at large.

Sustainable development. The Group's overriding obligation is to ensure that Queensland's land and aquatic resources are conserved and enhanced for present and future generations' economic benefit and recreational enjoyment.

REVIEW OF OPERATIONS

Land Conservation Program

Achievements

New flora published. The third and final volume of the *Flora of South-eastern Queensland* was published. This is the first Flora produced in Queensland this century and describes more than 3 700 species.

One million hectares contoured. Queensland's farmers have protected 1m ha of cropping lands with contour banks and waterways. The goal is 1.6m ha of cropping lands protected by contour banks by the year 2000. Conservation measures of various types now protect 1.22m ha of Queensland's cropping lands.

Year of Land Care. The Year of Land Care was launched in Queensland on 13 March 1990 in the presence of the Governor, Sir Walter Campbell, A.C., Q.C., Patron of the Year and Decade of Land Care. The Year and Decade are designed to stimulate public awareness and participation in Land Care.

Land Care committees grow. Land Care committees and groups now service much of Queensland. Land Care initiatives promoting sound land use and management to prevent land degradation are contributing to the future of sustainable agriculture in the State.

A 'perfect' model. Land Management Research and Agriculture branches have developed a cropping systems computer simulation model called PERFECT (Productivity, Erosion, Runoff, Functions to Evaluate Conservation Techniques). It is being used to assess the long-term impact of different conservation farming practices on runoff, erosion and crop yield.

Fisheries and Wetlands Management Program

Achievements

New Division created. The Division of Fisheries and Wetlands Management was created in September 1989 as a separate entity to address the significant and pressing issues of management and research not only of the fisheries resources themselves but also of the environmental resources supporting the Queensland fishing industry.

Fish-stocking groups grow. The number of community-based fish-stocking groups formed to ensure the continuation and encouragement of the successful fish-stocking program rose to 50. Several are considering establishing their own private hatchery operations.



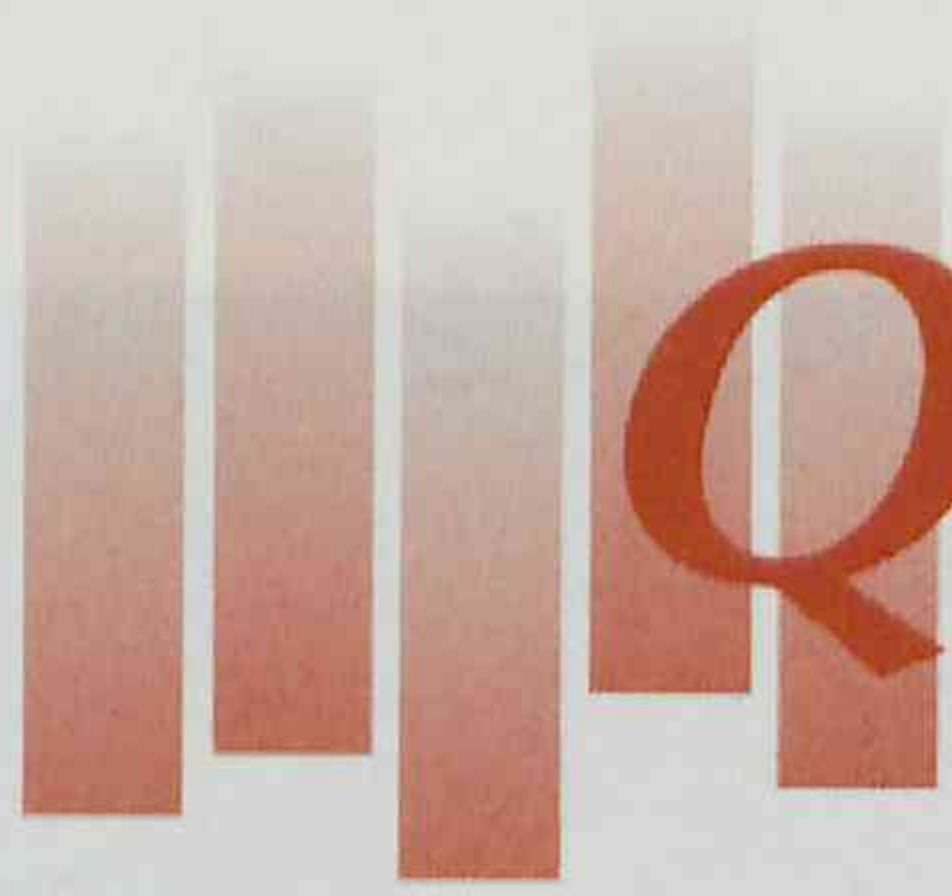
Two million hectares protected. The declaration of additional fisheries habitat and wetland reserves throughout Queensland brought total protected habitat to 2m ha - a milestone for fisheries protection. Investigations preceding the declaration of more reserves in 1990-91 are continuing.

Barramundi breeding breakthrough. A major breakthrough was made in spawning domesticated barramundi broodstock that had been held at two DPI fisheries research centres. Bill Rutledge, director of fish hatcheries of the Texas Parks and Wildlife Department, USA, helped demonstrate that suitably prepared external growout ponds can greatly enhance growth rates in comparison with growth rates of hatchery-reared barramundi fingerlings.

Aquaculture centre well advanced. The Bribie Island Aquaculture Centre, combining research, training and extension functions, is a key DPI initiative. The objective is to set up a world-class centre that focuses technological and human resource development in the Queensland aquaculture industry. The core components for research activity - comprising seawater and freshwater supplies, aeration plant and hatchery facilities - were completed in January 1990 and construction of a residential training centre and a controlled environment building began.

New Patrol base and vessels. A major office and operations complex was opened in Cairns to assist the Queensland Boating and Fisheries Patrol in north Queensland. Three new patrol vessels, commissioned to replace existing vessels, have enhanced the Patrol's efficiency in enforcing fisheries and marine laws.

Thirteen years of effort by botanists and illustrators culminated in the publication of Volume 3 of Flora of Southern-eastern Queensland in November 1989. Getting together to celebrate the event were (from left): Dr Bob Johnson (Botany Branch director), Estelle Ross (co-author), Will Smith (illustrator), Margaret Saul (illustrator), Trevor Stanley (co-author) and Gillian Rankin (illustrator).



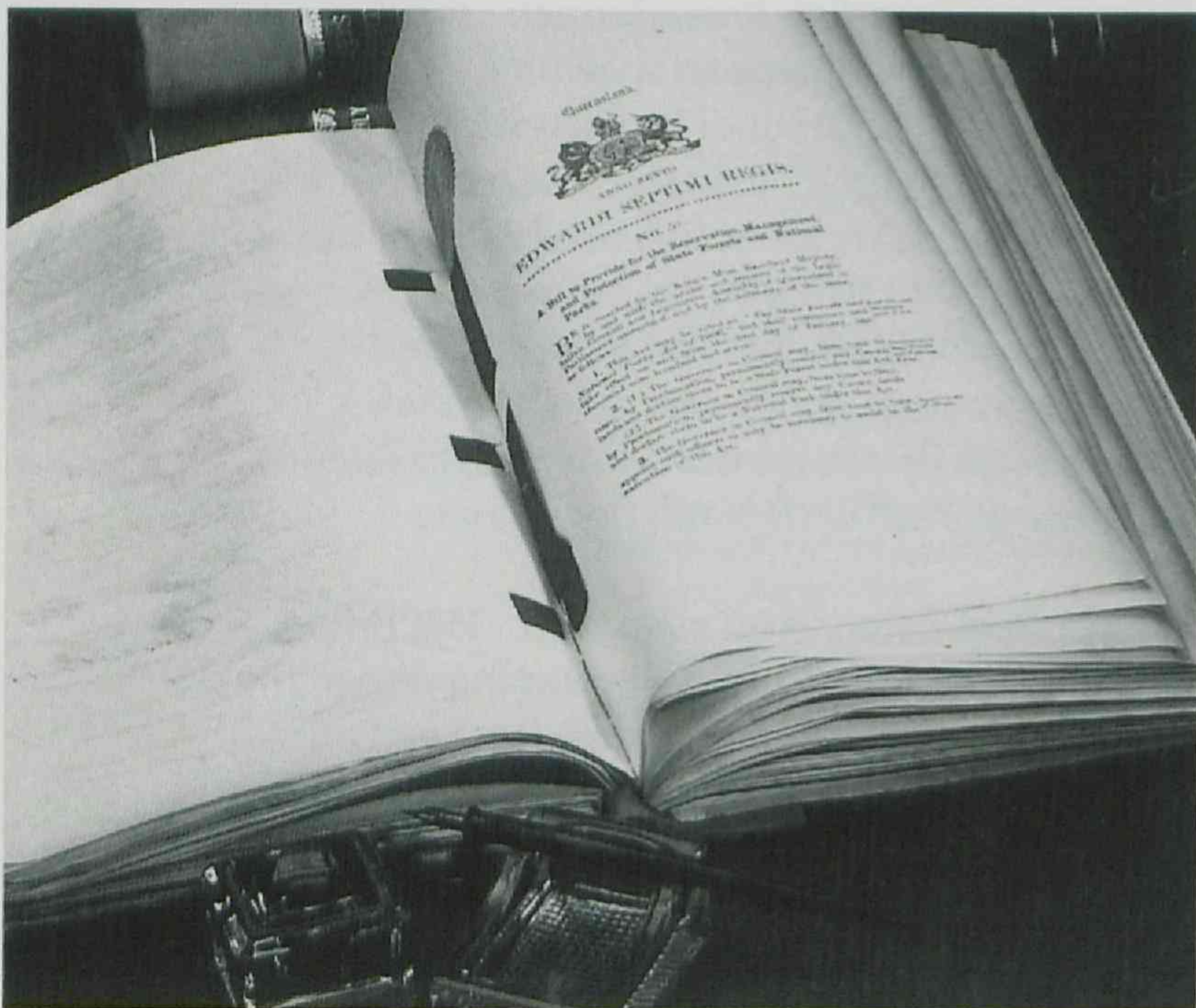
Queensland Forest Service

CONSTITUTION

A Forestry Branch of the Queensland Department of Lands was established in 1900 to make reservations of well-timbered land.

The first Director of Forests was appointed in 1905, and in the next year the *State Forests and National Parks Act of 1906* empowered the Governor-in-Council to permanently reserve Crown land as state forest or national park. Such reservations could be annulled only by an Act of Parliament.

Since the early 1900s, the management of forests on Crown land in Queensland has increased in scope and complexity as it responded to an evolving community recognition of the many commercial and social values that forests can supply.



Legislation passed by State Parliament in 1906 provided for the reservation of state forests and national parks.

The management of Queensland's state forests was vested in the Queensland Forest Service until 1957, when the Government of the day established the Department of Forestry. In 1959 the newly passed Forestry Act provided a comprehensive framework for state forest and national park management.

The responsibility for managing national parks in Queensland remained with the Department of Forestry until 1975, when control was passed to the State's newly-formed National Parks and Wildlife Service.

An Order in Council on 7 December 1989 placed administrative control of the former Department of Forestry within the Queensland Department of Primary Industries. The Queensland Forest Service has since evolved as a corporate group within the Department of Primary Industries.

Over the last 90 years, Crown land reserved as forest in Queensland has grown from nothing to a forest estate of about 4.5m ha, or about 2 ha for every resident.

The modern Queensland Forest Service has inherited a proud tradition of meeting society's needs from a renewable resource.

FUNCTIONS

Queensland Forest Service goals and activities are intended to reflect community aspirations for the public forest estate.

Purpose

The purpose of the Queensland Forest Service is the sustainable production of forest products and services within a balanced conservation program that includes the multiple-use management of state forest lands in accordance with the community's long-term best interests.

Goals

- To produce forest products in accordance with long-term community requirements.
- To ensure state forests are used and managed in an efficient, effective and environmentally responsible manner.
- To maximise community benefits arising from the management of state forests while ensuring a positive return on any investment funds utilised.
- To encourage and facilitate the long-term economic viability of the Queensland-based forest products sector.
- To encourage the development and sound management of private forest resources.
- To ensure a high level of community awareness of the values and diverse uses of trees and forests.

Program structure

Queensland Forest Service programs are the focus of all organisational endeavours, and all financial inputs and outputs are accounted against them.

The programs with their subprograms are outcome-oriented and derive their charters from organisational goals relating to the production of forest products and the provision of forest-based services.

For 1989-90, the Forest Service program structure had four major components and several sub-components.

Program	Subprogram
Native Forest Production	Hardwood Cypress Rainforest
Plantation Production	Exotics Native
Other Resource Sales	Other Crown Forests Consultancies Quarry Materials Sales
Forest Services	Recreation Forest Extension Timber Utilisation Extension

MANAGEMENT PRINCIPLES

Strategic planning

The need to separate clearly between commercial and social goals is recognised in the Queensland Forest Service's strategic planning process. Establishing and adhering to certain key principles were fundamental to developing and implementing a suitable program management framework. Those principles involved:

- carefully defining Forest Service programs;
- developing financial goals that recognise the social benefits flowing from otherwise commercial operations; and
- developing sound practice indicators to ensure that all forest management practices are conducted to a specified standard.

Program management overlays the Forest Service's organisational structure, which is broadly segmented along traditional work unit lines to avoid duplicating support services.

Funding strategies

To achieve its financial goals in program areas, the Queensland Forest Service commits itself to maintaining clearly separated funding for commercial and social programs. This funding strategy follows the principles set out below.

- Revenues generated within individual programs are used to finance activities within those programs as far as possible.
- Revenues in excess of expenditure in any program can be used to fund projects in other programs provided predefined criteria for project acceptance are met and the commercial/non-commercial separation is maintained.

When total annual revenues in commercial programs exceed all costs, the excess revenue is returned to the Queensland Treasury as a dividend on investment in forest development.

QUEENSLAND FOREST SERVICE ORGANISATION



The executive team (from left seated): Peter Cranny and Tom Ryan; (from left standing): Norm Clough, Terry Johnston and Neil Flynn.

Tom Ryan, B.Sc. (For) (Hons), Dip.For.
Conservator of Forests and Executive Director
Queensland Forest Service

Peter Cranny,
B.Sc. (For), Dip.For.
Deputy Conservator
Production

Regional Director
SE Region
Regional Director
NW Region
Marketing
and Yield Regulation
Forest Development
Fire Protection
Engineering Services

Terry Johnston,
B.Sc. (For), Dip.For., M.Nat.Res.
Assistant Conservator
Strategic Services

Program Management
Economics
Management Audit
and Review

Norm Clough,
B.Sc. (For), Dip.For.
Assistant Conservator
Technical Services

Forest Research
Timber Research
and Extension
Land Use
and Information
Information Technology
Survey and Mapping
Consultancies

Neil Flynn,
B.Com., A.A.U.Q., C.P.A.
Assistant Conservator
Corporate Services

Financial Management
Financial Investigations
Estates and Legislation
Personnel Services
Administrative Services

OPERATING PHILOSOPHY

These basic beliefs are inherent in all Queensland Forest Service activities and are accepted as a code of conduct.

Staff are the Forest Service's most important asset. Human resource management emphasises personal development within a program achievement context.

Customers. Satisfying customers' requirements is a fundamental Service aim. Clients are highly valued, and every effort is made to provide timely quality products and services at reasonable prices.

Management style. Responsible and participative management is promoted and calculated risk-taking by managers encouraged. Results are recognised as the appropriate measure of performance.

Land use planning and management. The Forest Service is committed to the sustainable multiple-use management of state forests and believes that land management decisions should take account of community attitudes.

Responsibility as citizens. Forest Service staff are encouraged to fulfil their responsibilities as members of the communities in which they operate, and to manage their affairs - both individually and as members of the Forest Service - with integrity and excellence.

REVIEW OF OPERATIONS

Native Forest Production Program

Description. The Native Forest Production Program focuses on the sustainable production and sale of forest products (excluding quarry material) from natural forests contained within the permanent Crown reserves comprising state forests throughout Queensland. At 30 June 1990, 3 978 321 ha of state forest were managed under this program.

Goals

- To efficiently and effectively manage reserved native forest for sustainable timber production while ensuring that the broader State requirements for protection of water catchments and maintenance of other forest values and benefits are met.
- To ensure for each subprogram that annual net revenues are maximised and that revenue is at least equivalent to costs.
- To contribute to the development and long-term viability of efficient native forest based processing industries in Queensland.

Key result areas

Sustainable timber production is a subset of ecologically sustainable forest management.

Factors that contribute to ecological sustainability include:

- logging systems that are compatible with the silvicultural characteristics of the forest, especially with the regeneration cycle;
- adequate protection of streams and other watercourses by the retention of buffer strips;
- exclusion from logging of sensitive slopes, soils, habitats and landscapes;
- exclusion from logging of special management areas for scientific reference, feature protection and recreation;
- pre-operational logging planning to control site disturbance through the location and drainage of roads, snig tracks and loading ramps; and
- minimising disturbance to the residual stand through treemarking.

The essential consideration in the sustainability of forest management systems is whether the management strategies can maintain the forest ecosystem in an ecologically sustainable way that ensures the continued viability of biological communities, the maintenance of forest values and the preservation of genetic diversity.

Indicators of sustainability are being developed, covering areas such as:

- the percentage of logged stands effectively regenerated;
- fire losses expressed as a percentage of the total estate;
- incidence of indicator weed species, pathogens and insect pests; and
- trained observer ratings of current field operations.

Water catchment protection. Forest cover influences the quality and quantity of water flowing from catchment areas. Success in preserving water-catchment values depends on the forest cover and on controlling soil disturbance during logging.



Good roads help keep forests healthy. Regular maintenance of the Service's thousands of kilometres of forest roads ensures access for inspection and firefighting, and also for the public to enjoy its native forests. Here, a new Forest Service road grader is trialled in Daisy Hill State Forest near Brisbane, with Forest Ranger David Pengelly directing operations.

Other values and benefits. The success of production management, as one of the components of a multiple-use management style, is linked to maintaining other forest values and benefits such as forested landscape values, habitat values, honey production, and the educational values of the forest.

Efficient operations. Key expenditure components in this program relate to marketing and protection costs. Marketing costs per cubic metre of timber harvested and fire protection costs are indicative performance statistics.

Net revenue maximisation. The goal of maximising net revenue has enabled the Forest Service to argue successfully for native forest royalty increases for the first time in many decades.

Sales policies and procedures. The consequences of recent royalty increases are twofold: firstly, they acknowledge the increasing pressures being placed on native forests to supply a range of benefits; secondly, such increases allow the native forest milling industry to become more efficient and direct greater attention to higher value-added products.

Supply commitments. The Forest Service contributes to the development and viability of processing industries by seeking to maintain a stable supply of timber from Crown native forests. Mills processing Crown sawlogs have 20-year supply agreements and 5-year resource entitlements with annual performance targets.

Performance indicators

EXPANSION OF SPECIALISED MANAGEMENT AREAS (gazetted hectares)						
	1985-86 & previous	1986-87	1987-88	1988-89	1989-90	Totals
Feature protection areas	**5 790	-	16	-	2	5 808
Forest drives	na	-	-	-	19	19
Scientific areas	13 123	4	2 609	2 160	2 751	20 647
State forest parks	-	435	-	81	47	563
	18 913	439	2 625	2 241	2 819	27 037

** Formerly beauty spots

NATIVE FOREST PRODUCTION PROGRAM

	1988-89	1989-90
Revenue	\$6 497 638	\$8 071 507
Expenditure	\$11 363 291	\$11 414 875
Revenue/ expenditure ratio	0.57	0.71

Achievements. The revenue/expenditure ratio for the program improved markedly on the 1988-89 performance: from 0.57 to 0.71. This reflects the results of goal-oriented management.

After negotiations between members of the Queensland Timber Board's relevant divisions and the Forest Service, agreement was reached on real increases in mill-log stumpages and royalties from 1 September 1989. Hardwood royalty increases of \$8 a cubic metre are being phased in by 1 January 1991 for hardwood and 1 January 1992 for cypress.

Plantation Production Program

Description. The Queensland Government began its plantation establishment program in 1921. The native species hoop pine was chosen for plantation purposes. However, the shortage of suitable land prompted the introduction of more adaptable exotic softwood species several years later.

These plantations were intended to help develop a broad industrial base for the State, while creating regional employment opportunities for its people.

To date, a total plantation resource of 173 000 ha has been established, using technology derived from an extensive research and development program. Processing industries are based on the resource's thinnings component, and in recent years the valuable final-crop harvest from large plantations has been committed to long-term sale agreements.

Goals

- To contribute to the development and long-term viability of efficient wood based industries in Queensland by establishing and managing forest plantations, and adopting appropriate sales, pricing and long-term supply policies.
- To ensure that plantations on state forests are established and managed in an environmentally responsible manner.
- To maximise the return to the State from funds invested in plantations while ensuring a minimum return on investment of 3% real.

Key result areas

Plantation area. The setting of regional planted-area targets is a key strategy in the Plantation Production Program, although the limited availability of suitable land is a constraint on any large-scale expansion. With the maturing of the plantations and an increasing amount of first-rotation resource being committed to long-term supply agreements, the program's development phase is nearly completed. Replanting of harvested areas rather than establishing new plantations is being increasingly emphasised.

Sales and pricing policies. The main proviso on recent sales has been that the resource be processed within the State. This has led to major industry investment in Queensland in the last decade. Total supply guarantees from existing plantations to local wood processing industries now exceed 1.1m m³ a year. This will rise to about 1.5m m³ by the year 2000.

Supply commitments. Major plantation sales in Queensland are subject to separate agreements usually covering a 20-year duration. These agreements are based on competitive proposition calls. All buyers are subject to minimum performance clauses.

Environmental integrity. Detailed environmental guidelines ensure appropriate planning during plantation development. The degree of observance of guidelines in operational practice is the measure of success in achieving the goal of environmental responsibility.

Return from invested funds. The concepts of internal rate of return and net present value have been adopted as microeconomic planning tools for silvicultural decision-making.

Conceptually, return on investment can be interpreted in a variety of ways and the Forest Service is negotiating appropriate performance measures that may include return on costs, return on gross revenue or return on equity. The annual calculation of plantation value using discounted cash-flow methodology is an important

component of the performance equation in the Plantation Production Program.

The Forest Service has compiled indicative valuations for its plantation estate for both 1988-89 and 1989-90 using this discounted cash-flow procedure. While the methodology has still to be refined and ratified, the present standing value of the overall plantation estate is estimated at \$966m. This compares with an estimated valuation in 1988-89 of \$880m.

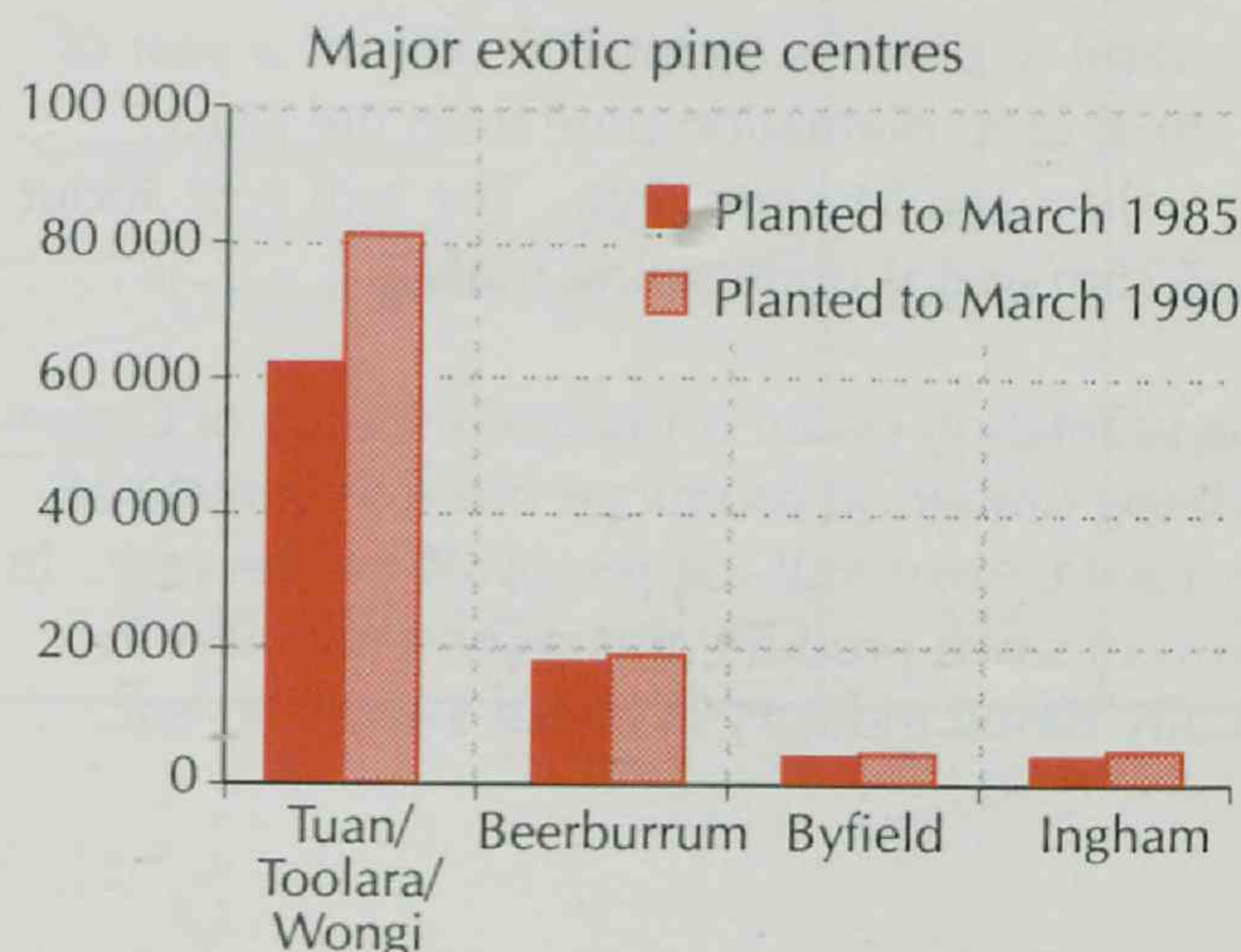
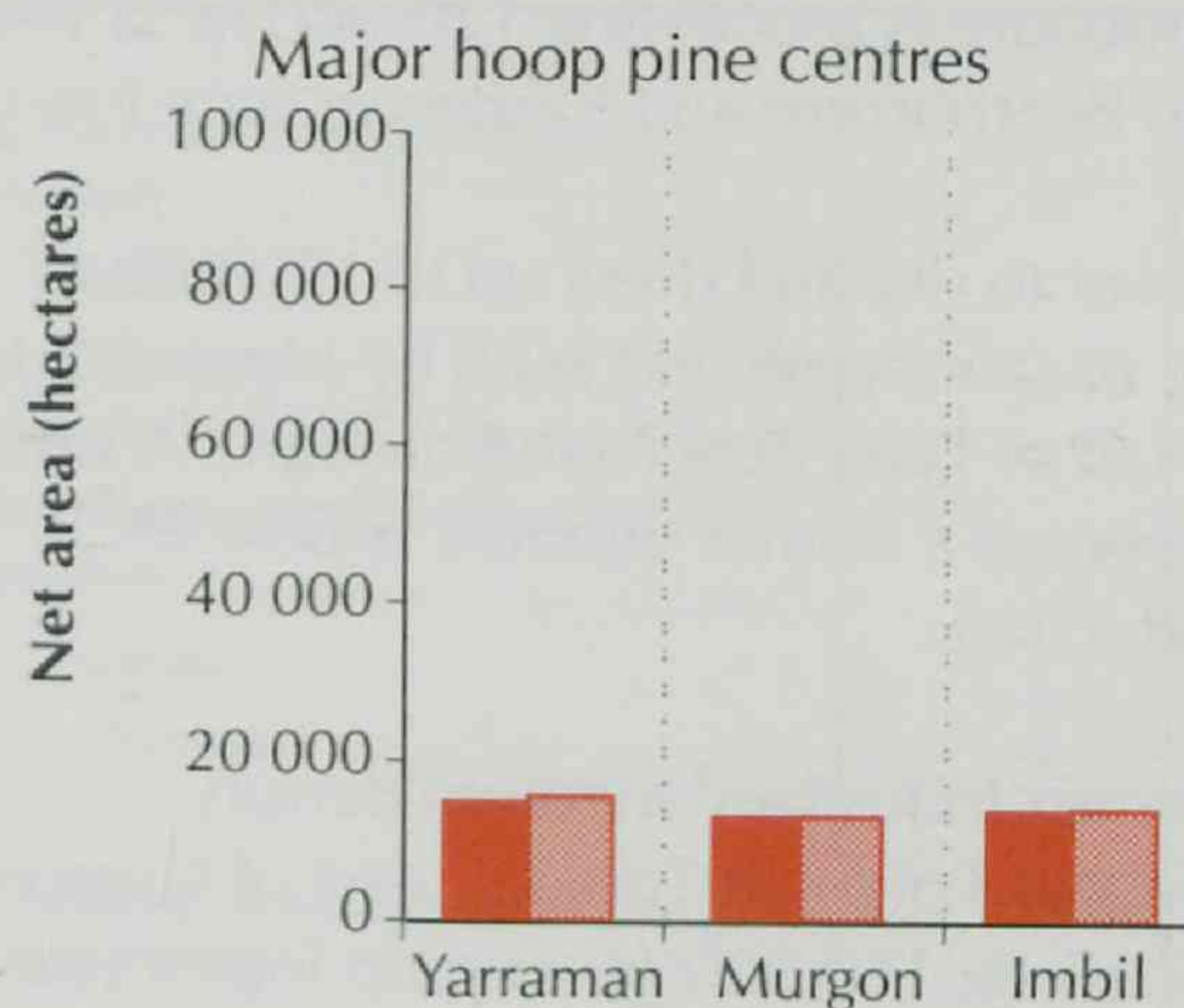
Performance indicators

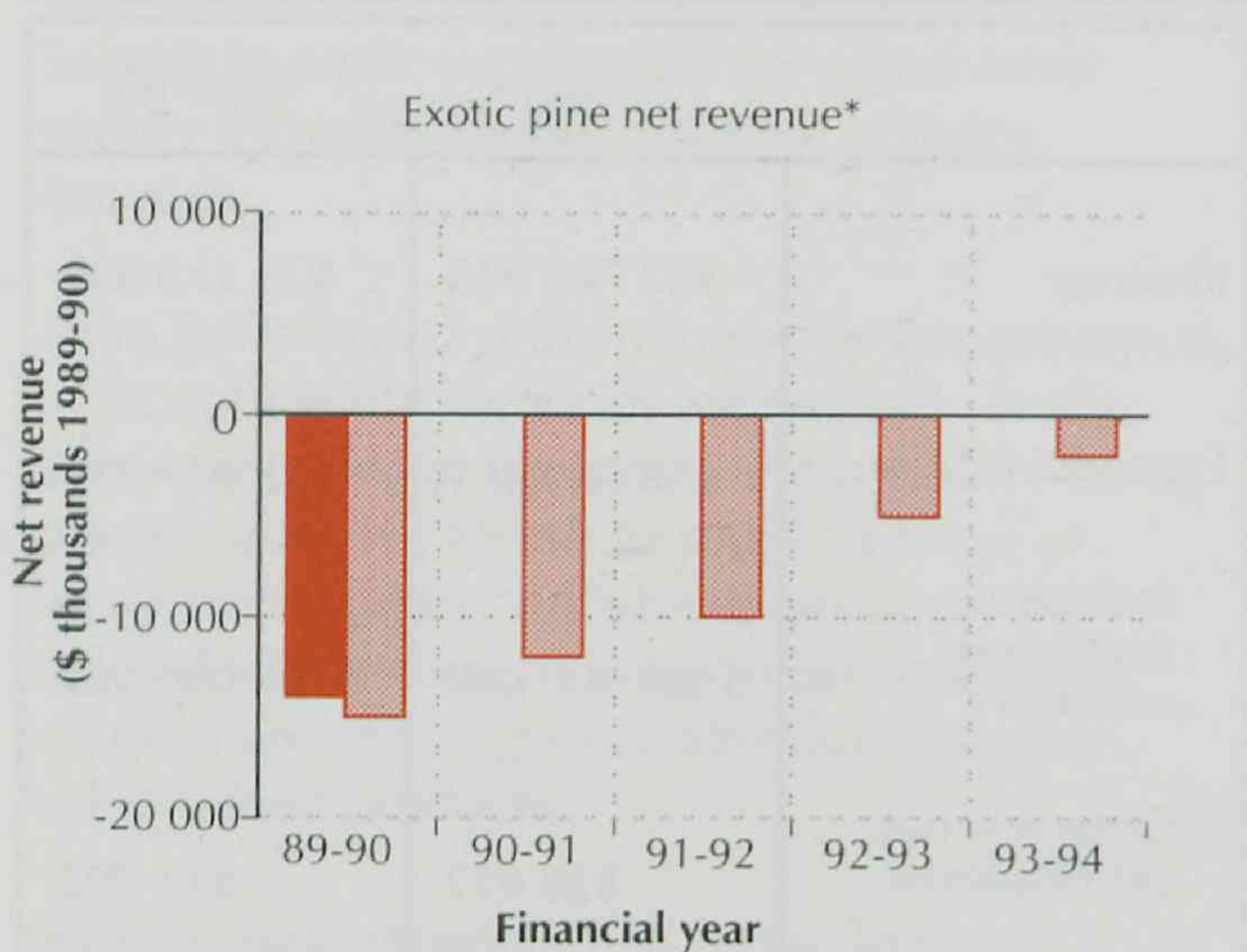
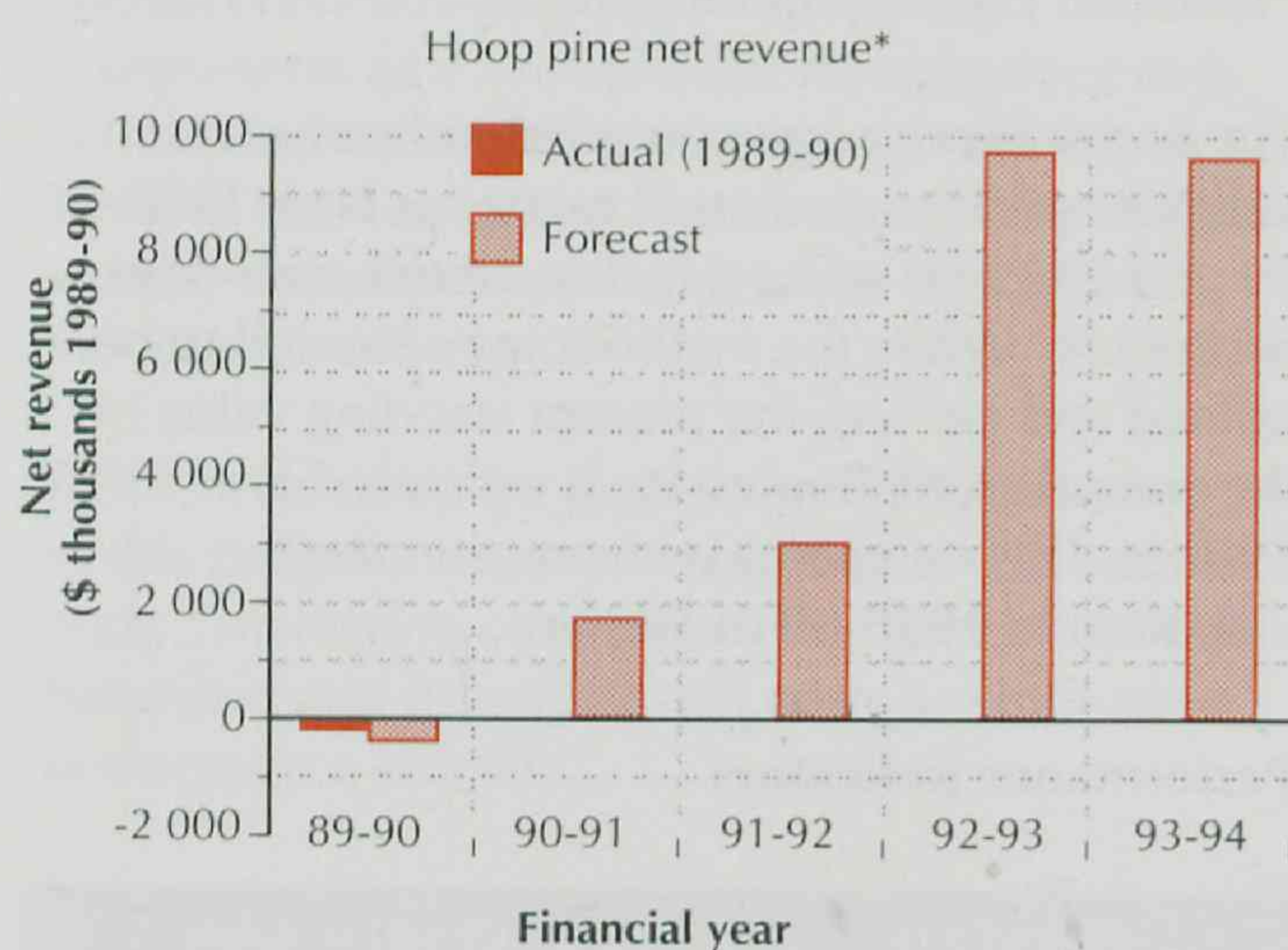
PLANTATION PRODUCTION PROGRAM		
	1988-89	1989-90
Revenue	\$22 725 946	\$25 235 859
Expenditure*	\$38 009 481	\$38 817 753
Indicative plantation valuation**	\$880 000 000	\$966 000 000
Gross revenue per employee	\$28 022	\$31 792

* Expenditure excludes debt service charges and asset management.

** Using discounted future cash flow methodology.

THE PLANTATION ESTATE (MAJOR CENTRES)





* Net revenue = gross revenue - expenditure (excluding debt service charges)

Achievements. Some industry developments based on the plantation estate are set out below.

- CSR Softwoods' high-technology mill at Caboolture is processing 120 000 m³ a year from Beerburrum and Yarraman state forests.
- A plant to dry and dress up to 120 000 m³ a year of sawn pine was built by Hyne & Son Pty Ltd at Tuan near Maryborough. A sawmill to process a similar quantity is now in production.
- Laminex Industries' medium density fibreboard plant at Toolara, east of Gympie, is processing 160 000 m³ of pulp logs a year.
- ACI Timber Products has built a sawmill at Imbil to process about 100 000 m³ a year of final crop plantation pine from the Mary Valley and Murgon area. The mill cost about \$25m and is undergoing trials.

The plantation estate is the main source of Crown mill-log timber. It produced more than 62% of the total Crown mill-log removals for the year. In terms of sawn product, this represents sales for locally based industry of about \$400m a year.

Other Resource Sales Program

Description. This program consists of three subprograms: Other Crown Forests, Consultancies and Quarry Materials Sales, all of which are commercially oriented.

OTHER CROWN FORESTS SUBPROGRAM

The Forest Service has no charter to manage directly the native forests growing on Crown lands other than state forests. Its role is limited to supervising and controlling the harvesting of forest products from these areas in an environmentally responsible way.

Goals

- To harvest forest products from specified Crown lands in accordance with the long term needs of the community, while taking into consideration the reasonable land use management requirements of the agencies in which the land is vested.
- To ensure forest harvesting operations are carried out in an efficient, effective and environmentally responsible manner.
- To supplement the resource needs of Queensland-based forest-product processing industries by promoting the retention of forest areas and the maintenance of forest productivity.
- To ensure that annual net revenues from forest product sales are maximised and that revenues are at least equal to costs.

Key result areas

Forest products harvesting. Success in this result area is measured by the extent to which harvesting of forest products from other Crown lands contributes to the sawmilling industry's resource needs.

Efficient harvesting operations. The bulk of the Service's expenditure in this subprogram is marketing costs. A key performance statistic is therefore marketing cost per cubic metre of timber harvested.

Net revenue maximisation. As in the Native Forest Production Program, the Service supplements cost-control measures with real royalty increases negotiated with industry. Success in this key result area is measured by the revenue-expenditure ratio for the subprogram.

Performance indicators

OTHER CROWN FORESTS

	1988-89	1989-90
Revenue	\$3 024 485	\$2 142 335
Expenditure	\$1 906 969	\$1 868 660
Revenue/ expenditure ratio	1.59	1.15
Total removals from other Crown forests	na	87 742 m ³ *
Removals from other Crown forests as a percentage of total Crown native forest removals	na	21.8%*
Marketing costs per cubic metre of wood sold	na	\$12.66

* Estimate only

Achievements. The impact of program management procedures is evident in the expenditure recorded against the Other Crown Forests Subprogram, which achieved a real reduction in costs of 8.9%.

CONSULTANCIES SUBPROGRAM

Forest Service staff have expertise in a variety of forestry and forest products areas. Significant demand exists from other forest management agencies for access to these skills. The Consultancies Subprogram is the vehicle through which the Service capitalises on this demand.

Goals

- To be recognised as a major source of technical, professional and educational expertise in tropical and subtropical forest management.
- To enhance the expertise and qualifications of Forest Service staff through participation in consultancies.
- To ensure revenues exceed costs by at least 10% on an individual project basis, except when significant benefits are generated for the Forest Service.

Key result areas

Professional recognition. Apart from the obvious commercial implications, the Service's recognition as a major source of professional and technical expertise has other advantages, including enhanced staff reputation, increased job satisfaction for staff and fuller use of resources. Performance can be measured by the number and variety of consultancies undertaken.

Education and training. The Service also provides a forest-based education and training service to the Australian and overseas community through the Forestry Training Centre at Gympie. Performance is measured by usage and occupancy rates.

Staff expertise. Job-skill benefits and expertise derived from an active Consultancies Subprogram are substantial. The measure of performance is the number of staff participating in consultancies projects.

Net revenue maximisation. The financial goal is framed in terms of a 10% return on expenditure on an individual project basis. However, as costs cannot be captured on an individual project basis, the defacto performance indicator becomes the revenue-expenditure ratio for the subprogram.

Performance indicators

CONSULTANCIES

	1988-89	1989-90
Long-term consultancies undertaken (number)		
Locally	8	10
Overseas	1	2
Short-term consultancies undertaken (number)		
Locally	1	2
Overseas	5	6
Staff involved in consultancies (man months)		
Long-term projects	174	162
Short-term projects	6	7
Gympie Training Centre		
Accommodation (man nights)	7655	8542
Conference hire	\$22 340	\$28 500
Revenue	\$2 161 929	\$2 054 370
Expenditure	\$1 886 146	\$2 014 872
Revenue/expenditure ratio	1.15	1.02

Achievements. The successful completion of the Dongmen State Forest Farm Eucalypt Afforestation Project in the People's Republic of China after 8 years was a major achievement. This project was the first long-term project managed by a Queensland Government organisation for the Australian International Development Assistance Bureau, and successfully demonstrated the benefits of adapting new species and techniques to eucalypt plantation forestry in China.

QUARRY MATERIALS SALES SUBPROGRAM

The Forest Service controls quarrying operations on state forests and on a range of other Crown lands. With the State's continued regional economic development, quarry materials removals are expected to increase.

Goals

- To ensure that all quarrying operations controlled by the Forest Service are conducted in accordance with approved environmental standards.
- To ensure that, as far as possible, adequate supplies of suitable quarry material are available from Crown land, to assist in the long-term regional development of the State.
- To maximise net revenue from quarry sales without impeding the State's economic development.

Key result areas

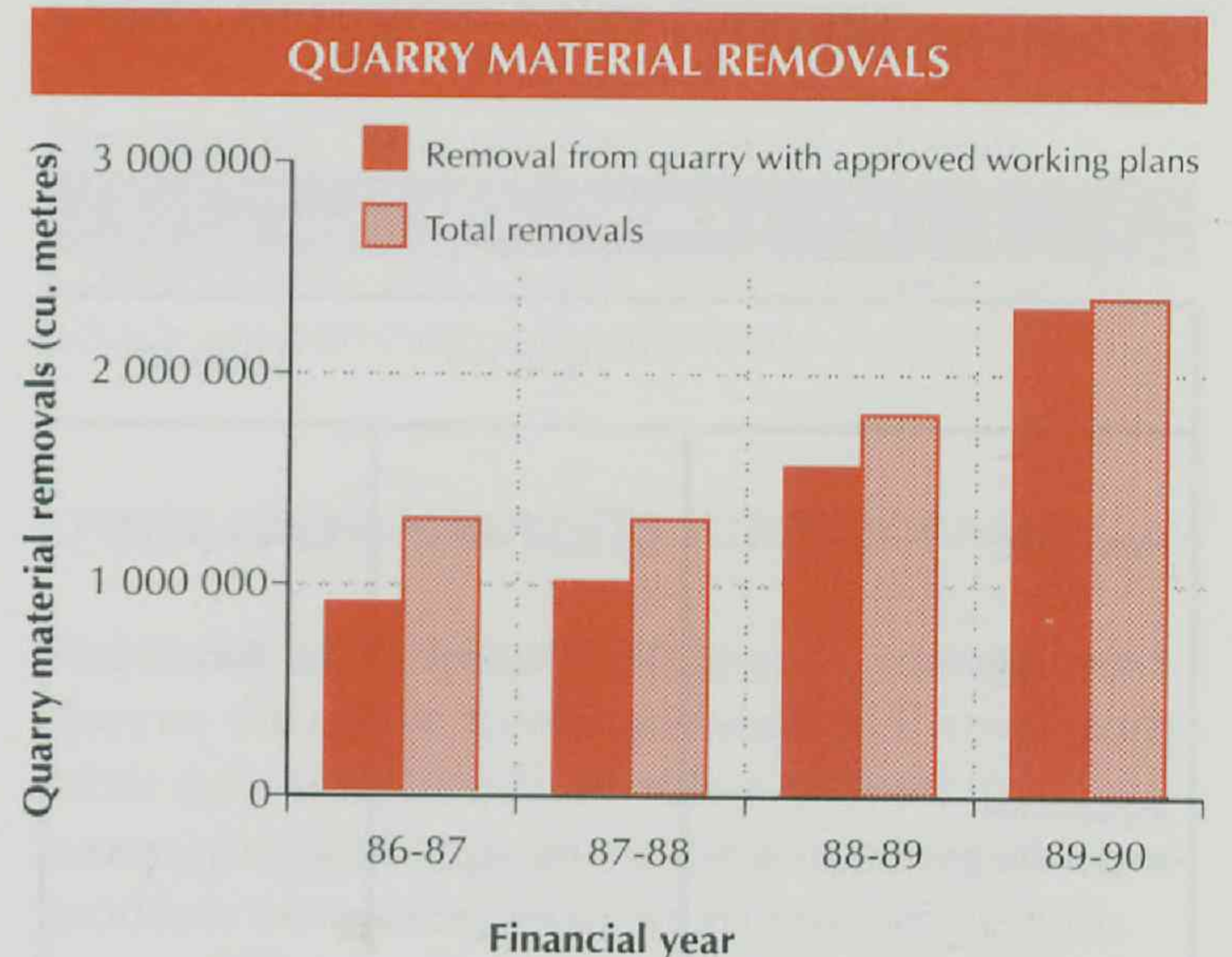
Environmental standards. Success is achieved through implementing environmental standards.

Quarry resource development. Performance is measured by the number of operating quarries and their capacity to supply the State's needs, and by the level of activity in searching for new resources of quarry material.

Net revenue maximisation. Performance guarantees and competitive tendering are required for all major quarry sales. Revenue-expenditure ratio for the subprogram is the performance measure.

Performance indicators

QUARRY MATERIALS SALES		
	1988-89	1989-90
Revenue	\$1 127 425	\$1 686 567
Expenditure	\$363 412	\$452 571
Revenue/ expenditure ratio	3.10	3.73



Achievements. Quarry material removals from Crown lands increased by 33% in 1989-90 to a record 2.16m m³. The revenue-expenditure ratio for the subprogram registered a commensurate increase: from 3.10 to 3.73.

Forest Services Program

Description. This program is concerned with the Forest Service's non-commercial or socially oriented functions. It consists of three subprograms: Recreation, Forest Extension and Timber Utilisation Extension.

RECREATION SUBPROGRAM

The Forest Service has developed and currently manages 66 State Forest Parks throughout Queensland. All of the parks provide picnic facilities, and 38 provide camping facilities of varying standards.

Goals

- To satisfy community demand for quality nature-based recreation opportunities on state forests, having regard for the other management objectives for these forests.
- To enhance public awareness of the natural and cultural values of state forests and the community benefits that accrue from the multiple-use management of these forests.
- To apply the 'user pays' principle where the direct beneficiary of the service is identifiable and fee collection is cost-effective.

Key result areas

Recreation opportunities. The Forest Service gives priority to providing those recreation opportunities that are unique to state forests. Results are measured in terms of the number and type of existing recreation facilities.

Values and uses. Success can be measured by how well activities under this subprogram integrate with the other values and uses of the forest areas in which they are located. A measure of performance is the number of recreation plans developed.

State forest values. Community understanding of state forest values is measured by the number of visitors to recreation areas and the number of camping permits issued.

'User pays' principle. The Service's ability to continue to provide quality recreation facilities for the public depends on its being able to recoup a percentage of total expenditure outlays. Results are measured in terms of the relationship between expenditure and revenue in the subprogram.

Performance indicators

RECREATION STATISTICS		
	1988-89	1989-90
Number of recreation facilities		
Camping areas	38	38
Day use areas	66	67
Forest drives	12	12
Walking tracks	53	53
Estimated annual visitation		
Day users	1 200 000	1 240 000
Camper nights	400 000	405 000
Camping permits issued	15 972	16 266
Subprogram revenue & expenditure		
Revenue	\$85 028	\$1 591 966*
Expenditure	\$2 861 798	\$4 513 011*
Revenue/ expenditure ratio	0.03	0.35
Recreation plans completed	1988-89	1989-90
	Fraser Is Interpretation Fraser Is Management Plan Central Station Eli Creek Lake Mackenzie Conondale Scenic Rim Palmerston Beerburum Imbil	Northbrook Daisy Hill D'Aguilar Tinbeerwah Tuan Yarraman (draft) Wet Tropics (draft) Atherton Tinaroo Dam

* Figures for 1989-90 include Brisbane Forest Park revenue of \$1 298 521 and expenditure of \$1 014 452

Achievements. The predominant achievement in this subprogram in 1989-90 was the developing and adopting of concise goals and strategies upon which to focus future effort.

Recreation facilities were constructed or redeveloped at Central Station (Fraser Island),

Booloumba Gorge (Conondale Range), Mt Tinbeerwah (Noosa hinterland), Tinaroo Dam and Wongabel (Atherton), Goomburra (Warwick) and the Glasshouse Mountains.

Commercial tour operations on state forest increased, particularly in north Queensland. This is resulting in improved forest-based experiences for the community.

FOREST EXTENSION SUBPROGRAM

Two of the Forest Service's primary goals are to ensure a high level of community awareness of the values and diverse uses of trees and forests, and to encourage the development and sound management of private forest resources. These primary goals are addressed in this subprogram.

Goals

- To maintain and improve the quality of the rural environment by encouraging and facilitating the planting, care and retention of trees and the rehabilitation of degraded land, and by promoting the role of trees and forests in sustainable land management.
- To encourage the development of private commercial forestry resources throughout the State to supplement timber supplies from state forests and other Crown lands.
- To apply the 'user pays' principle where the direct beneficiary of the service is identifiable and fee collection is cost effective.

Key result areas

Tree planting, care and retention. Forest Service initiatives in this key result area include provision of tree seedlings, extension advisory services through field officers, a computer-based tree advisory service, public education and tree research programs. Success is measured by the number of plants sold through Service nurseries.

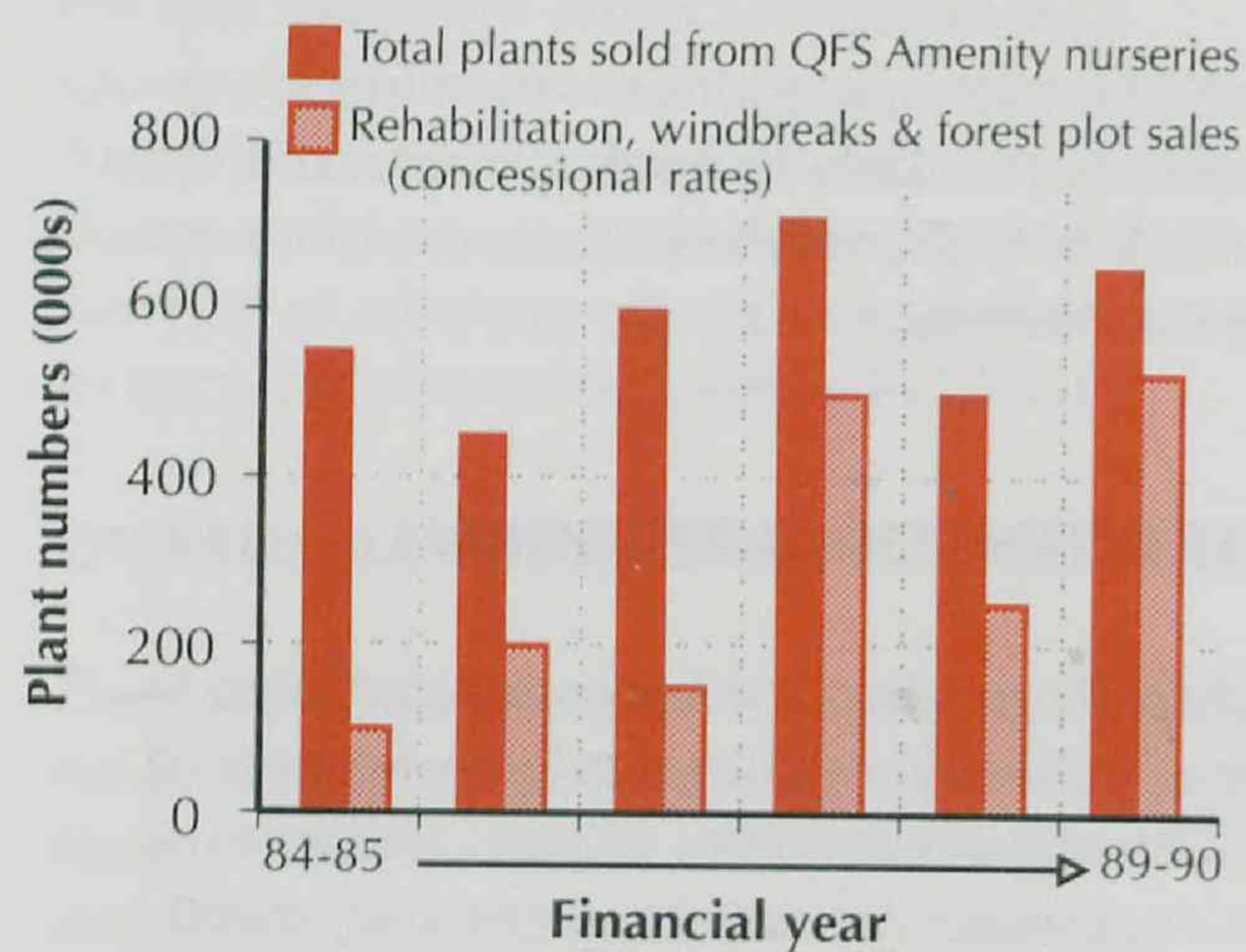
Degraded land rehabilitation. Regional extension officers located throughout the State provide on-farm advice in relation to tree farm plans, tree-planting techniques and species selection. A measure of performance for this area is the number of farm visits by extension officers.

Private commercial forestry assistance is provided through seedling sales at concessional rates for establishing forest plots and windbreaks. Success in this goal is indicated by the volume of such sales.

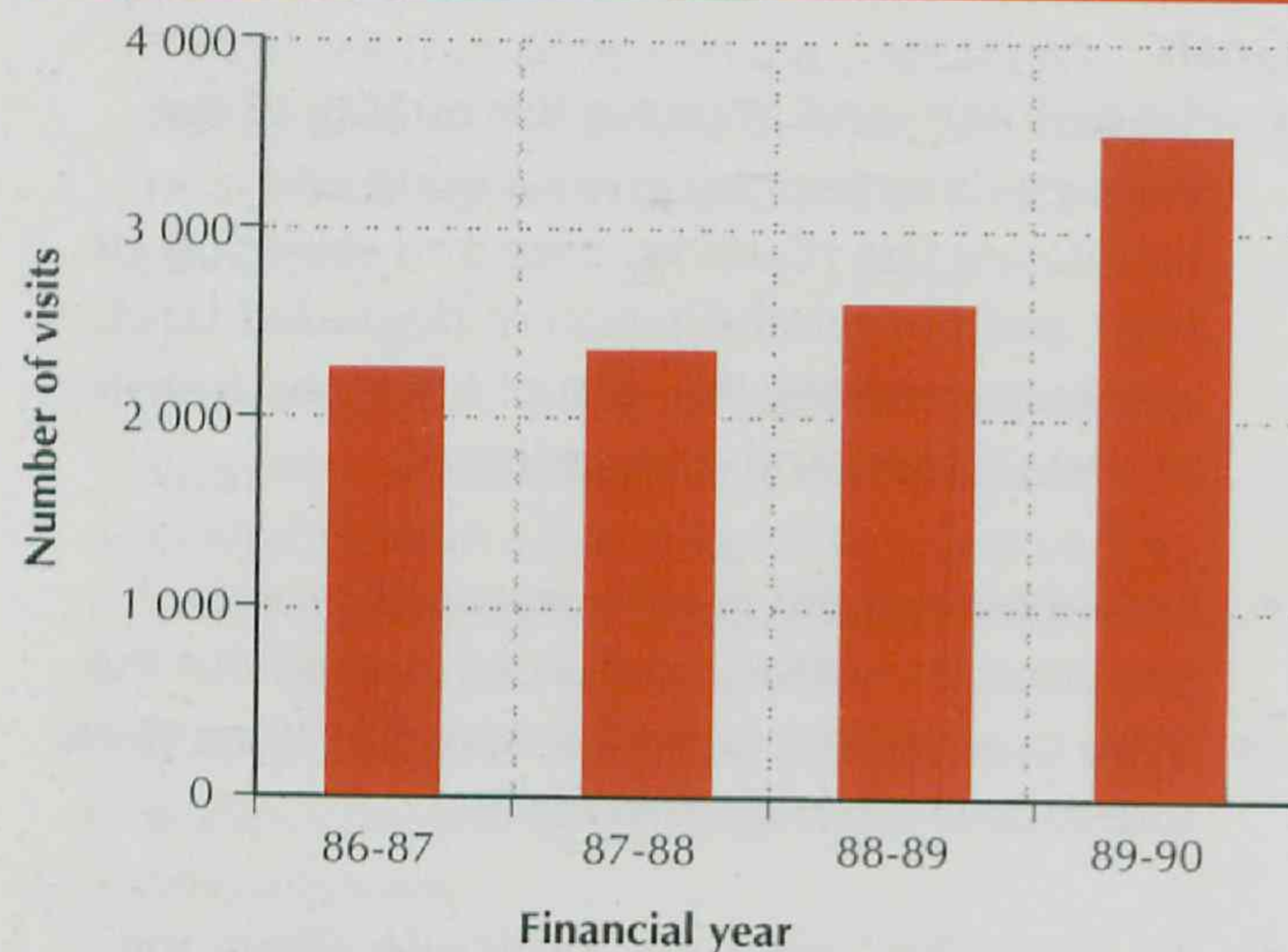
'User pays' principle. Results are measured in terms of the relationship between expenditures and revenues in this subprogram.

Performance indicators

PLANT SALES FROM AMENITY NURSERIES



NUMBER OF FARM VISITS FOR TREE ADVICE



Achievements. At Atherton, the Forest Service is carrying out research work on the growth of rainforest trees in plantations, using Australian Rural Research Centre funds. A growth rate of 6 m in 11 months was obtained with red cedar (*Toona australis*) using 'Growtube' artificial tree shelters. The research was featured in the popular television series *Beyond 2000*. The appointment of five extension officers and a systems officer allowed the Forest Service's 'Caring For Our Countryside' project to begin its work of providing sound advice to the rural community on retaining, replanting and regenerating trees to complement sustainable agricultural production.

TIMBER UTILISATION EXTENSION SUBPROGRAM

'After market' considerations are important in ensuring that the community receives the maximum benefit from the State's timber resources. The encouragement of a technically competent, stable and profitable timber processing sector is an essential element of this strategy.

Goals

- To effectively contribute to the protection of timber users in Queensland.

- To provide effective timber research and advisory services based on the requirement of the timber processing industries.
- To provide an effective advisory service to the public on relevant aspects of timber utilisation.
- To apply the 'user pays' principle where the direct beneficiary of the service is identifiable and fee collection is cost effective.

Key result areas

Regulatory action and advice on defective timbers and on pests affecting timber are the main areas of activity relating to this result area. Results are measured in terms of the number of complaints processed by the Forest Service under the Timber Utilisation and Marketing Act.

Research and advisory services. The effectiveness of research and advisory services supplied to industry is measured by the number of activities undertaken for which the industry is prepared to pay.

Effective public advisory services. Performance is measured by the number of telephone enquiries received.

'User pays' principle. The relationship between expenditures and revenues provides the measure of performance.

Performance indicators

Achievements. During 1989-90 more than 6000

TIMBER UTILISATION EXTENSION

	1988-89	1989-90
Revenue from major 'fee for service' activities		
Timber Inspections	\$12 000	\$14 700
Sale of timber samples	\$4 400	\$5 900
Mechanical testing of timber	\$4 500	\$5 500
Chemical testing	\$21 800	\$21 600
Industry training	\$4 300	\$13 000
Pathology/entomology services	\$4 700	\$2 800
Timber seasoning	\$3 400	\$1 900
Miscellaneous	\$29 928	\$7 670
Total revenue	\$85 028	\$73 070
Subprogram expenditure	\$819 385	\$1 613 245
Revenue/expenditure ratio	0.10	0.05
Extension enquiries	6050	6000
Complaints received under the Timber Utilisation Act	28	20

Note. Subprogram expenditure in 1989-90 includes an expenditure of \$422 870 on the eradication of West Indian drywood termites in several locations.

timber users and specifiers accessed advisory and research services in areas such as wood property determination, timber seasoning, timber preservation and timber performance in service. Advisory services are generally provided free of charge, while most research is conducted either on a fee-for-service basis or to develop back-up information for advisory services.

Agricultural Production Group

CONSTITUTION

Background

The productive capacity of Queensland agricultural enterprises reflects the fertility of soils, the productivity of pastures and crops, and the capacity of herds and flocks to convert feeds and forages to quality end products. The DPI engages in these issues through integrated programs of research, extension and regulation.

Within the new Department, the Agricultural Production Group is responsible for providing professional, objective advice on agricultural production to the Minister and other members of the Government. In addition to emphasising productive capacity, the Group provides a focus for industry and community liaison, and facilitates legislative review and regulatory administration.

Status

Formalised in June 1990, the Agricultural Production Group encompasses the Division of Animal Industry and the Division of Plant Industry, and the former Department's Technical Services Branch. Dairy Husbandry and Animal Breeding Branch and the Natural Disaster Relief Secretariat joined Animal Industry. Veterinary Public Health Branch and the Plant and Animal Quarantine Service transferred to the Agricultural Marketing and Development Group. Botany Branch moved from Plant Industry to the Division of Land Management within the Land Use and Fisheries Group. The Agricultural Biotechnology Centre, being developed on the University of Queensland's St Lucia campus, is to be administered by Agricultural Production.

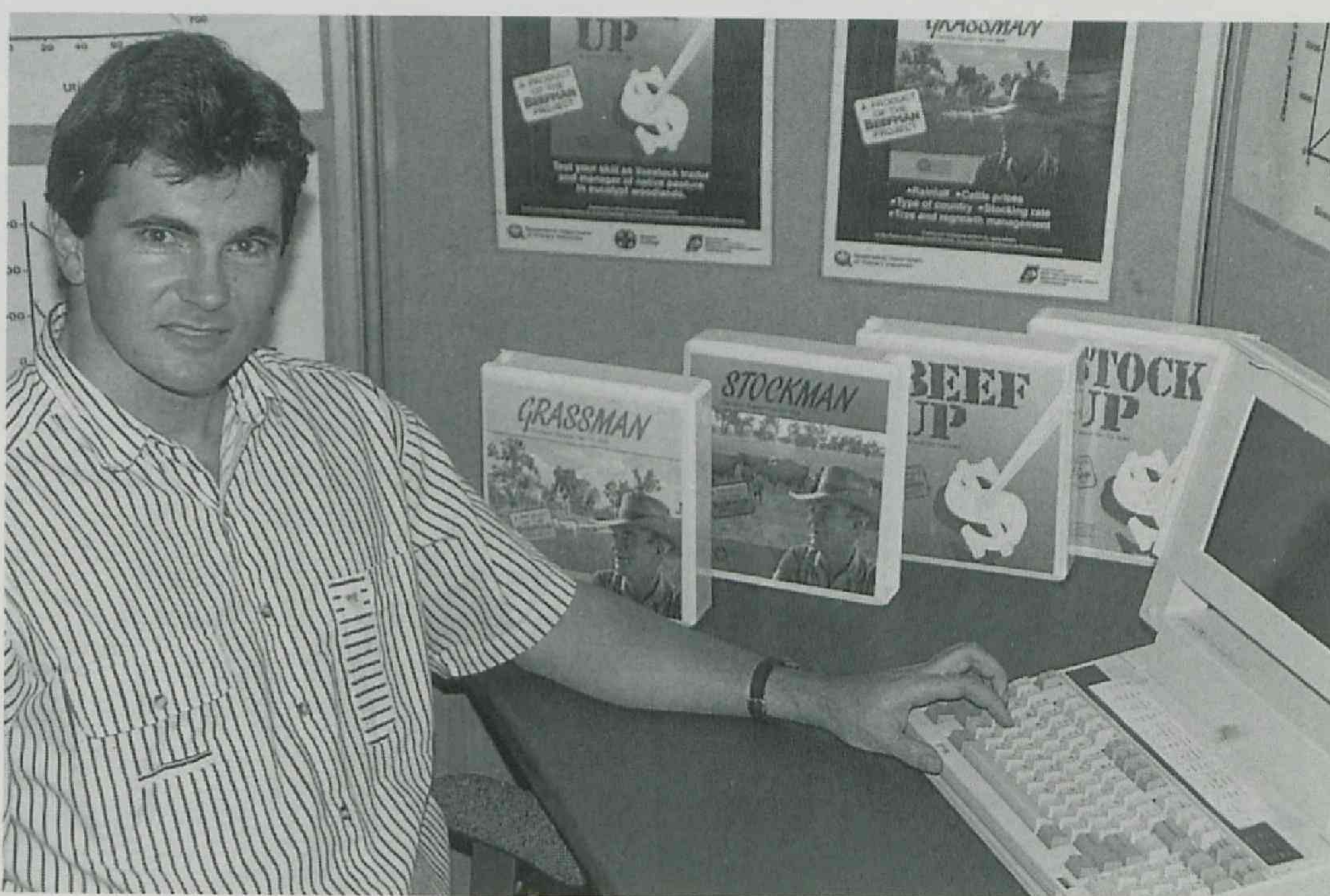
Responsibilities

The Agricultural Production Group sees its responsibilities of generating and communicating knowledge as the keystones to goal achievement in its Plant and Animal Industry programs. Servicing the real needs of industry, resolving problems and recognising opportunities for improvement and development within industries are prime responsibilities. These demand a high degree of professionalism in Group activities and services, effective interactions with industry and complementary organisations, and a rigorous approach to allocating resources.

FUNCTIONS

Purpose

The Agricultural Production Group's purpose is to encourage higher animal and plant productivity from rural lands by providing research, extension and regulatory services. This is achieved through its two programs: Animal Industries and Plant Industries.



The Agricultural Production Group recognises the importance of using up-to-date computer technology to assist in animal and plant production. Pasture agronomist Mark Howden displays some of the software packages available for animal producers through QDPI Publications, Brisbane.

Animal Industries Program

Goal

- To improve the productivity, profitability and value to the community of animal industries and improve the quality of food, fibre and other products of these industries for Australian and export markets, in a manner consistent with the conservation of natural resources and maintenance of public health standards.

Description. The program provides research, extension, essential regulatory control and a diagnostic service (with laboratory support) to the beef, sheep, dairy, goat, pig, poultry and deer industries.

It ensures a continuing supply of high-quality foodstuffs and fibres from efficient production systems that are consistent with the long-term stability of natural resources and the maintenance of public health.

Activities under this program are integrated on an industry basis and coordinated with complementary activities of the Plant Industries Program to provide a comprehensive range of services to the animal industries.

Program structure. The Division of Animal Industry administers the Animal Industries Program, which is split into five subprograms: Beef and Deer, Sheep and Goat, Dairy and Animal Breeding, Pig and Poultry, and Animal Laboratories.

Plant Industries Program

Goal

- To improve the productivity and economic value of field crop, horticultural, beekeeping and pastoral industries and their capacity to supply high-quality food, fibre and other products for domestic and export markets, consistent with conservation of basic soil, water and vegetation resources.

Description. The program undertakes research, development, extension and regulatory activities to support the continuing technological and economic growth of Queensland's agricultural and pastoral industries. Its responsibilities cover all crop and pasture plants, except sugarcane.

The activities of the program are focused on achieving crop and pasture genetic improvement, economically competitive and environmentally sustainable production systems, ecologically safe crop protection from pests, post-harvest quality and marketability of agricultural products, and improved biological understanding of processes affecting crops and pastures.

Program structure. The Division of Plant Industry administers the Plant Industries Program, which is split into four subprograms: Field Crops, Horticulture, Pasture Management, and Crop Protection.

MANAGEMENT PRINCIPLES

Strategic planning

Agricultural production, as a primary component of the agribusiness sector, will remain a driving force in the Queensland economy.

The dynamic nature of the industries that the Agricultural Production Group serves and the unpredictable nature of climatic influences on these industries require operating flexibility within a strategic planning framework.

Planning framework

After taking into account government policies, industry requirements and inputs from interacting organisations, the Group executive sets strategies and goals within its programs to help industries meet their challenges.

Within this planning framework, detailed projects are based on priorities relating to the impact of problems and opportunities on industries' productivity and efficiency, and to the sustainability of industries' natural resource base and community interest.

Project reviews are undertaken regularly to determine effectiveness in terms of achieving established objectives. This process ensures that Group activities can be updated to meet new problems and challenging opportunities.

Funding arrangements

While the bulk of the Group's funds are derived from consolidated revenue, a significant proportion of funds required to support research and development is provided from external funding sources, notably the rural industry research funds. The strong support of these funds indicates the relevance of the Group's programs to issues of regional, State and national significance.

AGRICULTURAL PRODUCTION GROUP ORGANISATION



The executive team (from left): Ian Wells, Dr John Leslie and Dr Geoff Behncken.

Dr John Leslie, B.Agr.Sc. (Hons), Ph.D., F.A.I.A.S.
Executive Director
Agricultural Production Group

Ian Wells, B.V.Sc.
Acting Director
Division of Animal Industries

Responsible for:
Animal Industries Program

Subprograms:
Beef and Deer
Sheep and Goat
Dairy and Animal Breeding
Pig and Poultry
Animal Laboratories

Dr Geoff Behncken, B.Agr.Sc., Ph.D.
Director
Division of Plant Industries

Responsible for:
Plant Industries Program

Subprograms:
Field crops
Horticulture
Pasture Management
Crop Protection

The **Division of Animal Industry** has 919 research, extension, regulatory, service and administrative staff located in 84 offices and 13 research stations throughout Queensland.

The **Division of Plant Industry** has 665 research, extension, regulatory, service and administrative staff located in 36 offices and 19 research stations throughout Queensland.

OPERATING PHILOSOPHY

The Agricultural Production Group's distinctive character derives from a series of basic beliefs that overlay its operations at all levels. Elements of this basic philosophy are set out below.

Staff. The professional and personal development and morale of the Group's staff are paramount and their operating environment is crucial to the achievement of excellence; their creativity and energy are at the core of knowledge generation.

Clients. The value of knowledge and the extent of its adoption by industry require a blending of industry, economic and technical perceptions in identifying needs and opportunities, and an open familiarity and trust in industry relationships.

Priorities. These must be set in accordance with medium and longer term public benefits, but retain the capacity to respond to immediate needs and emergencies.

Corporate behaviour. The complex nature of agricultural enterprises creates an interdependency of DPI departmental groups and must be fostered by enlightened corporate team effort to achieve cohesive services to clients.

Resources. Agricultural production has no future unless practised with a conservation ethic to sustain and enhance soil fertility, vegetation productivity and ecosystem vitality.

Community. The Group's ultimate obligation is to the nation's economy and the Australian community's health and well-being.

Government. Government is charged with the responsibility to meet the community's needs in a balanced and visionary way. The Group's primary role is to support that responsibility and to respond effectively to Ministerial direction.

REVIEW OF OPERATIONS

Animal Industries Program

Achievements

Organisational change led to closer alignment with Plant Industry staff in the new Agricultural Production Group, the addition of Dairy Husbandry and Animal Breeding Branch and the Natural Disaster Relief Secretariat to the Division, and the movement of Veterinary Public Health and Animal Quarantine groups to the new Division of Quarantine and Inspection.

Tuberculosis and brucellosis eradication campaign. The year's highlight was undoubtedly Queensland being declared 'Impending Free' for tuberculosis - the culmination of more than 50 years of tuberculin testing and specialised cattle segregation and strategic culling practices in the State. The achievement is unparalleled under extensive pastoral conditions.

The brucellosis situation was also excellent, with 'Impending Free' status being maintained. Infection was found in only one animal, an uncalved heifer in a previously heavily infected beef-breeding run in the rough Great Divide in central Queensland.

Disease prevention, threats and outbreaks. Other animal health highlights included further research on the distribution and pathogenicity of bluetongue viruses in Queensland and on the distribution of the various species of sandflies (*Culicoides*) that carry them, significant extensions to the Queensland Cattle Tick Free Area, the development to market readiness of a frozen tick-fever vaccine and the completion of a new tick-clearing dip on the Auburn Road at Helidon, the gateway to the Darling Downs.

Botulism, traditionally a disease of range cattle on phosphorus deficient country, again appeared in intensive cattle enterprises, and was responsible for more than 5 000 deaths in two feedlots on the Darling Downs. Botulism must now be regarded as a potential disease agent in all intensive cattle enterprises, especially where concentrates are being fed in quantity.

Management assistance programs. On the production side, increased activity occurred in providing producers with specialised management assistance packages, many consisting of computer software; for example, BEEFMAN and SOWTEL. Other packages, such as BRAND UP, were based on the results of 'dirty boots' field research.

The unqualified success of WORMBUSTER, a strategic program to maintain effective control of internal parasites in sheep because of widespread drug resistance in worms, led to the second generation of programs for worm control in sheep and cattle and for lice control in sheep. The search is continuing for similar solutions to the drug resistance that is appearing among buffalo fly and cattle tick populations in Queensland.

Genetic improvement programs. Genetic improvement work was again given high priority through BREEDPLAN, LAMBPLAN and WOOLPLAN, which give growers ways to measure genetic improvement in their herds and flocks. Work continued on developing improved pig and dairy genotypes under laboratory conditions at Biloela, Wacol and Warrill View, and on producing superior semen and embryo germplasm.

Superior semen was exported to 13 countries and all Australian states from the Wacol AB Centre, with the DPI's tropical AFS breed widely accepted as the dairy breed of choice in Pacific rim countries.

More than 350 Queensland cattlemen - mostly beef producers - graduated from the artificial insemination training courses run by officers of the Wacol AB Centre.

Research activities. Diverse research characterises the Division of Animal Industry and ranges from management projects such as automated cattle-handling systems on extensive properties and the welfare aspects of livestock transport to ruminal microecology and molecular DNA biotechnology. The latter has immediate applications for diagnostic testing and for vaccine production; as an example, a genetically engineered vaccine for infectious bovine rhinotracheitis in cattle was developed at the DPI's Animal Research Institute, Yeerongpilly, and is close to commercial release.

The Wacol AB Centre's quality advertising and promotional material helps the Centre maintain a high profile in the artificial breeding marketplace, nationally and internationally.



The common theme for all Division of Animal Industries research activities continued to be the search for practical outcomes that provide benefits in dollar terms for the livestock industries.

Feedlot regulations. The first draft of cattle feedlot guidelines was finalised and the feedlot registration system was introduced. While the guidelines and the legislation had controversial starts, they were largely endorsed by the Queensland feedlot industry, local government and the community, and attracted favourable comment from industry and regulatory authorities in other states.

Stock permits for horses. A less dramatic change, but one of great significance to horse owners, was the deregulation of the stock permit system for horses. Other than for movement into the Tick Free Area, horses may now travel without stock permits.

Planning for the future. The Division of Animal Industry recognises that it is operating in times of great change in resource availability and customers' requirements. It continues to plan for a strong future in Queensland's livestock production by maintaining a firm framework of topical research, effective information transfer, and efficient laboratory and regulatory support services. Within that framework, the Division strives to be resourceful and to maintain the flexibility needed to meet the changing needs of a dynamic livestock industry.

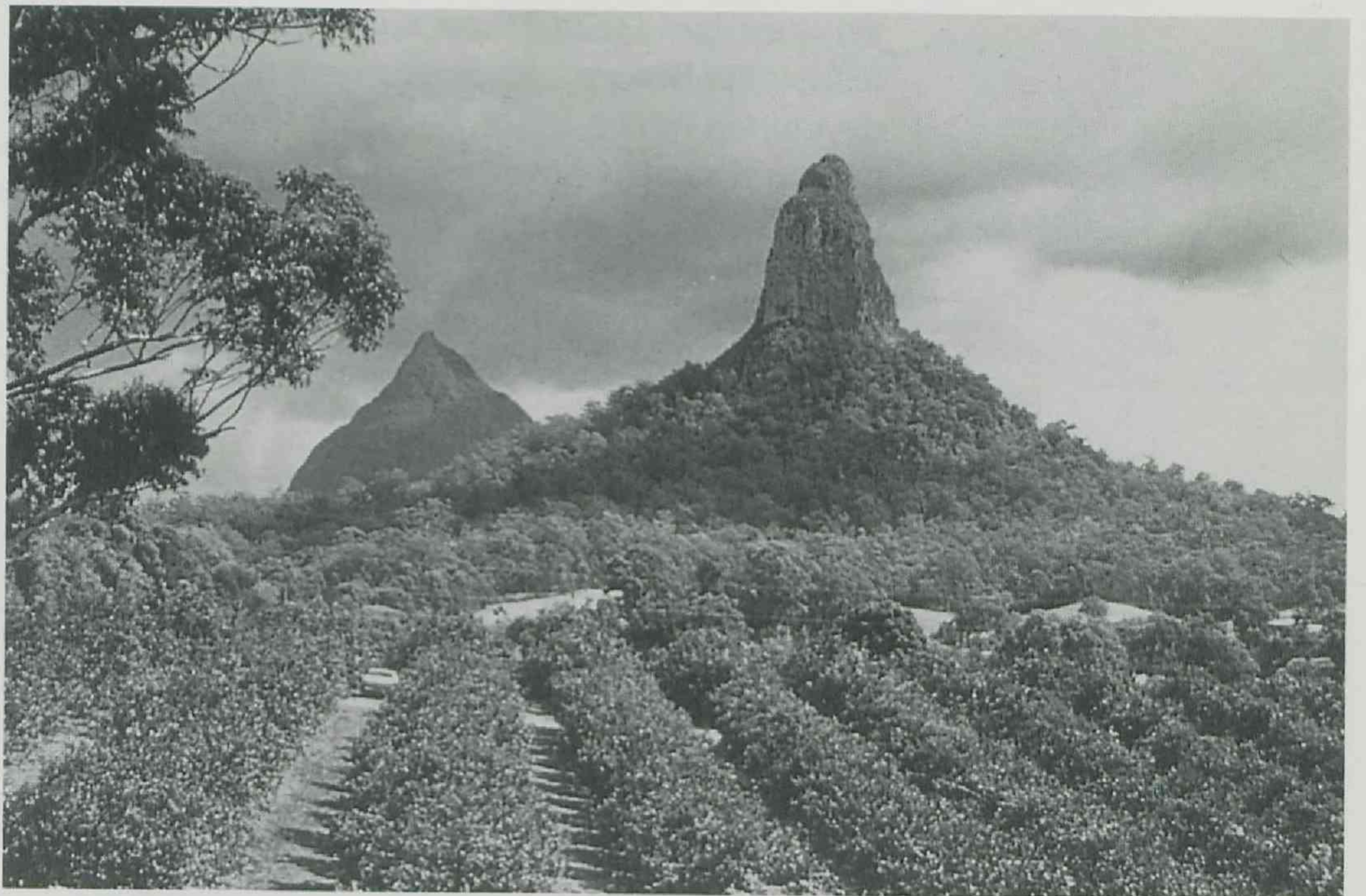
Plant Industries Program

Achievements

Crop and pasture management. Physiology, agronomy and nutrition research is increasing DPI understanding of primary producers' management needs for efficient crop and pasture production. This understanding has led to DPI development of decision-support computer packages.

An improved version of WHEATMAN and two additional packages under the name CQ AGWARE were released. The WATERSCHED irrigation scheduling package increased the efficiency of water use on crops such as cotton and soybeans. For example, on the Atherton Tableland, better irrigation management in potatoes commonly saved farmers two to three irrigations a season.

Software packages in the BEEFMAN series - a joint DPI/University of Queensland (Gatton College) project - were released and include GRASSMAN, BEEFUP, FEEDUP, STOCKMAN and STOCKUP packages.



In managing sown pastures, the focus is on the inclusion, early promotion and maintenance of an adequate legume component within the pasture. The legume desmanthus is an exciting prospect, and work continued on managing leucaena, stylos, medics, lucerne and serradella.

Plant breeding. Significant developments occurred in several important field crops. The new wheat variety Cunningham has high yield and high protein levels, while the new tobacco variety Dynes showed improved yield from early plantings, is easier to pick and has enhanced disease resistance. The high-yielding, rust-resistant sunflower parental inbred QSRI was released and is being used commercially. Research on sorghum midge resistance had a significant commercial impact, with eight of the ten midge-resistant hybrids containing at least one parent from the DPI program.

The new dual-purpose potato variety Winlock, developed jointly with the Victorian Department of Agriculture and Rural Affairs, is well adapted to winter plantings in the Lockyer Valley.

In apples, an early-maturing variety, Applethorpe Summerdel, has excellent size, flavour and quality, while early and late-maturing Muscat Hamburg grapes allow an extended harvest season. The strawberry variety Redlands Star was released, and new hybrid papaws produce fruit of higher quality and uniformity.

Integrated pest management in citrus is well established in the Gayndah/Mundubbera region and is being progressively implemented elsewhere, such as in this coastal orchard at Beerwah, north of Brisbane. Citrus IPM aims to minimise pesticide use while maintaining fruit quality. It features the use of parasites and predators to control insect pests.

Wilt-resistant Delta Tristar revitalised the tomato industry at Bowen. Improved varieties were also developed in capsicum, cucurbits, French beans, peas and sweet corn.

New selections of rice flowers (*Helichrysum*) have better flower form and colour, making this Australian native suitable for the cut-flower market.

More productive pasture plants were also released, including Amiga stylo, Amarillo forage peanut and Bisset creeping bluegrass. Seed of two new rust-resistant oat lines was increased for release.

Market responsiveness. Research and development activities became more responsive to domestic and export marketing opportunities.

Post-harvest systems that focus on quality and freedom from insect pests were developed for local avocados and for export of tomatoes and cucurbits to New Zealand.

The effects of heat and cold treatments on pest disinfestation and product quality were studied in a range of crops. Vapour heat treatment is a powerful tool for fruit fly disinfestation in mangoes and zucchinis, and avoids chemical residues. Controlled atmosphere storage extends the storage life of Kensington mangoes to 4 weeks and of the Keitt variety to 6 weeks.

Research on the Atherton Tableland identified the most suitable yellow-fleshed potato varieties and the optimum plant spacing to produce acceptable tubers for an export market in South-East Asia.

Sustainability of farming systems. Management of cropping lands to maintain stability and restore and improve soil fertility is essential for sustained farming.

Zero tillage to reduce soil loss increased fertiliser requirements because of nitrogen immobilisation and surface concentration of phosphorus. However, it also increased phosphorus uptake through improved microbiological activity.

A reduced tillage cropping system for tobacco, in which the primary cultivation is delayed until after the wet season, was adopted by farmers.

Weed research and extension projects on the effectiveness of residual herbicides in fallow management contributed to their more extensive use in place of tillage in conservation farming.

Integrated pest management. Integrated pest management (IPM) is based on cultural and biological control methods, with minimal reliance on chemical pesticides, and aims to reduce possible health and environmental risks. Its success depends on effective extension of total crop management and was enhanced by the release of several crop protection books and two videos on pest control in citrus and avocados. An extensive cooperative campaign in the Granite Belt promoted the benefits of IPM of mites and disease in deciduous fruits. The DPI also supported IPM programs started by the vegetable industry at Bundaberg and the banana industry at Innisfail.

The potential of several biological control agents was investigated for use in IPM. Fungal and bacterial parasites of nematode eggs and larvae were investigated to determine their disease control potential. Parasites of heliothis eggs were evaluated in the field, while a parasite of white louse scale on citrus showed promise.

Biotechnology. The production and use of monoclonal antibodies and nucleic acid probes are providing sensitive, rapid and reliable methods for detecting and identifying plant pathogens. Detection systems based on monoclonal antibodies were developed for important virus diseases of banana and lettuce, and for several seedborne bacterial diseases of legumes.

Regulatory activities. A bacterial disease caused by *Pseudomonas solanacearum* Biovar I was detected in north Queensland on ornamental heliconias. This pathogen causes a serious disease (Moko) of banana and an eradication campaign was instigated to contain this threat to the banana industry. A severe form of tristeza virus in sweet orange in the Gayndah area received similar attention.

The control program for black Sigatoka leaf disease in bananas at Bamaga in Cape York appeared to have succeeded. However, additional outbreaks of the disease on Thursday and Badu islands required destruction of diseased plants, and disease distribution was being monitored on three other Torres Strait Islands.

RESEARCH STATIONS

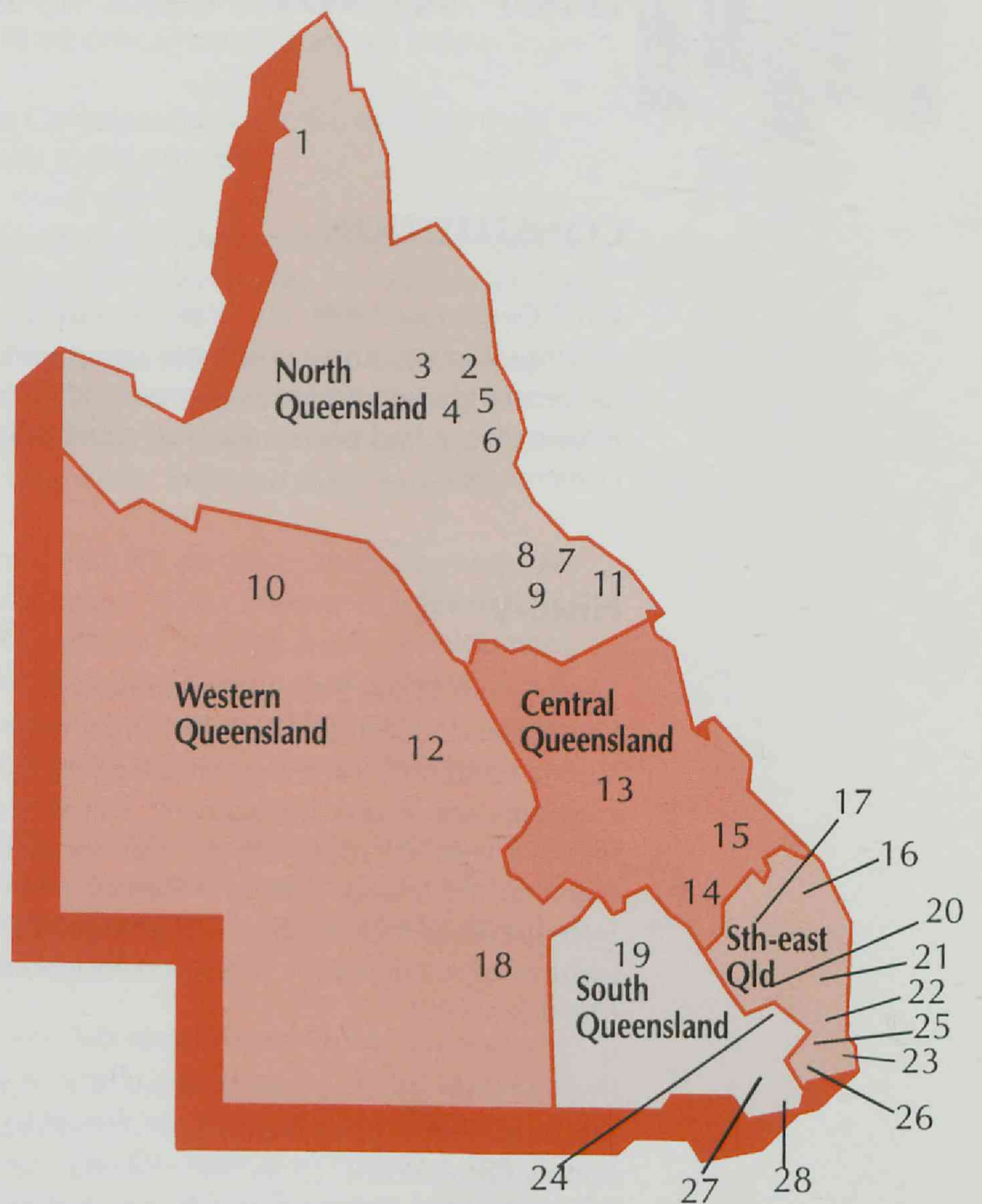
Twenty-eight research stations throughout Queensland service the technical requirements of research into all facets of agricultural production.

Animal Industries Program research is serviced by:

- Batavia Downs Research Station (1)
- Biloela Research Station (14)
- Brian Pastures Research Station [Gayndah] (17)
- Brigalow Research Station [Theodore] (15)
- Croxdale Research Station [Charleville] (18)
- Hermitage Research Station [Warwick] (27)
- Kairi Research Station (5)
- Mutdapilly Research Station (26)
- Rocklea Animal Husbandry Research Farm (22)
- Rosebank Research Station [Longreach] (12)
- South Johnstone Research Station (6)
- Swan's Lagoon Research Station (Millaroo) (8)
- Toorak Research Station [Julia Creek] (10)

Plant Industries Program research is serviced by:

- Ayr Research Station (7)
- Biloela Research Station (14)
- Bowen Horticultural Research Station (11)
- Bundaberg Research Station (16)
- Emerald Research Station (13)
- Gatton Research Station (25)
- Granite Belt Horticultural Research Station [Applethorpe] (28)
- Hermitage Research Station [Warwick] (27)
- J. Bjelke-Petersen Research Station [Kingaroy] (20)
- Kairi Research Station (5)
- Kamerunga Horticultural Research Station [Cairns] (2)
- Kingsthorpe Field Station (24)
- Maroochy Horticultural Research Station [Nambour] (21)
- Millaroo Research Station (9)
- Redlands Research Station (23)
- Roma Research Station (19)
- Southedge Research Station [Mareeba] (3)
- South Johnstone Research Station (6)
- Walkamin Research Station (4)



Horticulturalist James Drinnan and experimentalist Kylie Young harvest coffee trials at Walkamin Research Station on the Atherton Tableland. Studies aim to develop management systems for concentrating flowering and berry maturity for machine harvesting.

Water Resources Commission

CONSTITUTION

On 7 December 1989, the Water Resources Commission became a corporate group within the Queensland Department of Primary Industries. Before that, it had been a separate department of Government.

History

The original Water Supply Department of Queensland, constituted in 1881, took over water supply functions, formerly conducted by the Harbours and Rivers Department. This move, together with the appointment of a hydraulic engineer, J.B. Henderson, and the provision of State grants to local authorities, produced an upsurge of water supply projects throughout Queensland.

In 1922 with its first Commissioner, A.F. Partridge, the Department, renamed Irrigation and Water Supply Department, under the Irrigation Act, became responsible for providing technical assistance to local authorities and Treasury for major water supply and sewerage projects.

When the first Government Irrigation Scheme, the Dawson Valley Scheme, began operating in 1926 the organisation was renamed Irrigation and Water Supply Commission.

The Commission's resource management responsibility ensures that water plays a significant role in industry's economic development.



In 1931 under engineer-in-charge C.E. Parkinson, it became a sub-department of the Public Lands Department administered by the Land Administration Board.

Changes to legislation in 1946 enabled the State to embark on a program to develop water resources under Commissioner T.A. Lang.

In 1979 the Commission became the Queensland Water Resources Commission and in 1988 the Water Resources Commission.

In December 1989, the Commission, while still maintaining its name and structure, became a corporate group of the Queensland Department of Primary Industries, which comprises the former Departments of Forestry, Primary Industries and the Water Resources Commission.

Since its establishment more than 100 years ago, the Commission has grown into a strongly decentralised water authority with more than 1 000 salaried and 450 wages staff. It has become recognised throughout the water industry for its expertise and enterprise in developing new resource-management initiatives.

Responsibilities

The Commission is responsible for constructing, maintaining, managing and operating works for water conservation and supply, irrigation and associated drainage; regulating, controlling and maintaining the flow of water in watercourses; and improving underground water supplies. It is also responsible generally for conserving, replenishing, utilising and distributing the surface and underground waters of Queensland.

In fulfilling its responsibilities, the Commission measures and records the State's surface and underground waters, evaluates present and future water requirements and makes recommendations to the Minister about Queensland's water resources. To protect life and property, it controls referable dams.

The Commission encourages the planning and managing of urban water supply development to a standard that ensures the community's well-being. It promotes the efficient operation and management of urban water supply and sewerage schemes, and the use of appropriate technology to foster a high standard of community service.

FUNCTIONS

The Water Resources Commission's purpose and goals and the activities that flow from them reflect the Commission's role as the lead agency of the Queensland water industry.

Purpose

The Water Resources Commission's purpose is responsible development and management of the State's water resources and associated environment for the continuing benefit of the community.

Goals

- To coordinate the development and planning of all water related issues in Queensland.
- To encourage Queensland's economic growth by planning for and participating in effective development of the State's water resources.
- To achieve a close liaison with the community to determine its needs and to discuss water related issues openly.
- To obtain optimum benefits for the community through flexible management and efficient use of water resources.
- To maintain and, where practicable, enhance the quality of water and associated environment for multiple uses and values.
- To recover from recipients the full costs of service except where Government subsidies apply.
- To maintain, in a safe but challenging environment, an effective workforce that provides an efficient and responsible service to the community.

Program structure

The Commission's program structure aligns activities with its goals. The structure is the central framework around which financial and non-financial management systems are built.

The programs are output oriented and are the focus of all organisational endeavours. Each program represents a key area of Commission achievement.

The program structure has also largely been aligned with its organisational structure, resulting in the three critical benefits set out below.

- The Commission's clients can relate their needs to the programs.
- Management systems are simplified because the lines of responsibility for outputs are clear.
- The management system's simplicity and clarity have increased efficiency and effectiveness of Commission operations and, consequently, improve client service.

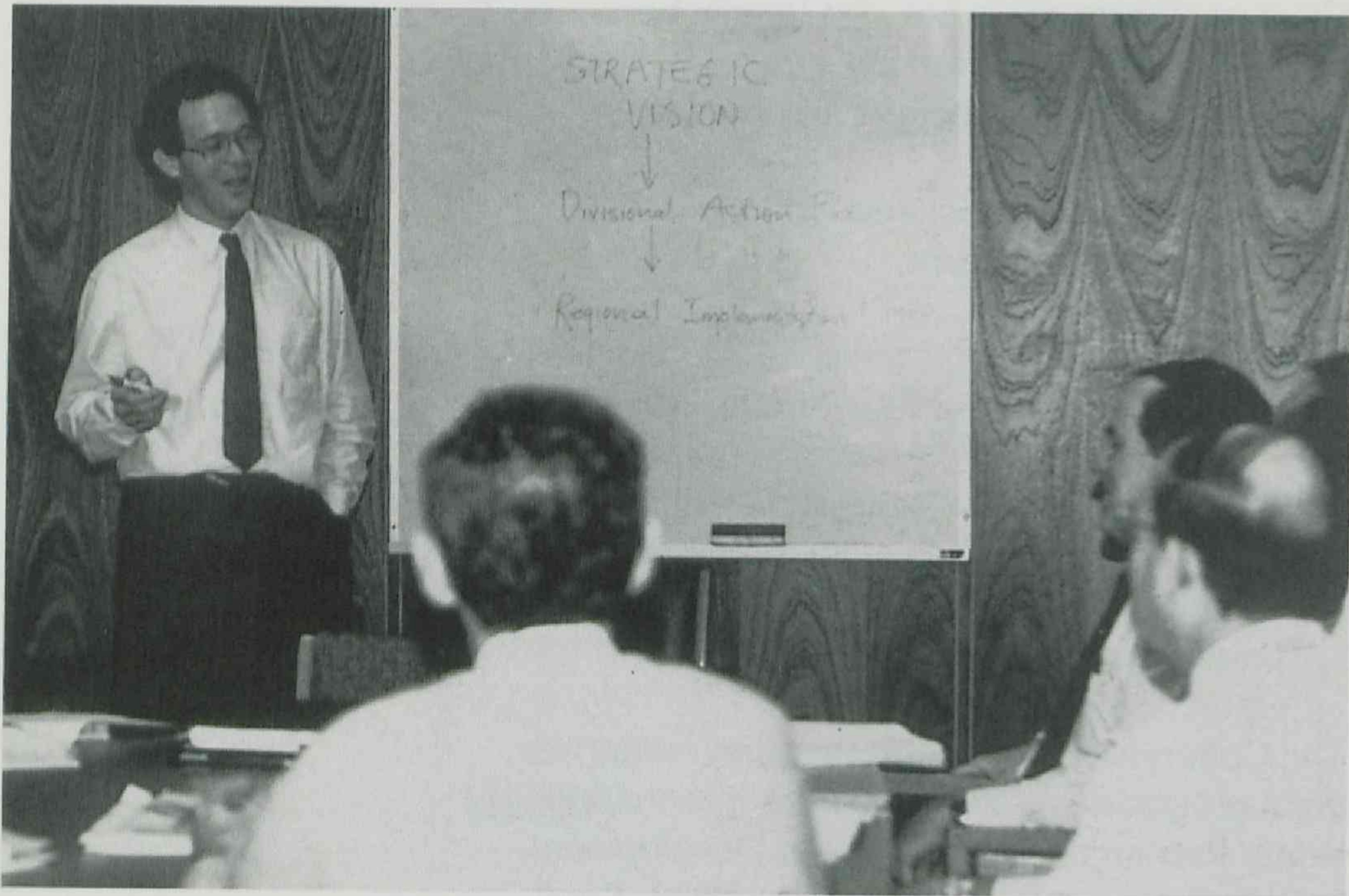
The Commission's program structure comprises eight programs - Water Resources Information, Water Resources Planning, Asset Development, Irrigation Area and Project Management, Rural Water Advisory, Resource Management, Local Authority Services and Corporate Services.

Reports on all of these programs appear in the 'Review of Operations' section of the Water Resources Commission's group annual report, a companion to this report.

The Water Resources Commission's Treasury Programs, which are reviewed in this report, comprise Water Advisory and Information Services, Water Conservation Planning and Development, and Water Resource Management.



Gin Gin Main Channel (with Fred Haigh Dam in the background) is the main water supply artery of the Bundaberg Irrigation Area, one of the many schemes managed by the Irrigation Area and Project Management Program.



Senior projects officer (corporate planning), Mick Lord, conducts a strategic planning workshop. The Commission's strategic plan projects a 5-year agenda of strategies.

The commission uses performance measurement to monitor changes in client needs. Bob Gnech (right), technical officer in Emerald, discusses irrigation practices with a local farmer.

MANAGEMENT PRINCIPLES

The Commission has a limited number of management levels, with authority delegated to appropriate levels. This ensures that all managers undertake the tasks expected of them. Managers are expected to make decisions on the best advice available and be accountable for their decisions within the limits of delegated responsibility.

Management principles are drawn together by three basic management processes: strategic planning, resource management and performance measurement.

Strategic planning is a cyclical activity through which the Commission determines its appropriate and desired future position (in light of relevant environmental factors) and identifies the means to achieve it. The Commission's strategic plan projects a 5-year agenda of strategies. These are documented and reviewed annually to ensure goals are achieved.

The Commission has a systematic approach to allocating and using resources efficiently and effectively. Its resource management systems are linked to the strategic plan and are supported by related mechanisms that:

- keep managers informed of activity levels, results achieved and the level of resource usage;
- allow for allocation and re-allocation of resources on a prioritised basis across programs; and
- provide for devolution of management responsibility and assign accountability for achievement of program objectives.

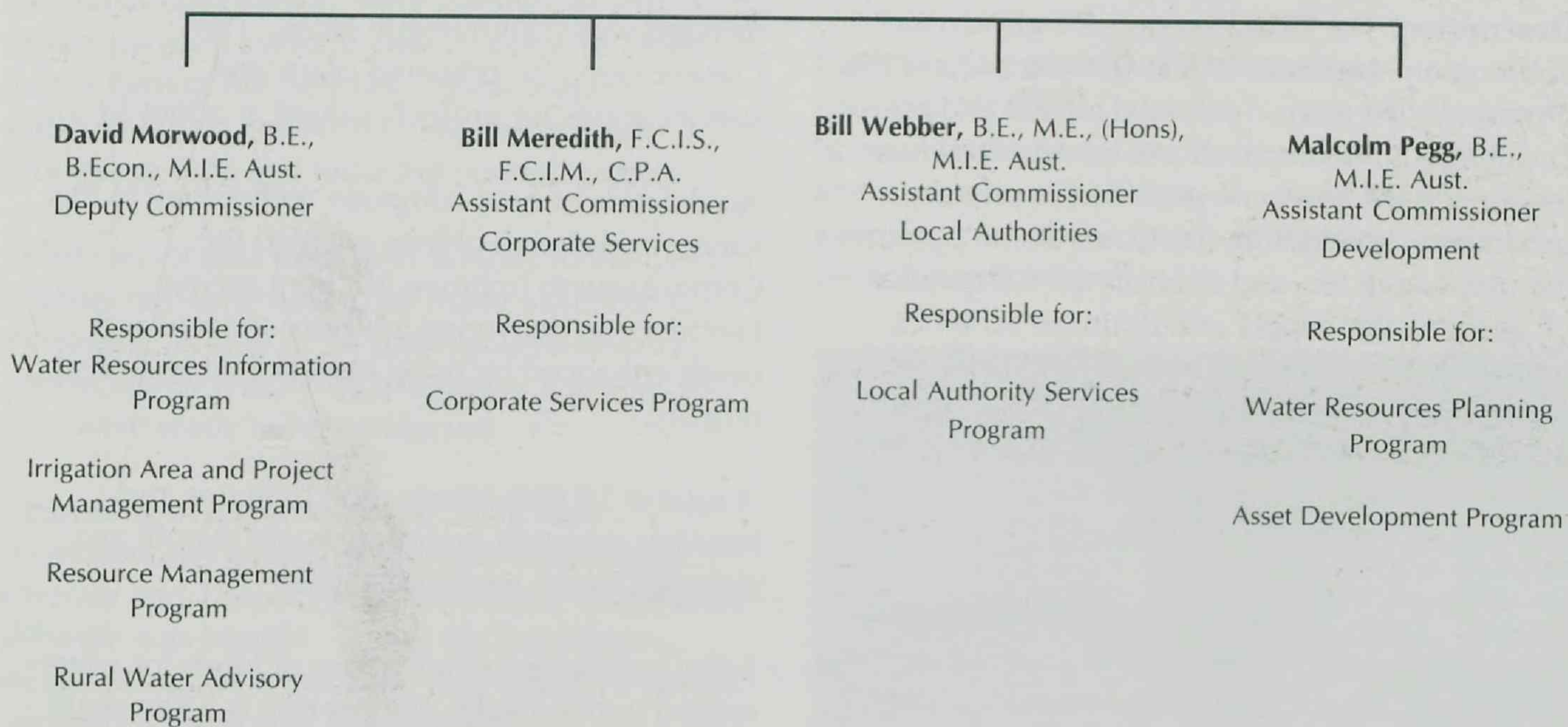
The Commission continually looks for ways to improve its program performance and the use of limited public resources to realise its purpose and goals more fully. The Commission's Management Team maintains an optimum balance between effectiveness and efficiency of performance, which is measured by data gathered for key result areas within each program.

WATER RESOURCES COMMISSION ORGANISATION



The executive team (from left): Bill Meredith, Bill Webber, Tom Fenwick, Malcolm Pegg and David Morwood.

Tom Fenwick, B.E. (Hons), F.I.E. Aust.
 Commissioner of Water Resources and Executive Director
 Member of the Board of Management



Regions

Far Northern - Mareeba
 Northern - Ayr
 Central - Rockhampton
 Burnett - Bundaberg
 Sth Eastern - Brisbane
 Sth Western - Toowoomba
 Western - Longreach

Districts

Ayr
 Biloela
 Bundaberg
 Charleville
 Emerald
 Gatton
 Goondiwindi
 Gympie
 Innisfail
 Mackay
 Mareeba
 Mundubbera
 Rockhampton
 Roma
 St George
 Theodore
 Toowoomba
 Warwick

OPERATING PHILOSOPHY

The principles below are inherent in all Commission activities. They are basic guides for conducting Commission business and it is incumbent on all managers to maintain and enhance them.

Customer orientation. As a service organisation, the Commission ranks service to the community highly. The customer is valued, and all staff strive for excellence when serving the public.

Expert staff. Staff are expert in their areas of endeavour. Staff training and development are integral components of Commission activities. Coupled with strong management leadership, the

Commission strives to ensure a continuing high achievement level.

Productivity improvements. The Commission continually seeks productivity increases. Effectiveness in achieving desired outcomes is basic to all action. When implementing procedures, systems, practices and technology, the Commission makes efficiencies at every opportunity. Total cost-efficiency is a primary objective in all activities.

Forward planning. Today's water-related management decisions recognise their impact on future generations. The resource's future quality and quantity depend upon the care and responsibility shown now, balanced with the need to use the resource for the present.

REVIEW OF OPERATIONS

Water Advisory and Information Services Program

Goals

- To improve primary producers' economic returns by giving expert advice on effective water use and on techniques, standards and technology relevant to water related systems and services.
- To have Queensland local authorities achieve the highest practicable standards of water-related public health engineering services by overseeing, providing expert advice and promoting strategic approaches to planning, developing, operating and managing of these services.
- To improve the State's economic and social development by supplying reliable data and assessments for use in the planning, developing and managing of the State's surface and groundwater systems.

Description. The Commission's Rural Advisory Subprogram and associated activities address this program's first goal. Technical advice and on-farm project investigation and design, largely on a fee-for-service basis, are provided to primary producers. In addition, the Commission provides the framework for, and controls the formulation of, group water-supply and drainage schemes, implemented at full cost to the immediate beneficiaries. To further improve development and operation techniques used in on-farm projects, the Commission helps train consultants, industry groups and landholders.

Through its Local Authority Services Subprogram, the Commission encourages and helps local authorities adopt a total management approach to planning, developing and operating their water supply, sewerage, drainage, flood mitigation and river improvement schemes. This Subprogram aims to assist local authorities to provide and maintain satisfactory standards, and ensure cost-effective use of State funding for such works.

The third goal relates to the Water Resources Information Subprogram under which the Commission measures and assesses the State's water resources. Essential data are collected and made available to the public.

Key result areas. The program's four key result areas are:

- increased economic and social benefits resulting from the development and use of the State's water resources;

- the use of appropriate expert advice and information;
- availability of accurate and reliable data and assessments of water resources; and local authorities making the most efficient use of funds for water-related public-health engineering services.

Performance indicators. Two performance indicators for the program are:

- increased (water-dependent) rural and industrial production, and increased urban and rural community benefits resulting from the use of water; and
- the ready availability and the degree of acceptance and use of data and advice.

Achievements

Efficiency of rural agricultural industries and their competitiveness in world markets depend on effective irrigation, drainage and water supply schemes to stabilise and enhance production. During the year demand from primary producers for technical help increased by 2.5%, and demand was continuing to grow. The Commission also prepared plans and specifications for projects valued at about \$1.7m.

Application of new computer technology to the survey and design phases enabled the Commission to improve its client service. Efficiency in delivering advisory services was being enhanced by using multiskilled technical officers.

A total of 18 000 information bulletins and booklets covering irrigation, water supply and drainage topics were distributed.

Local authorities' efficient use of funds for water-related public-health engineering is a key result area addressed through effective planning, public health and safety standards, management of services and State water industry overview.

Most local authorities were visited to discuss their long- and short-term planning within a regional and statewide development context. Responsibility for planning report evaluation, required under the State's loan-subsidy scheme, was transferred to three regional offices.

Seminars were held in Brisbane, Townsville, Rockhampton and Toowoomba as part of the release of updated *Guidelines for Planning and Design of Urban Water Supply Schemes*.

The Commission published 22 technical bulletins on asset management techniques and other current topics. The annual seminar for water supply, sewerage and swimming pool operators was held in Mackay, and regional field seminars were held for local authority personnel at Gympie and Warwick.

Urban Water Supply Systems in Queensland and Non-metropolitan Water and Sewerage Schemes - Queensland Technical Statistics 1987-88 were published. Commission officers led a working group with industry-wide representation to coordinate the establishing of a Water Industry Training Centre in Brisbane.

Accurate and reliable data and water resources assessment are key result areas on which other Commission planning and management programs depend. Satisfying client data needs is also important in gauging performance, and accessibility to all data is recognised and supported.

The Commission began a program to introduce new technology into streamflow data collection. Electronic data loggers were installed at 148 stream gauging stations, which comprise more than a third of the network. These loggers streamline data collection, thus decreasing processing time and reducing operating costs.

Telemetry of data from field stations to the office enables real-time data to be made available to managers. A total of 94 stations were already connected by telephone telemetry; a further 55 sites were ready to be connected.

Upgrading of the groundwater data base continued and its availability was extended to Emerald and Theodore district offices. Proprietary software was bought. This is the first step in modernising the streamflow data base to improve accessibility and cost effectiveness.

The needs for assessment models for use in day-to-day water-resources management are being met for both surface water and groundwater systems. Computer models were set up in regional and district offices for the Upper Condamine Irrigation Project, Nogoia-MacKenzie System and Peter Faust Dam to examine operational policies. Detailed models of the groundwater system at Bowen and part of the modelling system of the Burdekin-Haughton area were completed. More than 1 000 requests for hydrometric data are received annually.

Water Conservation Planning and Development Program

Goals

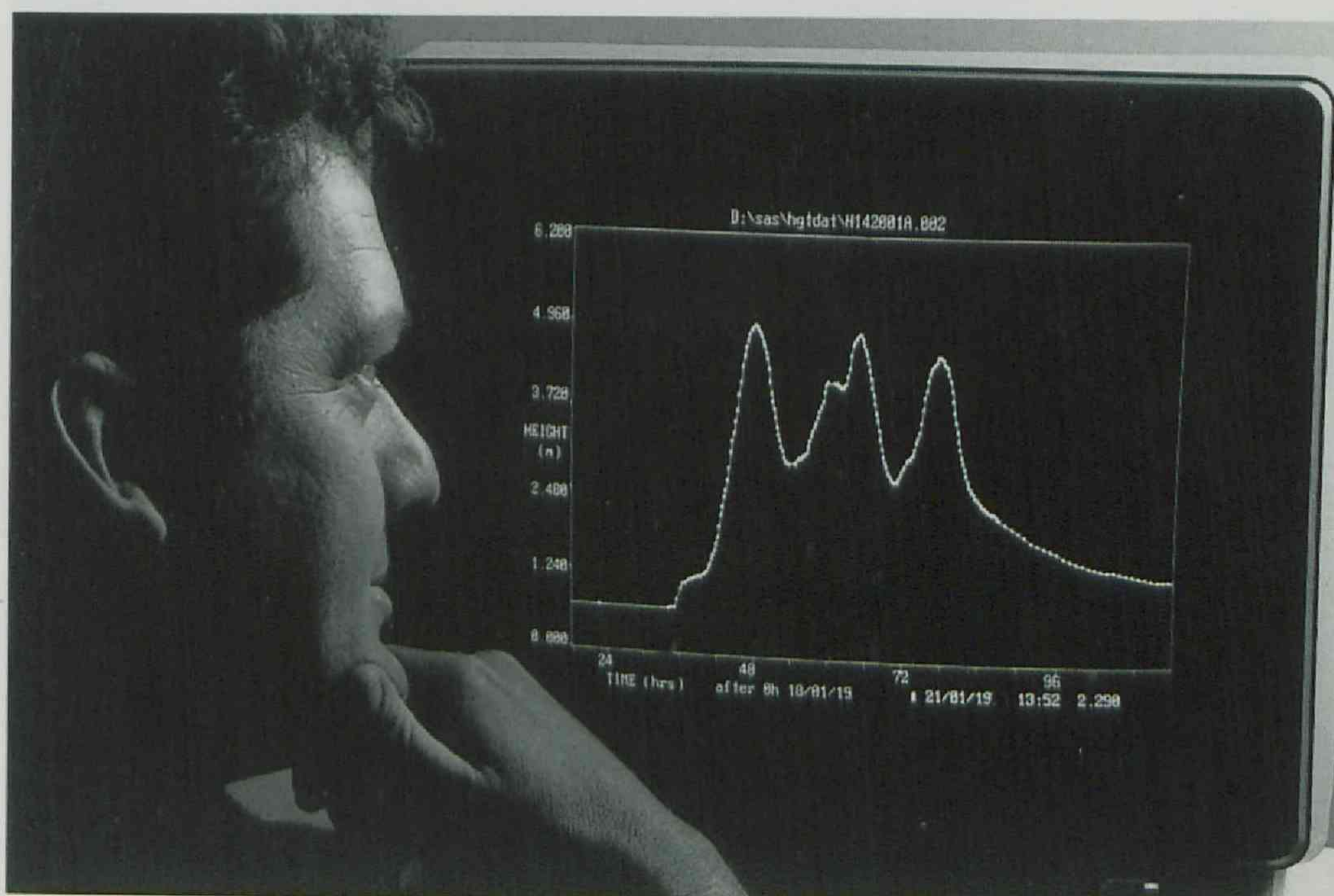
- To foster the State's economic and social development by identifying and meeting Queensland water users' needs through the responsible development of water resources infrastructure and management measures.
- To protect life and property by identifying all referable dams in Queensland and ensuring that they are safe.

Description. The planning process involves identifying the present and future water needs of the State's communities and formulating practical projects and policies to meet these needs. After government approval of proposals, the Commission uses consultants and contractors, and its own internal resources, to design and construct major water-supply and development schemes.

Planning and development support is provided to other departments, local authorities, statutory authorities and private organisations.

Expertise gained through designing and constructing dams is used to review standards and to monitor the performance of all Commission and privately owned dams to ensure their compliance with the latest, appropriate world-wide safety standards.

Telemetry enables data transfer by telephone connection from unmanned field stations anywhere in the State direct to computers in head office. A Brisbane-based hydrographer, Peter Fiedler, examines variations in river heights received from a gauging station during a peak flooding period.



Key result areas. The program's four key result areas are:

- economic and social contributions to the State's potential development;
- meeting the community's water-related needs;
- effectiveness of asset development; and
- dam safety.

The merits of projects proposed for developing and managing water resources are indicated by the first key result area. Projects are examined for their capability to provide economic and social contributions to Queensland's growth potential.

Because of the limited funds, the Commission allocates resources to areas of greatest need. Projects and policies must take proper account of community aspirations for using water resources. Another key result area, relates, therefore, to meeting the community's water needs.

To meet the community's needs and contribute to the State's overall well-being, projects must be implemented effectively and efficiently. As a result, asset development effectiveness is another key result area.

Queensland has 800 referable dams, and 78 of these are large dams. A dam is referable if it exceeds certain dimensions or is so declared because it could endanger life or property. Most of the large dams and many of the others are of high or significant hazard. Because the consequences of failure could be catastrophic, dam safety is an important key result area.

Performance indicators. As part of the planning process, proposed projects are scrutinised for their likely impacts. Their value to the State's development is indicated by:

- potential net economic, social and environmental benefits occurring from projects under development.

The Commission's success in meeting the community's water related needs is another performance indicator that is measured by:

- the level to which the end users accept that outputs are fit, cost-effective and timely for their purposes.

To ensure that asset development is effective, the Commission has adopted another indicator:

- quantitative assessment of performance according to budget and programs.

While the safety of dams is their owners' responsibility, the Commissioner is responsible for controlling the safety standards adopted. The success in meeting this requirement is indicated by:

- the percentage of referable dams in Queensland that are known to be safe in accordance with accepted practices within low-, significant- and high-hazard categories.

The achievements associated with these four performance indicators appear below.

Achievements

In recent years, the Commission has undertaken strategic audits of existing schemes to compare their performance with their predicted outcomes and to determine whether modifications to works or policies will improve performance. Consultants undertook operational management review studies in the Lockyer Valley and the Dumaresq River Irrigation Project.

To meet the community's water related needs, the Commission modified its planning process to ensure that greater attention is given to identifying each water region's real needs. A greater degree of public consultation occurs both during proposal formulation and during design and construction phases.

Studies were underway on nine potential water-resource development projects. Two other projects, which had been approved for construction, were referred back to the Commission for review.

Systematic overview studies will be done on each of the State's water regions over the next 5 years. These will be followed by appraisal studies of those regions where needs are greatest and by project studies of specific proposals. During the year, the first overview study in the Mary River Basin began and eight appraisal studies were in progress.

Project management systems have been implemented through adopting project management teams, a project information system (computer based) and quality management. Periodic value engineering studies were conducted to ensure that the essential functions of systems are achieved economically.

Good progress was made with these infrastructure projects: Horn Island Water Supply; Lowood, Gatton, Laidley Water Supply; Boggabilla Weir (Dumaresq - Barwon Border Rivers Commission); Burdekin River Irrigation Area; Proserpine Irrigation Project; Eton Irrigation Area; Bundaberg Irrigation Area; Lake Clarendon Scheme; and the Great Artesian Basin Rehabilitation.

Associated capital works included work on three dams and one weir, three pump stations and 146 km of water reticulation in open channels and pipelines. When completed, these works will increase water storage by 528 000 ML (about a 5% increase in capacity of State-owned storages) and supply an additional 82 000 ML annually for irrigation, urban and industrial purposes.

A *dam safety program* has focused on the identification and inventory of all referable dams, ensuring that all high- and significant-hazard dams meet currently accepted standards. This requires appropriate operational procedures and surveillance programs, including inspections and reviews by appropriately qualified engineers.

Twenty-four referable dams were licensed. Of the 11 privately-owned dams identified as high-hazard large dams, eight were under review. Three Commission dams were inspected in detail. A full safety review was made of Maroon Dam, and the spillway capacity of eight other Commission dams was evaluated. Borumba Dam's spillway capacity was found to be significantly less than the standard proposed by the Australian National Committee on Large Dams; in 1990-91, further studies will consider the need for upgrading.

Water Resource Management Program

Goal

- To optimise the use of the State's surface water and groundwater and related resources, and the associated State water supply infrastructure, to achieve long-term economic and social benefits for the people of Queensland on an equitable and sustainable basis.

Description. The Commission manages the use of water from unregulated streams, artesian and declared sub-artesian aquifers and State-constructed water conservation and reticulation works. The State's water supply infrastructure, valued at \$2 500m, supplies water to 170 000 ha of irrigation, 49 urban centres, 5 power stations, and 14 mining and several other industrial enterprises. The Commission also regulates sand and gravel contractors operating on non-tidal watercourses.

The Commission's management of these resources aims to equitably distribute the available supplies balanced with sound environmental considerations and financial returns to recover costs.

Key result areas. The program's four key result areas are:

- equity in the use and distribution of water resources;
- sustainable groundwater and river systems and associated environments;
- economic and social benefits from the use of the State's surface and groundwater resources, water storages and distribution systems; and
- collection of an appropriate proportion of the true costs from the beneficiaries of this program.

Performance indicators. Two performance indicators for the program are set out below.

- Water users and affected members of the community are satisfied with the service received, the system of water allocation and charging, and the Commission's regulatory control.
- The people of the State are satisfied with the level of increased rural and industrial production and social benefits that result from the Commission's management of the State's water and associated resources and State-owned works.



A Commission drilling rig reconditioning an uncontrolled bore near Richmond in western Queensland, as part of the Great Artesian Basin Rehabilitation Program.

The achievements below demonstrate how the Commission worked towards its predetermined performance indicators through its regional base.

Achievements

This program is managed through 18 district offices grouped into seven regions. Decentralised decision-making provides quick local responses to operational situations.

Queensland's first auction of water allocations was held in St George in November. The auction's success demonstrated that water allocations have a real value and can return to the State part of the cost of the value added by constructing major storages and distribution systems. More recently, the Government announced new policies requiring all new allocations attract a capital contribution upon issue.

Review of the hydrologic performance of several of the Commission's major storages showed that, by accepting a slightly greater risk of failure to supply the full annual allocation, available allocations could be significantly increased. Part of this additional water had already been distributed, with a consequent increase in annual revenue receipts. The remainder will be placed on the market progressively for further irrigation development.

A system of annual announced allocations was introduced to all State-managed irrigation areas. This more flexible approach allowed better use of the water resource. It assures the individual irrigator a specific volume of water and provides information on the possibility of additional supply. The irrigator can then plan his cropping program more effectively.

The introduction of temporary transferability of water allocations also provided greater access to additional water supplies. Irrigators whose water allocations exceed requirements in a particular year can transfer that excess to another irrigator. The first irrigator gets a return by sale of that water entitlement while the second irrigator, and the State, gain by its beneficial use.

The water held in storage at the end of the year in major Commission controlled dams was equivalent to 96% of the available capacity. With the exception of Callide and Cania dams, the storage levels will ensure adequate supplies for the coming year and, in some cases, for 3 years.

Advisory committees are now active in all State-managed irrigation areas and providing valuable management input. Discussion papers on specific issues and local newsletters are used to promote debate, help resolve problems and provide information for ongoing management.

Improvements in operation and maintenance procedures, introduced in cooperation with users, reduced costs. Further savings resulted from labour attrition, automation of water delivery and electrical energy tariff monitoring. In addition, improved marketing and increased use of water brought additional returns so that most areas were close to or had achieved complete recovery of operation and maintenance costs. Price rises were contained within the Consumer Price Index.

A computer model of the Mulgrave River was completed. It simulates sand and gravel movements in the stream channel. The results are used to manage the sand and gravel resource, including monitoring and controlling the materials removed, conserving environmental features, and balancing conflicting interests.

The management of client services and the effectiveness of the Commission's water distribution and advisory workforce were improved through staff multiskilling. This aims to provide improved services to clients in terms of scope and timeliness; to enhance productivity of services delivered; and to enhance job satisfaction and work opportunities.

Care for the environment is a major factor in water resource management. The environmental study continued of in-stream effects of the Bjelke-Petersen Dam to define monitoring guidelines and management practices suitable for statewide adoption. At Emerald, sub-surface drainage was installed to combat surface soil salination, and surface drains were built to direct farm runoff away from the Emerald town water intake. Other environmental considerations include declaring catchment areas to protect stored water quality and controlling sand and gravel extractions and river improvements to enhance the recreational amenity of streams.

The Great Artesian Basin Rehabilitation Program began during the year. Its objective is to recondition free-flowing bores to control flows, therefore ensuring the long-term viability of a vital resource. At present, 750 of Queensland's 2 300 flowing artesian bores flow uncontrolled. Many lose water through evaporation and seepage. The project is part of a national initiative and involves cost sharing on this basis: 20% landholder, 40% State Government and 40% Commonwealth Government. The program is limited to bore reconditioning and does not include reticulation works such as pipelines.



Agricultural Marketing and Development Group

CONSTITUTION

History

The Agricultural Marketing and Development Group was formed in April 1990, but its structural elements had been formed much earlier.

The Division of Marketing was established in 1945 as part of a departmental reorganisation and given responsibility for supervising marketing boards and co-operative societies, the monitoring and analysis of market trends, the regulation of agricultural standards and investigations into the economics of industries and practices.

Initially, the Division comprised the Marketing and Standards branches, which were renamed Marketing Services Branch and Agricultural Standards Branch respectively in 1966. It was joined by Economic Services Branch in 1958 and Consultancies and Business Development Branch in 1988.

The 1990 DPI reorganisation moved Agriculture Standards Branch into a yet-to-be-formed Division of Quarantine and Inspection, which also includes the newly formed Quarantine Branch and Veterinary Public Health Branch. The latter grew out of the Meat Control Branch formed in 1964 and was renamed the Slaughtering and Meat Inspection Branch to avoid confusion with the Queensland Meat Industry Authority. In 1980 it was renamed again in recognition of its widening areas of responsibility.

The Food Research and Technology Branch was formed in 1985 by combining the former Dairy Research Branch, whose work included research into more efficient dairy processing methods and improved quality for dairy products, post-harvest handling of fish and post-slaughter meat, with the fruit and vegetable processing research from the former Food Preservation Branch.

At 30 June 1990 the new Group comprised one division and seven branches, although planning for formation of a second division and a food institute were well advanced.

Responsibilities

The Group's prime responsibility is to improve the balance of trade in rural products for the Queensland economy. This is achieved by providing policy advice, marketing and economic research, marketing and production information, international trade-promotion coordination and representation on rural industry commodity marketing boards.

Commercial agribusiness performance is enhanced through farm business, financial and operational management training activities for producers and their organisations. Compliance with prescribed standards for product quality, packaging and labelling is enforced. Public health and the environment are protected against misuse of agricultural and veterinary chemicals and the introduction of overseas pests and diseases.

FUNCTIONS

The Agricultural Marketing and Development Group is responsible for three Departmental programs: Agribusiness Services, Quality Assurance and Environment Safety, and Food Industries.

The purpose and goals of each were determined by divisions, which manage the programs in consultation with branches, which manage the subprograms.

Agribusiness Services Program

Goal

- To improve the economic, financial, marketing and management systems and practices of Queensland's agricultural and fishing industries.

Description. This program recognises the need to encourage a market-driven approach to producing quality produce at competitive prices for global markets and the need for sustainable agricultural systems that are economically efficient.

Major undertakings are:

- research and development to support and facilitate expansion of private-sector trading opportunities for rural and fish commodities, processed commodities and Queensland-developed equipment and technology;
- support for adopting effective and efficient commercial practices and financial management by commodity marketing boards, agricultural co-operatives and farm produce commercial sellers;
- promotion of efficient and viable farming systems, sound farm business management and strategic adjustments to changing economic circumstances by primary producers; and
- coordination of marketing and business development for Departmental services, technology and intellectual property.

Subprograms

- Trade and Business Development
- Marketing Strategies and Research
- Farm Efficiency and Adjustment

Quality Assurance and Environment Safety Program

Goals

- To protect consumers, rural industries and the environment from agricultural pests and diseases, and from agricultural and veterinary chemical contamination and misuse.
- To provide assurances that agricultural products comply with standards prescribed by law.

Quarantine officer Bruce Williams inspects imported cut flowers for insects or disease symptoms.



Description. This program includes clearing and registering agricultural and veterinary chemicals and monitoring their responsible use, plus monitoring compliance with prescribed standards of agricultural chemicals, stockfoods, medicines and seeds.

The program ensures that conversion of livestock into retail meats is subject to suitable quality assurance and inspection systems, and provides producers and animal health authorities with information on the incidence of abnormalities and diseases found in livestock at slaughter.

The program includes plant and animal quarantine and export inspection services on behalf of the Commonwealth Government.

Subprograms

- Agricultural Standards
- Meat Safety and Quality
- Quarantine

Food Industries Program

Goal

- To achieve high-quality production, improved efficiency of post-harvest handling, processing and distribution, and more value adding by Queensland food industries, consistent with community needs.

Description. The program supports all food industries through research, extension and services. The emphasis is on processed foods, and fresh product where appropriate. Major areas include fruit and vegetables, seafoods, meats, dairy products, beverages and cereals.

The program helps industry with product development and promotes adoption of new technology, particularly in areas that contribute to export enhancement and import replacement.

The program supports the adoption of quality management systems by food processing establishments.

Subprograms

- Food Research
- Food Industries Services

AGRICULTURAL MARKETING AND DEVELOPMENT GROUP ORGANISATION



The executive team (from left standing): Nev Kruger, Peter Hamilton and Dr Peter White; (seated): Derek Marrable.

Derek Marrable, M.B.E., B.Sc., F.A.I.C.D.
Executive Director
Agricultural Marketing and Development Group

Neville Kruger, M.Sc., M.A.I.A.S., M.I.S.H.S.
Acting Director
Standards, Quarantine and Inspection Division

Responsible for:
Quality Assurance and Environment Safety Program

Subprograms:
Agricultural Standards
Meat Safety and Quality
Quarantine

Peter Hamilton, M.Agr.Sc., B.Econ., QDAH, F.A.I.C.D., M.A.I.A.S.
Acting Director
Agribusiness Division

Responsible for:
Agribusiness Services Program

Subprograms:
Trade and Business Development
Marketing Strategies and Research

Dr Peter White, M.Agr. Sc., Ph.D., B.A., M.B.A., M.A.I.P.A.
Acting Director
International Food Institute of Queensland

Responsible for:
Food Industries Program

Subprograms:
Food Research
Food Industries Services

The **Standards, Quarantine and Inspection Division** has 299 research, regulatory and administrative staff operating out of 36 centres in Queensland.

The **Agribusiness Division** has 117 technical and administrative staff operating out of 27 centres throughout Queensland.

The **International Food Institute of Queensland** has 97 research, extension and administrative staff operating out of seven centres in Queensland.

MANAGEMENT PRINCIPLES

Strategic planning

Management of the Group's activities adheres to program management principles, with divisions responsible for programs and branches responsible for subprograms. The Group's work and accountability are consistent with the program management framework and strategic plan developed in 1989 for the DPI's agricultural component.

The principles of strategic planning and program management are generally understood by managers and, together with participative management practices, ensure rapid defining of purposes and goals, and implementing of subsequently defined work activities.

Planning framework

Program plans at division level determine the background and objectives for each major area of activity within the Group. Policies and strategies for particular areas of concern or for inter-division collaboration are contained in focal programs.

Operational or work plans translate program goals and strategies into operational objectives, including time frames, human and financial resource requirements, and collaborative relationships for work units within branches.

Action plans detail commitments from individual officers or task groups to achieve operational objectives.

Inherent in the planning process is the necessity to incorporate objectives arising from regional issues through crossdisciplinary interaction among staff located in regional centres.



Final-year Dutch university students Matthias Tak (Wageningen) and Will Kloosterboer (Larenstein) undertook occupational training for 6 months in Brisbane as part of the Agribusiness Services Program. Both are studying agricultural marketing and were based in Marketing Services Branch, Primary Industries Building.

Funding arrangements

Agricultural Marketing and Development Group expenditure in pursuing its program goals relies on funding support from four major sources:

- revenue from Board sitting fees; registration of co-operatives, produce commercial sellers, and chemicals; seed testing and certification inspection fees; consultancies and training activities; and project management;
- Commonwealth Government funds for quarantine and export inspection;
- industry funds to support Veterinary Public Health Branch and for research and development; and
- consolidated revenue allocations to the Department.

REVIEW OF OPERATIONS

Agribusiness Services Program

Objectives

- To conduct international consultancy, collaborative research and training activities on a commercial basis.
- To increase recognition of Queensland as a world leader in tropical agriculture.
- To promote trade and investment in primary products and agribusiness.
- To encourage commercialisation of DPI technology, services and intellectual property.
- To provide better and more timely marketing information for the various sectors of rural and fishing industries.
- To develop forward-looking market strategies for selected commodities.
- To formulate industry structures that are more responsive to market signals.
- To provide farm business management information, specific-purpose decision-making aids and management-skills training for primary producers.
- To provide financial counselling services for primary producers.
- To undertake market-oriented and economic research in cooperation with industry.

Description. The Trade and Business Development Subprogram provides a sharper focus for DPI international consultancy, training and trade promotion activities and for encouraging innovation.

The Marketing Strategies and Research Subprogram provides comprehensive and timely marketing information, including daily produce market reports and crop forecasts to a wide clientele. Rural industries are helped to adopt marketing strategies that enhance their competitiveness. An integral part of the subprogram is administering comprehensive legislation for orderly marketing of primary products.

The Farm Efficiency and Adjustment Subprogram provides economic and farm business advice to primary producers, bankers, other rural service industries and DPI officers. A counselling service helps individuals in severe financial difficulties assess options for improvement. Administrative and technical support helps particular adjustment or assistance schemes, while periodic economic surveys help determine adjustment needs and evaluate the impact of assistance.

Key result areas. Relationships with the Australian International Development Assistance Bureau were strengthened by the completion of Stage 1 of the PNG Cocoa Quality Improvement Project and participation in an agricultural skills review for developing countries.

Close liaison with the Philippines' Australian Agricultural Consul in Brisbane enabled the Philippines' Sheep Raisers' Association to import live sheep from Queensland.

A 3-month international training course in 'Animal Husbandry and Breeding in the Tropics' attracted participants from seven countries, and a second course in 'Pasture Management in the Tropics' was conducted for participants from five countries.

Trade promotions included the Royal Show, United Kingdom, July; Congress of the World Union of Wholesale Markets, Gold Coast, September; Multifunction Polis Conference, Gold Coast, October; Alimentaria 90, Barcelona, March; and New Zealand Field Days, June 1990.

A proposal to establish a national foundation for funding cattle genetics research in Australia resulted in the release of a prospectus to raise an initial \$25m.

Commercialisation activities included a licensing agreement to manufacture and market a grass seed harvester, and a 3-year contract research agreement to develop biological control of plant nematodes.

Work began on the computer-based marketing information system PIMID for enhanced dissemination of marketing information.

Substantive improvements to the Primary Producers' Co-operative Associations Act were proposed in a widely circulated discussion paper.

A strategic marketing plan was prepared for the avocado industry.

Financial and economic performance of tobacco growers over the last 3 years was assessed for the Australian Tobacco Board.

Performance indicators. International activities in training, consulting and collaborative research are undertaken on a commercial basis to maximise trade benefits to Queensland and DPI professional development. These activities commit less than 1% of total DPI resources.

Re-orientation and more specific targeting of promotional campaigns by horticultural industries reflect the value of market research completed under the Marketing Strategies and Research Subprogram.

Better compliance with statutory requirements by co-operatives, farm produce commercial sellers and wine industry operatives indicated successful extension programs among marketing entities and producers.

Financial counsellors helped almost 1000 producers and their families. The counsellors answered general financial and property purchase enquires from a further 300 clients.

Performance elsewhere mainly depended on officers' completing projects on time within budget.

Achievements

Oversight and administrative support were provided for eight current Australian Centre for International Agricultural Research projects and one International Crops Research Institute for the Semi-Arid Tropics project involving collaborative research in 10 countries.

Overseas travel by a total of 175 DPI officers was coordinated. Twenty-one international consultancies were organised in 13 countries covering a broad range of issues and involving 20 officers for a total of 530 man days. Six international training consultancies were undertaken in five countries by four officers for a total of 98 man days. Individual training attachments ranging from 3 to 26 weeks were arranged and coordinated for 35 international trainees from 11 countries.

Visits and study tours for 26 groups from overseas countries were coordinated and managed.

A video, Panorama of the Future: Queensland Primary Production, was completed to introduce overseas visitors to Queensland and its agriculture.

Market development officers were appointed to Toowoomba and Mareeba to strengthen marketing activity in regional centres.



All imported cargo comes under quarantine screening. Here, quarantine officers Fiona Wadell and John Biggers check paperwork for imported cargo at the Port of Brisbane.

Daily, weekly and monthly reports on fruit and vegetable trading at the Brisbane Wholesale Market were enhanced by a facsimile reporting system introduced in January 1990.

Six seminars outlining the duties and responsibilities of directors, financial management principles and accountability requirements were presented to board members and senior management of several commodity marketing boards and co-operative associations.

Marketing bodies contemplating change were assisted by publication of a booklet, *Alternative Business Structures for Queensland Agriculture Marketing Boards*.

Almost 900 producers participated in 35 one-day and two-day courses, which included office organisation, cash book recording and reconciliation, budgeting, taxation, managing debt, off-farm investment, estate planning and use of computers.

A marketing handbook for prawn farmers was prepared at the Mackay Region Development Bureau's instigation for the Mackay Mariculture Association.

Grain segregation economics in central Queensland were investigated in a project completed for Bulk Grains Queensland.

Quality Assurance and Environment Safety Program

Objectives

- To ensure effective and safe agricultural and veterinary chemicals, and stock foods.
- To provide analytical and technical information on seed quality.
- To ensure the supply of disease-free and true-to-type seed of agricultural, horticultural and forage cultivars.
- To ensure that marketing of fruit and vegetables and other produce complies with prescribed quality requirements, agrees with trade descriptions and is acceptable to consumers.
- To ensure agricultural chemicals are applied in a safe, responsible and competent manner.
- To enable consumption of safe, wholesome and true-to-label meats produced under conditions reflecting community expectations.
- To ensure protection against entry into Australia of unwanted pests and diseases from animal, plant and commercial products.
- To ensure livestock exports comply with export conditions and health requirements.
- To encourage preparation of export animals that meet required standards of husbandry and animal welfare.
- To deliver efficient and cost-effective quarantine services uniformly across the State.

Description. The Agricultural Standards Subprogram establishes control over the sale and use of agricultural and veterinary chemicals through registration and testing for efficacy. Standards inspectors monitor sales outlets for non-compliance with legislative requirements and investigate complaints of damage to crops and livestock from misuse of chemicals. Fruit and vegetables offered for wholesale and retail sale are monitored for compliance with prescribed quality and maturity standards.

The Meat Safety and Quality Subprogram enables meat inspection and disease reporting in any area where livestock are processed and meat is transported or sold. Inspectors license premises, inspect products and condemn meat unfit for human consumption. They train meat industry personnel, check disease levels in livestock, report to producers and educate the community about meat.

Quarantine Subprogram's major role is to maximise quarantine security by regulating imports from all aircraft, vessels and associated passengers and cargo arriving at all points of entry to Queensland. Disease screening of imported plant and animal imports, including operation of quarantine stations, is an important post-entry activity. Export inspection of animals, including domestic pets and animal reproductive material, is performed by DPI for the Commonwealth Government.

Key result areas. Commencement of the Commonwealth Agricultural and Veterinary Chemicals Act on 1 July 1989 heavily influenced DPI operations.

Use of veterinary medicines, in accordance with approved directions on the labels, was made easier by publication of the book *VETMED: Registered Veterinary Medicines in Queensland and Their Uses*.

Export inspection activities intensified to satisfy new agreements between the Australian and New Zealand governments.

Q-SAFE, a new meat inspection and management system and the first development of its type in the world, was implemented. One slaughter house was accredited and three others were in final accreditation.

Job re-design, new work practices, deletion of out-of-date procedures and staff reductions for meat inspection of about 25% reflected implementation of a strategy to maximise productivity and efficiency and to develop financial self-sufficiency.

Strategies to help protect consumers after meat leaves abattoirs included a world-first education package designed to teach Queensland schoolchildren of the dangers of unsafe food handling.

Performance indicators. The Agricultural Requirements Board met 24 times to consider wholesale dealers' claims about the efficacy of 1231 preparations. A total of 3387 registration submissions, including 925 new registrations of agricultural requirements, were approved.

Residues in excess of mean residue limits were detected in only 15% of 65 produce samples taken for analysis.

Strengthening of the Agricultural Chemicals Distribution Control Act resulted in investigation of about 40 damaged crop and stock complaints, more than in the previous year.

Hygiene standards of abattoirs were high and the acceptable quality system of product monitoring was implemented. No pathological lesions were detected at meat-processing premises.

Specimens from all cattle affected with tuberculosis and blood samples from 97% of breeder animals were sent for laboratory confirmation, an extraordinary collection rate.

Provision of an increased range of services using existing abattoir-based resources and infrastructure indicated high operational efficiency. Income from fees exceeded outgoings, without fee increases and despite inflationary cost increases.

Quarantine Service productivity increased, staffing remained unchanged and funding increased in line with inflation. Passenger arrivals and cargo entry and exit substantially increased quarantine surveillance workloads.

Achievements

Of more than 1100 samples of chemicals and other agricultural requirements taken for analysis, 25% failed to comply with label guarantees or quality standards. Seizures, warnings and prosecutions followed, as appropriate. More than 1200 lines were seized for non-compliance with registration requirements.

Voluntary inspection and sampling of pasture seed crops at growers' cost was introduced to minimise the spread of parthenium weed through contaminated pasture seed.

For the first time in Australia, DPI inspectors ran slaughtering schools to train slaughtermen in hygienic dressing procedures.

More than 1700 premises kept to required standards or were constructed to standards to enable licensing.

Aseptic packaging has great potential for extending the shelf life of liquid foods. Here, senior food technologist Bob Isaacs uses Australian-designed equipment to pack mango puree.



Residue monitoring expanded to cover anti-microbial chemicals and veterinary drugs used in the calf and pig industries.

Thirteen breaches of Section 102 of the Meat Industry Act (illegal importation of meats from non-approved premises) were detected and prosecuted on behalf of the Livestock and Meat Authority of Queensland.

Implementation of appropriate inspection procedures enabled large quantities of peanuts imported by the Peanut Marketing Board to be processed at Kingaroy.

Special Education Centres and TAFE colleges where English is taught to migrant groups were targeted for 23 lecture sessions (involving 850 migrants) on quarantine requirements.

Food Industry Program

Objectives

- To improve compositional and sensory quality, to extend shelf life and to maximise nutritive value of processed foods.
- To develop new technologies for food processing and food analysis.



Seafood experimentalist Ross Smith uses an infrared moisture tester to measure the water content of scallops of different sizes and caught in different season to determine the natural variation. With this information it is possible to detect added water.

- To promote value adding components to under-utilised and minimally processed products and foods.
- To provide regionally available information, problem-solving advice, training and extension services for food industries.
- To evaluate different crops for processing.

Description. The DPI's Food Research Laboratory researches new products and post-harvest processing technologies that add value to fruit and vegetables, seafoods, meats, dairy products, beverages and cereals. Collaborative research with industry is encouraged and research results are disseminated among processing industries.

The Food Industries Services Subprogram provides the means for disseminating new technology and problem-solving advice, and for introducing total quality-management principles to the food industries.

Key result areas. A review of DPI food research and technology activities and resources was completed. A Ministerial task force, established to examine the feasibility of developing a Queensland food research institute, recommended that a new food research centre should not be built until existing food research and extension activities had been substantially restructured.

The regrouping of food research and technology staff and activities within the Agricultural Marketing and Development Group and the proposed establishing of a food institute with a broadly based charter started the restructuring process.

A statewide total quality-management training program, a self-help package and industry visits resulted in several food processors developing documented quality management systems.

Training programs, in collaboration with the Queensland Food Industry Training Council, were provided in food-hygiene processing technology and quality management.

A regular newsletter, *Food News*, was published to highlight DPI activities and expertise, and to provide technical information.

Food technologists with specialised skills in commodity areas provided problem-solving services.

Performance indicators. Apart from the review and restructuring process, the key indicator was a comprehensive array of projects completed on time within budget. Outcomes in terms of commercial adoption of the research, advice and training are assessable only some time after project completion.

Achievements

Aseptic packaging of pasteurised homogenised milk eliminated post-pasteurisation contaminants that spoil milk, extending shelf life up to 6 weeks.

The quality of fresh-chilled reef fish was greatly improved by applying ike jime, a Japanese rapid-killing method, and chilling in ice-seawater before storage on ice.

Cooking spanner crabs in a microwave oven or by steaming (rather than by the usual boiling method) resulted in lower cadmium levels in the crab flesh.

Nutritional benefits of avocados were demonstrated in a dietary trial conducted jointly with a Brisbane hospital, suggesting the high mono-unsaturated fat level in avocados may benefit blood lipids.

*The incidence of *Listeria monocytogenes**, a food contaminant of great public health significance, was found to be low in surveys of meat smallgoods and poultry processing plants.

Monoclonal antibodies to the alpha-amylase inhibitor in barley were generated and used in a sensitive, rapid enzyme-linked immunosorbent assay to quantify protein. Results attracted interest from two Australian biotechnology companies.

The dehumidified air-drying of fruit and vegetables using improved heat-pump technology was superior to conventional drying methods and has potential application in food processing and concentrating liquid foods.

Vacuum frying of fruit and vegetables at low temperatures resulted in snack foods that are flavoursome, nutritious and attractive. Processing requirements for selected Australian fruit and vegetable varieties were adopted from overseas technology.

A seminar on robotics in food processing, presented by DPI and the Department of Manufacturing and Commerce, led to formation of a consortium (including DPI and CSIRO representatives) to develop robotics technology for the food and agricultural industries.

Manufacturing trials with bruised beef in sausages, devon and salami showed no detrimental effect on product quality and acceptability. Use of bruised beef in smallgoods could increase returns to the Australian meat industry by \$36m annually.

The suitability of less traditional meats for smallgood production was assessed using bull beef, mutton, pork, buffalo, venison, goat, kangaroo and mechanically deboned chicken.

As part of a joint venture between DPI, Austrade and the Committee of Direction of Fruit Marketing, value-added mango products were prepared and assessed for market acceptance in Europe and Canada

Several confidential, commercial value-added food products were developed on a fee-for-service basis for industry. They included modified milks, health bars, microwaveable smallgoods, minimally processed horticultural products, and vegetable purees and sauces. One product, Chol-Free Tasty, a cheese product produced with vegetable oil, is now on the market.

Packing and storage temperatures and the medium in which live *Penaeus monodon* prawns are packed were found to be critical to their surviving transport to Japanese markets.

A food technologist was stationed in Bundaberg to reinforce regional services already operating from Malanda, Gympie, Rockhampton, Toowoomba and Brisbane.

In a joint initiative with the Department of Manufacturing and Commerce, a food processors' self-help group was established in Toowoomba to improve communication among processors and to allow greater access to government assistance in business management and technology development.

A comprehensive manual on using sodium metabisulphite to prevent the darkening of prawns was published in collaboration with the Queensland Fishing Industry Training Council.

Information on the sensory quality of Queensland-grown Arabica coffees was conveyed to growers and industry personnel in a report entitled *Arabica Coffee Genetic Improvement, Liquoring Quality and Industry Development*.

In a joint undertaking between the DPI, the Navy Bean Marketing Board and a commercial partner, navy bean varieties grown under different agricultural conditions were assessed for canning quality.



Financial Statements

DEPARTMENT OF PRIMARY INDUSTRIES

FINANCIAL SUMMARY FOR THE YEAR ENDED 30 JUNE, 1990

The current Department of Primary Industries was established by Order in Council dated 7 December 1989. This Department was brought into being by amalgamating the Department of Primary Industries, the Department of Forestry, the Water Resources Commission and that part of the Department of Harbours and Marine known as Boating and Fisheries Patrol. These former Departments continued to account for financial transactions until 31 December 1989. The functions of the current Department of Primary Industries are to provide and enhance the economic development of Queensland's agricultural, pastoral, fishing, forestry and water resources. The figures shown in the financial statements represent transactions for the former Department of Primary Industries for the period 1 July 1989 to 31 December 1989 and for the current Department of Primary Industries for the period 1 January 1990 to 30 June 1990. Estimates of Trust and Special Fund receipts and expenditure for all Funds have been reported in these statements only for the former Department of Primary Industries as other comparisons in most instances would be inappropriate.

	Consolidated Revenue Fund	Loan Fund	Banana Industry Fund	Commonwealth Quarantine and Export Inspections Fund	Commonwealth Rural Industry Grants Fund	Exotic Diseases Expenses and Compensation Fund	Fisheries Research Fund	Meat Inspection Account
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
RECEIPTS—								
Commonwealth Payments	28,398	..	..	..	..	..	..	..
Taxes, Fees and Fines	866	..	171	..	..	..	200	3,844
Territorial	438	..	..	..	..	..	..	..
Property Income	16	..	..	..	..	..	..	..
Receipts for Goods and Services . .	30,242	..	..	..	..	..	1	..
Miscellaneous Receipts	9,107	..	9	..	..	..	586	3
Capital Recoveries	5,175	..	..	..	..	..	..	200
Financing Transactions	30,000	..	..	..	..	..	..	..
Intra Public Accounts—								
Unrequited Transfers	15,474	..	195	..	..	..	..	..
Total—Actual	119,716	..	374	..	..	..	787	4,046
Estimate Trust and Special Funds . .	20,410	223	381	5,650	4,841	10	665	4,000
Actual Previous Year	20,410	223	385	5,650	4,841	..	715	3,686
Note Ref.	(1.1) (2.1)		(1.2)					
PAYMENTS AS PER APPROPRIATION ACCOUNT	281,095	..	241	165	824	..	838	3,416
FINANCIAL ASSET BALANCES 30 JUNE—								
Cash and Investments . . . . .	..	..	238	..	..	..	331	1,670
Loans and Advances (Note 7)	5,045	..	..	..	..	..	..	..
FINANCIAL LIABILITY BALANCES 30 JUNE—								
Net Borrowings and Repayable Advances (Note 8)	294,922	..	..	..	..	..	..	..

Executive Council Minute No. 1953 dated 28 June 1990 closed the Commonwealth Quarantine and Export Inspections Fund and Commonwealth Rural Industry Grants Fund effective from 1 July 1990 and transferred balances and functions to Consolidated Revenue Fund.

FINANCIAL SUMMARY—continued

	Poultry Industry Fund	Primary Industries Department Special Standing Fund	Stock Diseases Compensation and Stock Improvement Fund	Sugar Cane Prices Fund	Swine Compensation Fund	Brisbane Forest Park Fund	Forestry Fund	Artesian Bores and Water Supply Areas Working Account
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
RECEIPTS—								
Commonwealth Payments								
Taxes, Fees and Fines	252			2,360			100	
Territorial							18,199	
Property Income				448				18
Receipts for Goods and Services ..						93	6,201	98
Miscellaneous Receipts	61			35			214	
Capital Recoveries	32			32				
Financing Transactions						33	1,967	
Intra Public Accounts—								
Unrequited Transfers	763					1,172	26,781	
Total—Actual	1,108			2,874		1,299	53,461	116
Estimate Trust and Special Funds ..	1,083			2,378				
Actual Previous Year	1,036	32,425		2,733				
Note Ref.	(1.3)					(1.4)	(1.5)	
PAYMENTS AS PER APPROPRIATION ACCOUNT	1,110	4,260	12	2,689		1,014	57,354	63
FINANCIAL ASSET BALANCES 30 JUNE—								
Cash and Investments	14		5	3,014	17	224	13,791	341
Loans and Advances								
FINANCIAL LIABILITY BALANCES 30 JUNE—								
Net Borrowings and Repayable Advances (Note 8)						186	415,870	20

* Amount less than \$500.

Executive Council Minute No. 1953 dated 28 June 1990 closed the Primary Industries Department Special Standing Fund effective from 1 July 1990 and transferred balances and functions to Consolidated Revenue Fund.

Executive Council Minute No. 1948 dated 28 June 1990 closed the Commonwealth Poultry Industry Assistance Fund effective from 1 July 1990.

	Burdekin River Irrigation Project Fund	Callide Water Supply Fund	Stanwell Water Supply Fund	Water Assessment Fund	Water Resources Construction Fund	Wivenhoe Dam Project Fund
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
RECEIPTS—						
Commonwealth Payments						
Taxes, Fees and Fines						
Territorial						
Property Income						
Receipts for Goods and Services ..						
Miscellaneous Receipts						
Capital Recoveries						
Financing Transactions						
Intra Public Accounts—						
Unrequited Transfers						
Total—Actual						
Estimate Trust and Special Funds ..						
Actual Previous Year						
Note Ref.						
PAYMENTS AS PER APPROPRIATION ACCOUNT	3,817	*	6	4	1,961	463
FINANCIAL ASSET BALANCES 30 JUNE—						
Cash and Investments						
Loans and Advances						
FINANCIAL LIABILITY BALANCES 30 JUNE—						
Net Borrowings and Repayable Advances						

* Amount less than \$500.

Executive Council Minute No. 1953 dated 28 June 1990 closed the above funds effective from 1 July 1990 and transferred balances and functions to Consolidated Revenue Fund.

APPROPRIATION ACCOUNT FOR 1989-90

1988-89 Expenditure	Note Ref. No.	Fund Policy Area Program Area	Appropriations	Transfers	Appropriations as adjusted by Transfers	Total Expenditure	Unforeseen Expend- iture— Amount to be Appropriated	Lapsed Appropriations
\$'000			\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
		Consolidated Revenue Fund						
		POLICY AREA 01—GENERAL PUBLIC SERVICES						
..	3.1	011 Legislative and Executive Services	..	+476	476	415	..	61
..		Total for Policy Area . . . . .	..	+476	476	415	..	61
		POLICY AREA 08—AGRICULTURE, FORESTRY AND WATER RESOURCES						
124,421	3.2, 4.1	081 Agriculture	145,471	+12,721	158,192	163,256	5,064	..
..	3.3, 4.2	082 Forestry . . . . .	..	+34,142	34,142	26,678	..	7,464
..	3.4, 4.3	083 Water Resources . . . . .	..	+104,340	104,340	90,745	..	13,595
124,421		Total for Policy Area	145,471	+151,203	296,674	280,680	5,064	21,059
124,421		TOTAL CONSOLIDATED REVENUE FUND	145,471	+151,679	297,150	281,095	5,064	21,120
		Trust and Special Funds						
		POLICY AREA 08—AGRICULTURE, FORESTRY AND WATER RESOURCES						
		081 Agriculture						
334		<i>Banana Industry Fund</i>	412	..	412	241	..	171
5,530		<i>Commonwealth Quarantine and Export Inspections Fund</i>	165	..	165	165	..	*
4,736		<i>Commonwealth Rural Industry Grants Fund</i>	824	..	824	824	..	*
..		<i>Exotic Diseases Expenses and Compensation Fund</i>	10	..	10	..	..	10
551		<i>Fisheries Research Fund</i>	625	..	625	838	213	..
3,325		<i>Meat Inspection Account</i>	3,735	..	3,735	3,416	..	319
1,038		<i>Poultry Industry Fund</i>	1,049	..	1,049	1,110	61	..
30,838		<i>Primary Industries Department Special Standing Fund</i>	4,260	..	4,260	4,260	..	*
21		<i>Stock Diseases Compensation and Stock Improvement Fund</i>	17	..	17	12	..	5
2,660		<i>Sugar Cane Prices Fund</i>	3,276	..	3,276	2,689	..	587
40		<i>Swine Compensation Fund</i>	10	..	10	..	..	10
	3.3	082 Forestry						
..		<i>Brisbane Forest Park Fund</i>	..	+1,545	1,545	1,014	..	531
..		<i>Forestry Fund</i>	..	+63,700	63,700	57,354	..	6,346
	3.4	083 Water Resources						
..		<i>Artesian Bores & Water Supply Areas Working Account</i>	..	+111	111	63	..	48
..		<i>Burdekin River Irrigation Project Fund</i>	..	+3,818	3,818	3,817	..	1
..		<i>Callide Water Supply Fund</i>	..	+1	1	*	..	1
..		<i>Stanwell Water Supply Fund</i>	..	+7	7	6	..	1
..		<i>Water Assessment Fund</i>	..	+4	4	4	..	*
..		<i>Water Resources Construction Fund</i>	..	+1,962	1,962	1,961	..	1
..		<i>Wivenhoe Dam Project Fund</i>	..	+463	463	463	..	*
49,073		TOTAL TRUST AND SPECIAL FUNDS	14,383	+71,611	85,994	78,238	274	8,030
		Loan Fund						
		POLICY AREA 08—AGRICULTURE, FORESTRY AND WATER RESOURCES						
223		081 Agriculture . . . . .	..	..	..	..	..	..
223		TOTAL LOAN FUND . . . . .	..	..	..	..	..	..
173,717		TOTAL—ALL FUNDS	159,854	+223,290	383,144	359,333	5,339	29,150

* Amount less than \$500.

SUPPLEMENTARY INFORMATION TO APPROPRIATION ACCOUNT

Outlays/funding sources (a)	Program (Program Area Code)									
	Office of the Minister for Primary Industries (011)		Animal Industries (081)		Plant Industries (081)		Food Technology (081)		Fisheries and Wetlands Management (081)	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Program Outlays										
Current Outlays										
Salaries, Wages and Related Payments	..	149	30,373	30,110	24,190	24,810	2,685	3,219	4,040	6,770
Administrative Costs	..	235	16,147	17,174	4,354	4,656	375	685	1,524	4,347
Interest
Current Grants and Subsidies (b)	6,696	5,170	850	900	..	..	..	..
Total Current Outlays	..	385	53,216	52,455	29,394	30,366	3,060	3,905	5,564	11,116
Capital Outlays										
Salaries, Wages and Related Payments
Major Building Works & Acquisitions
Fixed Capital Expenditure	438	..	50	..	..	..	98
Water Assessment
Project Studies
Great Artesian Basin—Rehabilitation
Irrigation Areas and Projects—New Works
Plant and Equipment (c)	..	30	4,195	3,477	1,507	1,597	405	113	1,161	770
Capital Grants and Subsidies
Total Capital Outlays	..	30	4,195	3,915	1,507	1,647	405	113	1,161	867
Financing Outlays										
Redemption of Borrowings
Advances
Total Financing Outlays
Total Outlays	..	415	57,411	56,370	30,901	32,013	3,465	4,017	6,725	11,984

(a) Significant variations from previous year are discussed in note 5. (b) Details are provided in note 6. (c) Refer note (9.3).

Program Outlays	Land Conservation (081)		Agribusiness Services (081)		Technical Services (081)		Corporate Services (081)		Native Forest Production (082)	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Current Outlays										
Salaries, Wages and Related Payments	8,823	9,713	6,995	7,710	9,048	10,084	9,388	12,157	..	4,314
Administrative Costs	1,568	2,498	1,862	2,747	5,111	5,000	6,888	7,062	..	1,440
Interest	..	..	..	..	284	..	..	248	..	..
Current Grants and Subsidies (b)	..	45	..	..	..	..	160	..	..	14
Total Current Outlays	10,391	12,256	8,857	10,457	14,443	15,085	16,436	19,468	..	5,768
Capital Outlays										
Salaries, Wages and Related Payments	..	..	..	..	..	..	..	..	..	..
Major Building Works & Acquisitions	..	..	..	..	..	..	..	..	..	..
Fixed Capital Expenditure	..	9	..	10	..	315	..	966	..	45
Water Assessment	..	..	..	..	..	..	..	..	..	..
Project Studies	..	..	..	..	..	..	..	..	..	..
Great Artesian Basin—Rehabilitation	..	..	..	..	..	..	..	..	..	..
Irrigation Areas and Projects—New Works	..	..	..	..	..	..	..	..	..	..
Plant and Equipment	1,184	854	1,355	465	900	1,131	4,045	2,964	..	136
Capital Grants and Subsidies	..	..	..	..	..	..	..	..	..	..
Total Capital Outlays	1,184	864	1,355	475	900	1,446	4,045	3,930	..	181
Financing Outlays										
Redemption of Borrowings (c)	..	..	..	..	272	..	..	464	..	..
Advances	..	..	..	..	..	1,477	..	..	..	..
Total Financing Outlays	..	..	..	..	272	1,477	..	464	..	..
Total Outlays	11,575	13,120	10,212	10,932	15,615	18,008	20,481	23,862	..	5,949

(a) Significant variations from previous year are discussed in note 5.

(b) Details are provided in note 6. (c) Refer note 9.4.

SUPPLEMENTARY INFORMATION TO APPROPRIATION ACCOUNT—continued

Outlays/funding sources (a)	Program (Program Area Code)									
	Plantation Production (082)		Other Resource Sales (082)		Forest Services (082)		Consultancies (082)		Water Resource Management (083)	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Program Outlays	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Current Outlays										
Salaries, Wages and Related Payments	..	13,985	..	856	..	4,706	..	..	..	6,119
Administrative Costs	..	4,485	..	216	..	1,622	..	746	..	9,915
Interest	..	14,439	..	..	..	15	..	..	..	12
Current Grants and Subsidies (b)	..	6	..	2	..	404	..	..	..	341
Total Current Outlays	..	32,915	..	1,074	..	6,748	..	746	..	16,387
Capital Outlays										
Salaries, Wages and Related Payments
Major Building Works & Acquisitions
Fixed Capital Expenditure	..	5,295	..	..	..	138	..	..	..	..
Water Assessment
Project Studies
Great Artesian Basin—Rehabilitation	150
Irrigation Areas and Projects—New Works	1,410
Plant and Equipment	..	4,707	..	34	..	277	..	..	..	209
Capital Grants and Subsidies
Total Capital Outlays	..	10,002	..	34	..	415	..	..	..	1,769
Financing Outlays										
Redemption of Borrowings Advances	..	472	..	..	..	14	..	..	..	*
Total Financing Outlays	..	472	..	..	..	14	..	..	..	*
Total Outlays	..	43,389	..	1,108	..	7,177	..	746	..	18,156

(a) Significant variations from previous year are discussed in note (5). (b) Details are provided in note (6).
 * Amount less than \$500.

	Water Advisory and Information Services (083)		Water Conservation, Planning and Development (083)		Corporate Services (083)		Natural Disaster (105)		Total of all programs	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Program Outlays										
Current Outlays										
Salaries, Wages and Related Payments (c)	..	5,730	..	242	..	5,113	..	..	95,542	145,789
Administrative Costs (c)	..	2,026	..	..	..	586	..	..	37,829	65,441
Interest	..	2	..	..	..	23,706	..	..	284	38,423
Current Grants and Subsidies (b)	81	16,410	..	24,116	6,962
Total Current Outlays	..	7,757	..	242	..	29,487	16,410	..	157,771	256,615
Capital Outlays										
Salaries, Wages and Related Payments (c)	8,189	..	..	..	..	..	8,189
Major Building Works & Acquisitions	19,871	..	181	..	..	..	20,052
Fixed Capital Expenditure	7,364
Water Assessment (c)
Project Studies	615	..	..	..	..	..	615
Great Artesian Basin—Rehabilitation	150
Irrigation Areas and Projects—New Works	1,410
Plant and Equipment	..	28	..	267	..	2,657	..	..	14,752	19,717
Capital Grants and Subsidies (b)	..	8	..	1,475	..	..	..	..	..	1,483
Total Capital Outlays	..	35	..	30,417	..	2,838	..	..	14,752	58,981
Financing Outlays										
Redemption of Borrowings Advances	..	11	..	..	..	1,864	..	..	272	2,826
Total Financing Outlays	..	11	..	..	..	1,864	..	..	272	4,304
Total Outlays	..	7,804	..	30,659	..	34,189	16,410	..	172,795	319,899

(a) Significant variations from previous year are discussed in note 5. (b) Details are provided in note 6. (c) Refer note 9.2.

SUPPLEMENTARY INFORMATION TO APPROPRIATION ACCOUNT—continued

Outlays/funding sources (a)	Program (Program Area Code)									
	Office of the Minister for Primary Industries (011)		Animal Industries (081)		Plant Industries (081)		Food Technology (081)		Fisheries and Wetlands Management (081)	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Program Funding Sources	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Consolidated Revenue Fund	..	415	44,285	52,665	20,927	29,334	3,183	4,017	5,678	11,170
Trust and Special Funds										
Banana Industry Fund	334	241	..	..	..	..
Commonwealth Quarantine and Export Inspections Fund	1,852	214	2,378	-119	..	..	..	..
Commonwealth Rural Industry Grants Fund	1,651	268	2,749	459	117	26	192	40
Fisheries Research Fund	551	838
Meat Inspection Account	3,325	3,416	..	..	..	..	..	..
Poultry Industry Fund	1,038	1,110	..	..	..	..	..	..
Primary Industries Department Special Standing Fund	5,936	1,328	2,038	252	165	143	304	-129
Stock Diseases Compensation and Stock Improvement Fund	21	12	..	..	..	..	..	..
Sugar Cane Prices Fund	2,660	2,689	..	..	..	..
Swine Compensation Fund	40	..	..	..	..	..	..	..
Brisbane Forest Park Fund
Forestry Fund
Artesian Bores & Water Supply Areas Working Account
Burdekin River Irrigation Project Fund
Callide Water Supply Fund
Stanwell Water Supply Fund
Water Assessment Fund
Water Resources Construction Fund
Wivenhoe Dam Project Fund
Total Trust and Special Funds	13,863	6,349	10,159	3,522	282	169	1,047	748
Loan Fund
Total Program Funding	415	58,148	59,014	31,086	32,855	3,465	4,186	6,725	11,918
Unrequited Transfers	-737	-2,645	-185	-843	..	-169	..	+66
Net Program Funding	415	57,411	56,370	30,901	32,013	3,465	4,017	6,725	11,984

(a) Significant variations from previous year are discussed in note 5.

SUPPLEMENTARY INFORMATION TO APPROPRIATION ACCOUNT—continued

Outlays/funding sources (a)	Program (Program Area Code)									
	Land Conservation (081)		Agribusiness Services (081)		Technical Services (081)		Corporate Services (081)		Native Forest Production (082)	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Program Funding Sources	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Consolidated Revenue Fund	10,583	13,132	6,688	10,940	12,596	18,130	20,481	23,869	..	..
Trust and Special Funds										
Banana Industry Fund . . . . .	..	..	..	..	..	..	..	..	..	..
Commonwealth Quarantine and Export Inspections Fund . . . . .	..	..	1,300	70	..	..	..	..	..	..
Commonwealth Rural Industry Grants Fund ..	..	6	..	..	27	25	..	..	..	..
Fisheries Research Fund ..	..	..	..	..	..	..	..	..	..	..
Meat Inspection Account ..	..	..	..	..	..	..	..	..	..	..
Poultry Industry Fund . . . . .	..	..	..	..	..	..	..	..	..	..
Primary Industries Department Special Standing Fund	992	373	2,224	843	2,769	821	..	629	..	..
Stock Diseases Compensation and Stock Improvement Fund ..	..	..	..	..	..	..	..	..	..	..
Sugar Cane Prices Fund ..	..	..	..	..	..	..	..	..	..	..
Swine Compensation Fund ..	..	..	..	..	..	..	..	..	..	..
Brisbane Forest Park Fund ..	..	..	..	..	..	..	..	..	..	..
Forestry Fund . . . . .	..	..	..	..	..	..	..	..	..	5,949
Artesian Bores & Water Supply Areas Working Account . . . . .	..	..	..	..	..	..	..	..	..	..
Burdekin River Irrigation Project Fund . . . . .	..	..	..	..	..	..	..	..	..	..
Callide Water Supply Fund ..	..	..	..	..	..	..	..	..	..	..
Stanwell Water Supply Fund . . . . .	..	..	..	..	..	..	..	..	..	..
Water Assessment Fund ..	..	..	..	..	..	..	..	..	..	..
Water Resources Construction Fund . . . . .	..	..	..	..	..	..	..	..	..	..
Wivenhoe Dam Project Fund . . . . .	..	..	..	..	..	..	..	..	..	..
Total Trust and Special Funds	992	379	3,524	913	2,796	846	..	629	..	5,949
Loan Fund . . . . .	..	..	..	..	223	..	..	..	..	..
Total Program Funding	11,575	13,511	10,212	11,853	15,615	18,976	20,481	24,498	..	5,949
Unrequited Transfers . . . . .	..	-391	..	-920	..	-968	..	-636	..	..
Net Program Funding	11,575	13,120	10,212	10,932	15,615	18,008	20,481	23,862	..	5,949

(a) Significant variations from previous year are discussed in note 5.

SUPPLEMENTARY INFORMATION TO APPROPRIATION ACCOUNT—continued

Outlays/funding sources (a)	Program (Program Area Code)									
	Plantation Production (082)		Other Resource Sales (082)		Forest Services (082)		Consultancies (082)		Water Resource Management (083)	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Program Funding Sources										
Consolidated Revenue Fund	..	22,158	..	..	..	4,520	..	..	..	18,156
Trust and Special Funds										
Banana Industry Fund
Commonwealth Quarantine and Export Inspections Fund
Commonwealth Rural Industry Grants Fund
Fisheries Research Fund
Meat Inspection Account
Poultry Industry Fund
Primary Industries Department Special Standing Fund
Stock Diseases Compensation and Stock Improvement Fund
Sugar Cane Prices Fund
Swine Compensation Fund
Brisbane Forest Park Fund	1,014	..	..	..	..
Forestry Fund	43,389	..	1,108	..	6,163	..	746	..	..
Artesian Bores & Water Supply Areas Working Account
Burdekin River Irrigation Project Fund
Callide Water Supply Fund
Stanwell Water Supply Fund
Water Assessment Fund
Water Resources Construction Fund
Wivenhoe Dam Project Fund
Total Trust and Special Funds	43,389	..	1,108	..	7,177	..	746	..	..
Loan Fund
Total Program Funding	65,547	..	1,108	..	11,697	..	746	..	18,156
Unrequited Transfers	-22,158	..	..	..	-4,520	..	..	..	..
Net Program Funding	43,389	..	1,108	..	7,177	..	746	..	18,156

(a) Significant variations from previous year are discussed in note 5.

SUPPLEMENTARY INFORMATION TO APPROPRIATION ACCOUNT—continued

Outlays/funding sources (a)	Program (Program Area Code)									
	Water Advisory and Information Services (083)		Water Conservation, Planning and Development (083)		Corporate Services (083)		Natural Disaster (105)		Total of all programs	
	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90	1988-89	1989-90
Program Funding Sources	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Consolidated Revenue Fund	..	7,741	..	30,659	..	34,189	..	..	124,421	281,095
Trust and Special Funds										
Banana Industry Fund	334	241
Commonwealth Quarantine and Export Inspections Fund	5,530	165
Commonwealth Rural Industry Grants Fund	4,736	824
Fisheries Research Fund	551	838
Meat Inspection Account	3,325	3,416
Poultry Industry Fund	1,038	1,110
Primary Industries Department Special Standing Fund	16,410	..	30,838	4,260
Stock Diseases Compensation and Stock Improvement Fund	21	12
Sugar Cane Prices Fund	2,660	2,689
Swine Compensation Fund	40	..
Brisbane Forest Park Fund	1,014
Forestry Fund	57,354
Artesian Boreas & Water Supply Areas Working Account	63	..	..	..	..	..	..	..	63
Burdekin River Irrigation Project Fund	3,817	..	..	..	3,817
Callide Water Supply Fund	*	*
Stanwell Water Supply Fund	6	..	..	..	6
Water Assessment Fund	4	..	..	..	4
Water Resources Construction Fund	1,961	..	..	..	1,961
Wivenhoe Dam Project Fund	463	..	..	..	463
Total Trust and Special Funds	63	..	..	..	6,251	16,410	..	49,073	78,238
Loan Fund	223	..
Total Program Funding	7,804	..	30,659	..	40,441	16,410	..	173,717	359,333
Unrequited Transfers	-6,251	..	..	-922	-39,434
Net Program Funding	7,804	..	30,659	..	34,189	16,410	..	172,795	319,899

(a) Significant variations from previous year are discussed in note 5 .

* Amount less than \$500.

OTHER FINANCIAL INFORMATION FOR 1989-90

LOSSES OR DEFICIENCIES—	Cases	Losses \$'000	Recoveries \$'000
Public moneys or other moneys due to—			
Stealing or other offence	3	1	1
Debts written off	66	239	..
		<u>240</u>	<u>1</u>
Public property or other property due to—			
Stealing or other offence	49	14	..
Destruction or damage	17	*	..
Inventory shortages where theft suspected	27	3	..
Stores—Overprovisioning	26	8	..
Other Losses	75	2	..
		<u>27</u>	<u>..</u>
Legally unavoidable payment where no value received in return	1	1	..
TOTAL—		<u>268</u>	<u>1</u>

SPECIAL PAYMENTS—	Cases	\$'000
Payments being—		
Ex gratia compensation	3	74
Ex gratia other than to contractors	3	4
TOTAL—		<u>78</u>

\$73 983 was compensation payments for cattle which were infected with enzootic bovine leucosis.

GIFTS—	Made	
	Cases	\$'000
Where total value \$1 000 or more	1	10
Where total value less than \$1 000	28	4
TOTAL—		<u>14</u>

UNEXPENDED ADVANCES TO AGENCY DEPARTMENTS—	\$'000
Department of Administrative Services—Collection Account	1,984
Department of Lands—Collection Suspense Account	1
Department of Lands—Consolidated Revenue Fund	15
Department of Transport—Main Roads Department Special Standing Fund	39
Department of Transport—Harbours Marine Fund	35

* Amount less than \$500.

ACCOUNTS OF DEPARTMENTAL AUTHORITIES—

Transactions and financial balances in respect of departmental instrumentalities or statutory authorities whose accounts or part thereof are incorporated in the departmental accounts but which do not warrant separate publication.

Brisbane Forest Park Administration Authority	Brisbane Forest Park Act 1977-1988
Refer to the Brisbane Forest Park Fund.	
Central Sugar Cane Prices Board	Regulation of Sugar Cane Prices Act 1962-1989
Cane Tester Examining Board	
Refer to the Sugar Cane Prices Fund.	
The Banana Industry Protection Board	Banana Industry Protection Act 1989
Refer to the Banana Industry Fund.	

The Poultry Advisory Board
Refer to the Poultry Industry Fund.

Poultry Industry Act 1988

Joint Committee

Standard Water Supply and Sewerage By-laws as scheduled to the Sewerage and Water Supply Act 1949-1989

The department does not collect revenue on behalf of the Joint Committee. However, the department does provide the cost of support staff for the Committee. Expenditure for the period was \$75,621.

Proston Water Supply Area

Order in Council
4 November 1971

Receipts for the period were \$143,224. Expenditure for the period was \$110,808. This resulted in a surplus of \$32,416.

36 Bore Water Supply Areas

Various Orders in Council of differing dates

Receipts for the period were \$115,784. Expenditure for the period was \$63,236. This resulted in a surplus of \$52,548.

The Plumbers and Drainers Examination and Licensing Board

Sewerage and Water Supply Act 1949-1989

Receipts for the period totalled \$138,253. These were mainly derived from registration and renewal fees which are levied in accordance with the provisions of the Sewerage and Water Supply Act 1949-1989 as prescribed in the Sewerage and Water Supply Regulations.

The department provides the cost of support staff for the Board. Expenditure incurred on fees, allowances and other costs amounted to \$48,563.

No financial balances are held on behalf of the Board.

Departmental instrumentalities or statutory authorities having no material financial transactions or balances for year.

Agricultural Chemicals Distribution Control Board
Agricultural Chemicals Distribution Control Act 1966-1983

Agricultural Requirements Board
Agricultural Standards Act 1952-1981

Artificial Insemination Advisory Committee
Artificial Breeding of Stock Act 1979

Brisbane Forest Park Advisory Planning Board
Brisbane Forest Park Act 1977-1988

Burdekin River Irrigation Project Technical Advisory Committee
Order in Council
7 June 1984

Burdekin River Project Advisory Committee
Order in Council
19 February 1981

Co-ordinating and Advisory Committee on Soil Conservation
Soil Conservation Act 1986

Seed Certification Committee
Agricultural Standards Act 1952-1981

Veterinary Surgeons Board of Queensland
Veterinary Surgeons Act 1936-1986

The financial statement of the Veterinary Surgeons Board of Queensland is published in the Gazette as required by section 31 of the Veterinary Surgeons Act 1936-1986.

NOTES TO THE ACCOUNTS FOR 1989-90 —continued

Note
Ref.

RECEIPTS—

1 Intra Public Accounts—Unrequited Transfers—

Recipient Fund	\$'000	Source Appropriation
1.1 Consolidated Revenue Fund	295	Department of Primary Industries—Consolidated Revenue Fund
	4	Department of Primary Industries—Banana Industry Fund
	165	Department of Primary Industries—Commonwealth Quarantine and Export Inspections Fund
	824	Department of Primary Industries—Commonwealth Rural Industry Grants Fund
	*	Department of Primary Industries—Fisheries Research Fund
	1	Department of Primary Industries—Poultry Industry Fund
	4,260	Department of Primary Industries—Primary Industries Department Special Standing Fund
	1,404	Queensland Electricity Commission, Electricity Works Fund—Construction Expenses, etc.
	3,817	Department of Primary Industries—Burdekin River Irrigation Project Fund
	*	Department of Primary Industries—Callide Water Fund
	6	Department of Primary Industries—Stanwell Water Supply Fund
	4	Department of Primary Industries—Water Assessment Fund
	1,961	Department of Primary Industries—Water Resources Construction Fund
	150	Department of Primary Industries—Wivenhoe Dam Project Fund
	2,585	Receipts were incorrectly classified as Intra Public Accounts—Unrequited Transfers instead of Commonwealth Payments
1.2 Banana Industry Fund	195	Department of Primary Industries—Consolidated Revenue Fund
1.3 Poultry Industry Fund	763	Department of Primary Industries—Consolidated Revenue Fund
1.4 Brisbane Forest Park Fund	1,172	Department of Primary Industries—Consolidated Revenue Fund
1.5 Forestry Fund	26,781	Department of Primary Industries—Consolidated Revenue Fund

* Amount less than \$500.

2 Commonwealth Payments—

Recipient Fund	\$'000	Nature and Source
2.1 Consolidated Revenue Fund	9,436	Bovine Tuberculosis and Brucellosis Program comprises amounts for Eradication \$6,612,022, Compensation \$1,479,959 and Additional Assistance \$1,344,290 from Department of Primary Industries and Energy
	155	Australian Fisheries Service—Special Fisheries, Department of Primary Industries and Energy.
	231	Australian Fisheries Service—Torres Strait Protected Zone, Department of Primary Industries and Energy.
	6,238	Reimbursement by Department of Primary Industries and Energy for quarantine inspections.
	4,612	Rural Industry Research Fund Grants for research, from Department of Primary Industries and Energy.
	2,617	National Soil Conservation Program, Department of Primary Industries and Energy.
	632	Matching Commonwealth Special Rural Research with Industry Contributions, Department of Primary Industries and Energy.
	368	Fisheries Projects, Department of Primary Industries and Energy
	101	Horticultural Quarantine Research Grant, Department of Primary Industries and Energy
	51	Australian Research Council, Department of Employment, Education and Training.
	1,502	Training activities associated with development of primary production of overseas countries—various
	28	Austrade—Australian Trade Commission, Department of Primary Industries and Energy.
	93	Training Aboriginal Program, Department of Employment and Industrial Relations.
	60	National Energy Research, Development and Demonstration Program, Department of Primary Industries and Energy.
	2,243	Federal Water Resources Assistance Program, Department of Primary Industries and Energy, for construction of Burdekin Falls Dam (\$2,143,167) and Great Artesian Basin Water Conservation (\$100,000). A further amount of \$2,584,557 received for the construction of Burdekin Falls Dam under the Federal Water Resources Assistance Program, was incorrectly classified as Intra Public Accounts—Unrequited Transfers. See Note 1.1.
	31	Miscellaneous

An amount of \$312,461 for Queensland Forest Service Dongman Forest Farm Project provided by the Australian International Development Assistance Bureau was incorrectly classified as Receipts for Goods and Services instead of Commonwealth Payments.

A further amount of \$134,385 for Queensland Forest Service Gympie Fuelwood Project provided by the Australian Centre for International Agricultural Research was incorrectly classified as Receipts for Goods and Services instead of Commonwealth Payments.

NOTES TO THE ACCOUNTS—continued

APPROPRIATION ACCOUNT—

3 Dissection of Transfers—

Note Ref. No.	Program Area	Transfers		
		Section 23	Section 24	Section 24A
		\$'000	\$'000	\$'000
3.1	Legislative and Executive Services (011) . . . . .	..	+476	..
3.2	Agriculture (081)			
	3.2.1	+2,654	..	..
	3.2.2 . . . . .	..	..	+3,867
	3.2.3 . . . . .	..	+6,200	..
3.3	Forestry (082)			
	3.3.1	+34,022	..	..
		+63,700	..	..
	3.3.2	+120	..	..
		+1,545	..	..
3.4	Water Resources (083)			
	3.4.1	+110,540	-6,200	..
		+111	..	..
		+3,818	..	..
		+1	..	..
		+7	..	..
		+4	..	..
		+1,962	..	..
		+463	..	..
		<u>+218,947</u>	<u>+476</u>	<u>+3,867</u>

Section 23 Transfers—

- 3.2.1 These transfers represent the unexpended portions of moneys transferred from Department of Harbours and Marine by an Order in Council dated 29 March 1990 issued in pursuance of the provisions of Section 23 of the Financial Administration and Audit Act 1977-1988.
- 3.3.1 These transfers represent the unexpended portions of moneys transferred from Department of Forestry by an Order in Council dated 29 March 1990 issued in pursuance of the provisions of Section 23 of the Financial Administration and Audit Act 1977-1988.
- 3.3.2 These transfers represent the unexpended portions of moneys transferred from Department of Environment and Conservation by an Order in Council dated 29 March 1990 issued in pursuance of the provisions of Section 23 of the Financial Administration and Audit Act 1977-1988.
- 3.4.1 These transfers represent the unexpended portions of moneys transferred from Water Resources Commission by an Order in Council dated 29 March 1990 issued in pursuance of the provisions of Section 23 of the Financial Administration and Audit Act 1977-1988.

Section 24 Transfers—

- 3.1 \$476,237 was transferred from appropriations for Offices of the Ministers, as shown in Treasury Department Appropriation Account to the program, Department of Primary Industries—Office of the Minister.
- 3.2.3 Transfer of \$6,200,000 was approved from Policy Area 08—Agriculture, Forestry and Water Resources, Program Area 083—Water Resources, Department of Primary Industries to offset the deficiency due to award costs and increased expenditure in Boating and Fisheries Patrol.
- 3.4.1 Transfer of \$6,200,000 approved to Policy Area 08—Agriculture, Forestry and Water Resources, Program Area 081—Agriculture, Department of Primary Industries to offset the deficiency due to award costs and increased expenditure in Boating and Fisheries Patrol.

Section 24A Transfers—

- 3.2.2 Transfer of \$3,867,000 was approved from Policy Area 01—General Public Services, Program Area 012—Financial and Fiscal Services—Treasury Department to offset the deficiency due to increased expenditure in the Consolidated Revenue Fund, Brucellosis and Tuberculosis Eradication program.

4 Material Variation from Original Appropriation—

Variations mainly occurred in the following areas for the reasons stated:—

- 4.1 The increase was mainly due to:
 - \$4,442,820—Brucellosis and Tuberculosis Eradication Program—greater than anticipated outlays for operating costs and compensation payments.
 - \$4,320,058—Additional expenditure incurred due to transfer of operations of the Boating and Fisheries Patrol.
 - \$1,520,461—Additional expenditure incurred as a result of award cost increases.
 - \$4,395,100—Additional expenditure incurred on an increased number of externally funded research projects.
 - \$1,040,054—Additional expenditure incurred on Commonwealth Rural Industry Grants funded by the Commonwealth.
- 4.2 Savings due to a decrease in repayable loan funds being made available which resulted in less than anticipated outlays on loan works projects.
- 4.3 The saving was due mainly to:
 - A contractual claim under the main dam contract for the Burdekin Falls Dam is presently subject to arbitration. Therefore, Commonwealth funds were not drawn down as they were not required.
 - Major work which was scheduled to commence in April was delayed due to wet weather. In addition, a major contractor for the Stanwell Water Supply Scheme experienced difficulty in obtaining steel supplies as scheduled.
 - A change in policy whereby capital works were no longer funded by borrowings, leading to a reduction in the requirement for interest and redemption.

5 Significant Variation from Previous Year's Activity—

1989-90 was the first year in which expenditures were accounted for on a program basis. As a result, it has not always been possible to match expenditure records for 1988-89 with the new program structures. In some cases expenditure by program has been estimated using the best available data and applying pro rata techniques where necessary. Notwithstanding this, the total of expenditure for all the department's programs is equal to the actual total expenditure for the department as it is recorded in the Public Accounts.

6 Details of Grants and Subsidies Paid—

The 1988-89 comparisons were not available as the expenditure in program format was estimated using the best available data. Individual grant details were not readily available.

Grants and Subsidies Paid		1989-90 \$'000
6.1 Program: Animal Industries (081)		
Current Grants and Subsidies—		
Grants to Livestock and Meat Authority		525
BTEC		4,635
Miscellaneous Grants		10
TOTAL		<u>5,170</u>
6.2 Program: Plant Industries (081)		
Current Grants and Subsidies—		
Sugar Experiment Stations Board Grant		900
TOTAL		<u>900</u>
6.3 Program: Land Conservation (081)		
Current Grants and Subsidies—		
Miscellaneous Grants		45
TOTAL		<u>45</u>
6.4 Program: Native Forest Production (082)		
Current Grants and Subsidies—		
Taroom Shire Council		9
Kolan Shire Council		2
Kilkivan Shire Council		1
Caloundra Shire Council		1
TOTAL		<u>14</u>
6.5 Program: Plantation Production (082)		
Current Grants and Subsidies—		
Kolan Shire Council		4
Widgee Shire Council		1
TOTAL		<u>6</u>
6.6 Program: Other Resource Sales (082)		
Current Grants and Subsidies—		
Booringa Shire Council		2
TOTAL		<u>2</u>
6.7 Program: Forest Services (082)		
Current Grants and Subsidies—		
Timber Research and Development Advisory Council		404
TOTAL		<u>404</u>
6.8 Program: Water Resource Management (083)		
Current Grants and Subsidies—		
Dumaresq-Barwon Border Rivers Commission		339
Miscellaneous Bodies		2
TOTAL		<u>341</u>
6.9 Program: Water Advisory and Information Services (083)		
Capital Grants and Subsidies—		
East Deeral Drainage Board		5
Woodmillar Water Board		3
Miscellaneous Bodies		1
TOTAL		<u>8</u>
6.10 Program: Water Conservation, Planning and Development (083)		
Capital Grants and Subsidies—		
Dumaresq-Barwon Border Rivers Commission		1,475
TOTAL		<u>1,475</u>
6.11 Program: Corporate Services (083)		
Current Grants and Subsidies—		
Australian Water Resources Council		39
Department of Primary Industries and Energy		24
University of Queensland		7
University College of Central Queensland		6
International Commission on Large Dams		5
Miscellaneous Bodies		1
TOTAL		<u>81</u>

FINANCIAL ASSETS—
7 Loans and Advances—

	Principal 1-7-1989	Advanced 1989-90	Repayments Received	Non Cash Items		Principal 30-6-1990
				Amount	Key	
	\$'000	\$'000	\$'000	\$'000		\$'000
Loans and Advances to Local Authorities, Statutory Bodies, other Bodies and Persons—						
Consolidated Revenue Fund—						
Necessitous Growers Seed Grain Scheme	923	1,449	875	39	a	1,536
Necessitous Growers Seed Wheat Scheme	76	28	83	1	b	23
Refinancing of the Queensland Fish Board*	3,841	713	1,067	..		3,486
TOTAL	4,839	2,190	2,025	40		5,045

Non Cash Items Key—

a = Capitalised interest of \$38,950

b = Capitalised interest of \$ 1,256

* Under the refinancing arrangement approved by Cabinet for the Queensland Fish Board, the total expenditure by the Department to 30 June 1990 was \$8,594,581. An amount of \$5,108,165 was received from lease rentals and the sale of assets leaving the net assistance to date at \$3,486,416. The amount advanced in 1989-90 of \$712,766 includes \$464,469 incorrectly identified as redemption of borrowings in Corporate Services Program (081). See also Note 9.4.

FINANCIAL LIABILITIES—

8 Borrowings and Repayable Advances—

Source of Finance and Servicing Fund	Gross Debt	Loan	Loan	Non Cash Items		Gross Debt	Provision for	Relative	Net Debt
	as at 1-7-1989	Raisings for 1989-90	Redemp- tions 1989-90	Amount	Key	as at 30-6-1990	Debt Service Payments as at 30-6-1990	Sinking Fund Balance as at 30-6-1990	as at 30-6-1990
	\$'000	\$'000	\$'000	\$'000		\$'000	\$'000	\$'000	\$'000
Interfund (Treasury)—									
Non-Guaranteed—									
Forestry Fund*	..	6,526	197	386,815		393,144	..	..	393,144
Brisbane Forest Park Fund	14	200		186	..	..	186
Artesian Bores and Water Supply Areas Working Account	6	18		12	..	..	12
Sub-Total	6,526	217	387,033		393,341	..	..	393,341
Interfund (Queensland Treasury Corporation)—									
Non-Guaranteed—									
Consolidated Revenue Fund	..	30,000	3,227	267,431	a	294,204	717	..	294,922
	..	36,526	3,444	654,464		687,546	717	..	688,263
Commonwealth not incorporated in the Public Debt—									
Non-Guaranteed—									
Forestry Fund*	275	23,001	b	22,726	..	..	22,726
	275	23,001		22,726	..	..	22,726
Domestic—									
Guaranteed—									
Artesian Bores and Water Supply Areas Working Account	5	13		8	..	..	8
	5	13		8	..	..	8
Total	36,526	3,724#	677,478		710,280	717	..	710,997

Due to the amalgamation which occurred on 7 December 1989, borrowings and repayable advances held by the Department of Environment and Heritage, Department of Forestry and the Water Resources Commission were transferred to the Department of Primary Industries as from 1 January 1990.

Key—

a = Following a change in policy for the financing of assets of a social nature, the loan raising of \$30,000,000 drawn in February was redeemed by the Treasury to the Queensland Treasury Corporation on behalf of the Department of Primary Industries. The amount of \$267,431,224 represents the Queensland Treasury Corporation valuation of the Water Resources Commission liabilities transferred net of the \$30,000,000 redemption.

b = This includes an amount of \$710,727 that refers to interest accruing on loan monies advanced under the Softwood Forestry Agreements Act 1978. The Act provides for the payment of interest to be deferred for the first fifteen years and to be capitalised.

The figure for redemption reported in this Note has been compiled using information provided by the Queensland Treasury Corporation. The Queensland Treasury Corporation dissection between interest and redemption was not available at the close of the financial year. The Queensland Treasury Corporation redemption was \$1,362,062 more than the total figure recorded in the Supplementary Information to Appropriation Account. Nonetheless the total of interest and redemption is the same in each instance. Note 9.4 also refers.

* Surplus moneys available in the Forestry Fund are used to repay interest and redemption due on advances and are applied firstly to instalments due on Commonwealth advances, secondly to Special Projects Fund advances, thirdly to interest charges on Treasury indebtedness and lastly to repayment of principal on Treasury advances. Debt service charges on Commonwealth and Special Projects Fund advances have been met in full as they became due. However, debt service charges on Treasury advances have not been met in full since 1960-61. Unpaid interest amounting to \$206,132,335 has not been capitalised.

9 GENERAL NOTES—

9.1 In terms of section 34A of the Financial Administration and Audit Act 1977-1988, the Treasurer has approved that proceeds from the sale of certain motor vehicles can be credited against expenditure votes. Amounts indicated have been credited against the following fund—

	\$'000
Consolidated Revenue Fund	5,800

9.2 An amount of \$2,431,328 for Salaries, Wages and Related Payments and Administrative Costs, included in Current Outlays in the Water Advisory and Information Services Program (083), is attributable to activities of a capital nature. In addition, \$241,605 for Salaries, Wages and Related payments included in Current Outlays in the Water Conservation, Planning and Development Program (083) is attributable to activities of a capital nature.

The correct classifications are shown in the following table:

Program/Outlays	Current Outlays	Capital Outlays	Total
	\$'000	\$'000	\$'000
Water Advisory and Information Services			
Salaries, Wages and Related Payments	4,512	1,218	5,730
Administrative Costs	812		
Water Assessment . . . . .	..	1,214	2,026
Total	5,324	2,431	7,756
Water Conservation, Planning and Development			
Salaries, Wages and Related Payments . . . . .	..	242	242
Total . . . . .	..	242	242

9.3 Due to a posting error, the plant and equipment outlay for Office of the Minister for Primary Industries (011) included \$30,400 for equipment which should have been identified as Corporate Services Program (081).

9.4 Due to a posting error, the redemption of borrowings outlays for Corporate Services Program (081) included \$464,469 which should have been identified as advances on behalf of the Queensland Fish Board. See also Note 7.

CERTIFICATE OF THE DEPARTMENT OF PRIMARY INDUSTRIES

The foregoing statements of the accounts subsidiary to the public accounts have been prepared pursuant to section 37 of the Financial Administration and Audit Act 1977-1988 and other prescribed requirements and we certify that—

- (a) the foregoing financial statements with other information and notes to and forming part thereof are in the form required by the prescribed requirements and are in agreement with the accounts and records of the department;
- (b) in our opinion—
 - (i) the prescribed requirements in respect of the establishment and keeping of accounts have been complied with in all material respects;
 - (ii) expenditure has been correctly charged in accordance with the Financial Administration and Audit Act 1977-1988 and the statements fairly show the disposal of moneys issued out of the public accounts by the Treasurer for the use of the department; and
 - (iii) the foregoing statements have been drawn up so as to present a true and fair view, on a basis consistent with that applied in the financial year last preceding, of the transactions of the department for the period 1 July 1989 to 30 June 1990, and of the financial position as at the close of that year.

Dated this Twenty-eighth day of August 1990.

P.J. BEVIN
Executive Director (Group Co-ordination)
Department of Primary Industries

J.G. MILLER
Director-General
Department of Primary Industries

CERTIFICATE OF THE AUDITOR-GENERAL

I have examined the accounts of the Department of Primary Industries as required by the Financial Administration and Audit Act 1977-1988 and certify as follows—

- (a) I have received all the information and explanations which I have required;
- (b) the foregoing departmental statements of the accounts subsidiary to the public accounts are in the form required by the prescribed requirements and are in agreement with those accounts; and
- (c) in my opinion—
 - (i) the prescribed requirements in respect of the establishment and keeping of accounts have been complied with in all material respects;
 - (ii) moneys issued out of the public accounts by the Treasurer pursuant to the aforementioned Act for the use of the department have been properly accounted for; and
 - (iii) the foregoing statements have been drawn up so as to present a true and fair view, on a basis consistent with that applied in the financial year last preceding, of the transactions of the department for the period 1 July 1989 to 30 June 1990, and the financial position as at 30 June 1990.

Dated this Thirty-first day of August 1990.

P. B. NOLAN
Auditor-General



Appendices

Appendix 1: Staff establishment positions at 30 June 1990

	<i>Salary</i>	<i>Wages</i>	<i>Total</i>
AGRICULTURE GROUPS			
Corporate Services Program	494	38	532
Animal Industries Program	744	175	919
Plant Industries Program	574	91	665
Land Conservation Program	323	11	334
Fisheries and Wetlands Management Program	264	34	298
Agribusiness Services Program	115	2	117
Quality Assurance and Environment Safety Program	297	2	299
Food Industry Program	96	1	97
	2 907	354	3 261
Plus			
Queensland Fish Management Authority	4	4	8
Central Sugar Cane Prices Board	22	1	23
Agriculture Groups Total	2 933	359	3 292
QUEENSLAND FOREST SERVICE			
Native Forest Production Program	134	107	241
Plantation Production Program	246	655	901
Other Resource Sales Program	66	11	77
Forest Services Program	112	146	258
Forest Service Total	558	919	1 477
WATER RESOURCES COMMISSION			
Water Advisory and Information Services Program	263	18	281
Water Conservation Planning and Development Program	281	292	573
Water Resource Management Program	326	162	488
Corporate Services Program	152	-	152
Water Resources Total	1 022	472	1 494
DEPARTMENT TOTAL	4 513	1 750	6 263

Appendix 2: Acts, Regulations and By-laws

The Minister for Primary Industries administers 126 Acts, and 82 Regulations and 40 By-laws made under various Acts.

ACTS

- Agricultural Chemicals Distribution Control Act 1966-1983*
Agricultural Standards Act 1952-1981
Apiaries Act 1982
Artificial Breeding of Stock Act 1979
Banana Industry Protection Act 1989
Barron River Hydro-electric Extension Project Act 1958-1972
Biological Control Act 1987
Brands Act 1915-1989
Brands Act and Another Act Amendment Act 1974
Brands Acts Amendment Act of 1932
Brands Acts and Diseases in Stock Acts Amendment Act of 1941
Bread Delivery Act Repeal Act 1982
Bread Industry Committee Act 1979
Brisbane Milk Board Extension Act 1977
Brisbane Forest Park Act 1977-1981
Brisbane Forest Park Act Amendment Act 1981
Brisbane and Area Water Board Act 1979-1989
Brisbane and Area Water Board Act Amendment Act 1984
Burdekin River Development Acts Repeal Act 1980
Canned Fruits Marketing Act 1981-1988
Charters Towers Water Board Act Amendment Act of 1918
Chemical Usage (Agricultural & Veterinary) Control Act 1988
Chicken Meat Industry Committee Act 1976-1989
City of Brisbane (Flood Mitigation Works Approval) Act 1952--1988
City of Brisbane Market Act 1960-1985
City of Brisbane Market Act Amendment Act 1982
City of Brisbane Market Act and Other Acts Amendment Act 1985
City of Brisbane (North Pine River Dam) Act 1962-1972
City of Brisbane (Water Supply) Act 1959-1989
City of Brisbane (Water Supply) Act and Another Act Amendment Act 1978
Cotton Industry Deregulation Act 1989
Dairy Adjustment Program Agreement Acts 1976 and 1977
Dairy Industry Act 1989
Dairy Products Stabilisation Act Repeal Act 1981
Deer Farming Act 1985-1989
Diseases in Stock Acts Amendment Acts of 1948
Diseases in Stock Acts and Another Act Amendment Act of 1952
Diseases in Timber Act 1975
Eungella State Forest Amendment of Boundaries Act of 1934
Exotic Diseases in Animals Act 1981-1982
Farm Produce Marketing Act 1964-1989
Farm Produce Marketing Act Amendment Act 1986
Farm Water Supplies Assistance Act 1958-1989
Farm Water Supplies Assistance Act and Another Act Amendment Act 1989
Fisheries Act 1976-1989
Fishing Industry Organization and Marketing Act 1982-1989
Fishing Industry Organization and Marketing Act Amendment Act 1987-1989
Fishing Industry Organization and Marketing Act and Other Acts Amendment Act 1989
Forestry Act 1959-1987
Forestry Act Amendment Act 1987
Fruit and Vegetables Act 1947-1988
Fruit Marketing Organisation Act 1923-1985
Gladstone Area Water Board Act 1984-1988
Grain Research Foundation Act 1976
Hen Quotas Act 1973-1987
Hen Quotas Act Amendment Act 1985
Hotel Theodore Lease Enabling Act of 1934
Hotel Theodore Sale Act of 1954
Hotel Theodore Sale Act Amendment Act of 1959
Irrigation Areas (Land Settlement) Act 1962-1972
Liens on Crops of Sugar Cane Act 1931-1981
Local Sugar Cane Prices Boards Confirmation Act of 1915
Meat Industry Act 1965-1989
Meat Industry Act Amendment Acts 1973-1981
Metropolitan Water Supply and Sewerage Acts 1909 to 1962
Metropolitan Water Supply and Sewerage Acts Amendment Acts of 1921
New South Wales-Queensland Border Rivers Act 1946-1968
New South Wales-Queensland Border Rivers Act Amendment Act 1967
Plant Protection Act 1989
Poultry Industry Act 1988
Primary Producers' Co-operative Associations Act 1923-1989
Primary Producers' Organisation and Marketing Act 1926-1989
Primary Producers' Organisation and Marketing Acts Amendment Act of 1946
Primary Producers' Organisation and Marketing Acts Amendment Act of 1954
Primary Producers' Organisation and Marketing Acts and Another Act Amendment Act of 1965
Primary Producers' Organisation and Marketing Act & Another Act Amendment Act 1985
Primary Producers' Organisation and Marketing Acts and Other Acts Amendment Act 1941-1973
Primary Producers' Organisation and Marketing Act and Other Acts Amendment Act 1984
Primary Producers' Organisation and Marketing, Fruit Marketing Organisation, Wheat Pool and Diseases in Plants Act Amendment Act 1930-1984
Queensland Grain Handling Act 1983-1990
Queensland Meat Inspection Agreement Act Repeal Act 1988
Recreation Areas Management Act 1988 (part only)
Recreation Areas Management Act Amendment Act 1990
Regulation of Sugar Cane Prices Act 1962-1989
Rice Industry Stabilization Act 1973
River Improvement Trust Act 1940-1985
River Improvement Trust Acts Amendment Act of 1959
Sawmills Licensing Act 1936-1979
Sawmills Licensing Act Amendment Act of 1965
Sewerage and Water Supply Act 1949-1989

Soil Conservation Act 1986
Soil Survey Act of 1929
Somerset Dam Catchment Area Declaratory Act 1974-1978
Stock Act 1915-1989
Stock Act and Another Act Amendment Act 1978
Stock Act and Other Acts Amendment Act 1973
Stock Acts Amendment Act of 1965
Stock Act and Local Government Act Amendment Act 1989
Sugar Acquisition Act 1915-1990
Sugar Acquisition Act Amendment Act 1982
Sugar Board Act 1966-1982
Sugar Experiment Stations Act 1900-1990
Sugar Experiment Stations Act and Other Acts Amendment Act of 1941
Sugar Milling Rationalisation (Far Northern Region) Act 1987-1989
Swine Compensation Fund Act 1962-1975
Timber Utilization and Marketing Act 1987
Tobacco Industry Stabilisation Act 1965-1972
Torres Strait Fisheries Act 1984
Townsville Water Authority Acts Repeal Act 1987
Townsville/Thuringowa Water Supply Board Act 1987-1988
Tuchekoi State Forest Amendment of Boundaries

Amendment Act 1978

Wheat Marketing (Facilitation) Act 1989
Wheat Pool Act 1920-1989
Wheat Pool Act Amendment Act of 1925
Wheat Pool (Validation of Proclamations) Act 1983
Wheat Pool Act and Another Act Amendment Act 1986
Wine Industry Act 1974-82
Wine Industry Act and Another Act Amendment Act 1978
Wivenhoe Dam and Hydro-electric Works Act 1979-1989

REGULATIONS

Agricultural Chemicals Distribution Control Regulations of 1970
 Agricultural Standards Regulation 1984
 Apiaries Regulations 1983
 Artificial Breeding of Stock Regulations 1981
 Banana Industry Protection Regulations 1989
 Brands Regulations 1987
 Bread Industry Committee Regulations 1986
 Brisbane and Area Water Board (Financial Arrangements) Regulations 1979
 Brisbane Market Trust (Appointment of Licensed Buyers Representative) Regulations
 Brisbane Market Trust Inscribed Stock Regulations

of 1962
 Cane Quality Evaluation Advisory Committee Regulations 1989
 Cattle Reedlot Regulations 1989
 Chemical Usage Regulations 1989
 Chicken Meat Industry Committee Regulations 1989
 Committee of Direction Levy Regulations of 1973
 Dairy Industry Authority Regulations 1985
 Deer Farming Regulations 1985
 Diseases in Plants Regulations 1987
 Diseases in Timber Regulations of 1979
 Exotic Diseases in Animals Regulations 1981
 Farm Produce Marketing Regulations 1984
 Fisheries Regulations 1977
 Fishing Industry Organisation and Marketing Regulations 1989
 Forestry Regulations 1987
 Fruit Marketing Organisation Regulations of 1964
 Fruit and Vegetables Grading and Packing Regulations 1979
 Gladstone Area Water Board (Inscribed Stock) Regulations 1985
 Gladstone Area Water Board (Financial Arrangements) Regulations 1989
 Hen Quota Regulations 1988
 Identification of Stock Regulations 1989
 Meat Industry Regulations of 1973
 Plant Protection Regulations 1990
 Poultry Industry Regulations 1989
 Primary Producers Co-operative Associations Regulations 1987
Regulations under the Primary Producers' Organisation and Marketing Act 1926-1989:

Commodity Marketing Boards Elections Regulations 1987
 Atherton Tableland Maize Marketing Board Levy Regulations of 1936
 Barley Marketing Board Hail Insurance Levy Regulations of 1930
 Central Queensland Egg Marketing Board Regulations 1988
 Central Queensland Grain Sorghum Marketing Board Levy Regulations of 1970
 Central Queensland Grain Sorghum Marketing Board Special Research Levy Regulations 1989
 Cotton Marketing Board General Reserve Revolving Fund Regulations of 1965
 Council of Agriculture Regulations of 1936
 Egg Marketing Board Regulations
 Navy Bean Marketing Board Levy Regulations of 1970
 Peanut Marketing Board Levy Regulations of 1927
 Queensland Cane Growers' Organisation Regulations 1987
 Queensland Dairyfarmers' State Council Regulations of 1947
 Queensland Pork Producers' Organisation Regulations 1990
 Sugar Levies 1987 Season
 Sugar Levies 1988 Season

Sugar Levies 1989 Season
 Sugar Levies 1990 Season
 Tobacco Leaf Marketing Board Levy Regulations of 1948
 Queensland Commercial Fishermen's Organisation Regulations 1989
 Queensland Dairyfarmers' Organisation (Brucellosis Slaughter Out Loss of Income Insurance) Regulations 1989
 Queensland Grain Handling Authority (Elections) Regulations 1990
 Recreation Areas Management Regulations 1989
 River Improvement Trust Regulations 1987
 Sewerage and Water Supply Regulations 1987
 Stock Regulations 1988
 State Wheat Board General Regulations 1987
 State Wheat Board (Elections) Regulations 1988
 Hail Insurance Scheme Regulations 1972
 Hail Insurance Reserve Fund Regulations of 1926
 Sawmills Licensing Regulations of 1965
 Sugar Experiment Stations Regulations 1987
 Timber Utilization and Marketing Regulations 1987
 Tobacco Industry Protection Regulations 1988
 Tobacco Industry Stabilisation Regulations 1988
 Veterinary Surgeons Regulations 1986
Water Resources Act - Regulations made under the Water Act 1926-1987
 No. 1 (Providing for Licensing of Works of Water Supply, Irrigation and Drainage); No. 2 (Artesian and Sub-artesian Wells); No. 3 (Drillers' Licenses); No. 5 (Controlled Quarry Material Regulations of 1968); No. 6 (Establishment of Registry Office); No. 7 (Distribution of Water from Sub-artesian Wells, Contracts re); No. 8 (Interference with Water, prevention of); No. 9 (Unauthorised Works); No., 10 (Straying Stock); No. 11 (Catchment Areas); No. 12 (Preventing and removing nuisances).
 Wine Industry Regulations 1989

BY-LAWS

Brisbane Market By-laws
 By-Law No. 1 Rates and Charges for Alligator Ponds Drainage Board
 By-Law No. 2 Rates and Charges for Babinda Swamp Drainage Board
 By-Law No. 1 Rates and Charges for Brigooda Water Board
 By-Law No. 1 Rates and Charges for Condamine Plains Water Board
 By-Law No. 1 Rates and Charges for Foresthome Drainage Board
 By-Law No. 2 Discounts on Rates and Charges for Prompt Payment for Foresthome Drainage Board
 By-Law No. 1 Rates and Charges for Glamorgan Vale Water Board
 By-Law No. 3 Reconnection Fee for Glamorgan Vale Water Board

By-Law No. 4 Discounts on Rates and Charges for Prompt Payment for Glamorgan Vale Water Board
 By-Law No. 2 Rates and Charges for Loder Creek Drainage Board
 By-Law No. 3 Discounts on Rates and Charges for Prompt Payment for Loder Creek Drainage Board
 By-Law No. 1 Discounts on Rates and Charges for Mandam Drainage Board
 By-Law No. 2 Rates and Charges for Mandam Drainage Board
 By-Law No. 1 Rates and Charges for Matthews Road Drainage Board
 By-Law No. 2 Rates and Charges for Mount Isa Water Board
 By-Law No. 3 Trespass for Mount Isa Water Board
 By-Law No. 1 North Burdekin Water Board
 By-Law No. 3 North Burdekin Water Board
 By-Law No. 1 Rates and Charges for Oaky Creek Water Board
 By-Law No. 1 Rates and Charges for Orchard Creek Drainage Board
 By-Law No. 1 Rates and Charges for Palmgrove Water Board
 By-Law No. 2 Rates and Charges for Ripple Creek Drainage Board
 By-Law No. 3 Discounts on Rates and Charges for Prompt Payment for Ripple Creek Drainage Board
 By-Law No. 3 Rates and Charges for Roadvale Water Board
 By-Law No. 2 Rates and Charges for Smithfield Drainage Board
 By-Law No. 3 South Burdekin Water Board
 By-Law No. 1 Rates and Charges for South Maroochy Drainage Board
 By-Law No. 3 Discounts on Rates and Charges for Prompt Payment for South Maroochy Drainage Board
 By-Law No. 2 Stagnant Creek Drainage Board
 By-Law No. 1 Rates and Charges for Tarampa Water Board
 By-Law No. 2 Discounts on Rates and Charges for Prompt Payment for Tarampa Water Board
 By-Law No. 3 Reconnection Fee for Tarampa Water Board
 By-Law No. 2 Rates and Charges for Wanda Creek Drainage Board
 By-Law No. 2 Rates and Charges for Warrubullen Drainage Board
 By-Law No. 3 Discounts on Rates and Charges for Warrubullen Drainage Board
 By-Law No. 1 Rates and Charges for Washpool Water Board
 By-Law No. 2 Discounts on Rates and Charges for Prompt Payment for Woodmillar Water Board
 Queensland Grain Handling Authority By-laws 1984
 State Wheat Board Meeting By-laws 1988

