

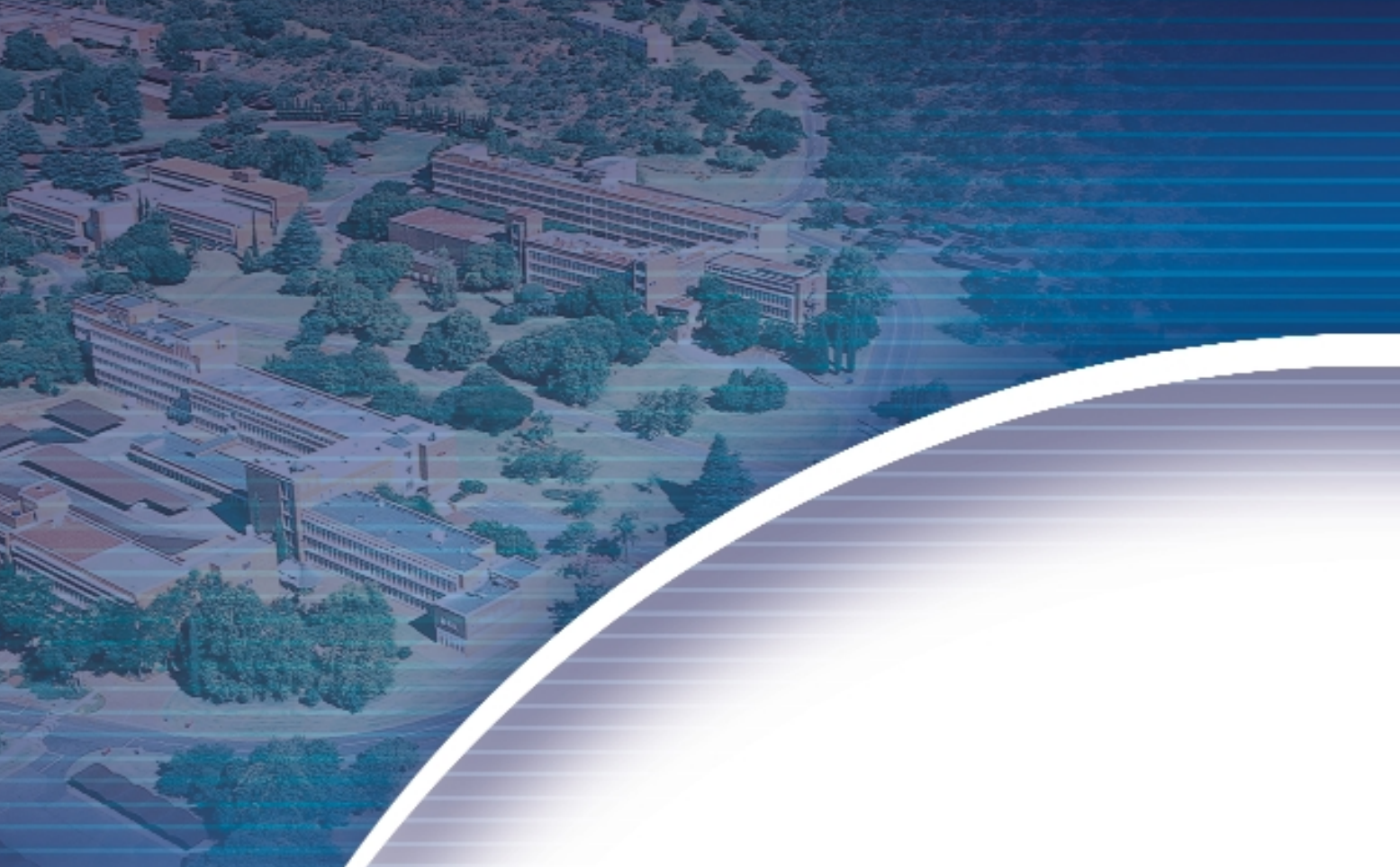
 **CSIR**
Annual Report
2002

2002

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Our Vision

To be the best in technology, leadership and partnering, and - through our people - fight poverty, build global competitiveness and make an enduring difference in people's lives.

Our Mission

As a uniquely South African organisation, the CSIR is committed to innovation. We exist to support sustainable development and economic growth in the context of national priorities and global challenges. We create value for our clients, partners and stakeholders by providing technology solutions and information, establishing ventures and licensing intellectual property.

Our Values - ESPRIT

CSIR people ...

- ... have a passion for **E**xcellence
- ... live **S**ervice, striving to anticipate, meet and exceed the needs of our clients and stakeholders
- ... recognise that it is **P**eople who make things happen - and work towards others' growth and development
- ... strive always for **R**elevance - finding solutions to real needs, making a difference - national priorities are our priorities
- ... are committed to **I**nnovation - our lifeblood: from idea generation through to practical implementation
- ... always with unshakeable in**T**egrity

The background of the cover is a vibrant blue with a white curved line sweeping across the bottom left. The text 'CSIR Annual Report 2002' is prominently displayed in white. The year '2002' is rendered in a large, stylized font where the '0' is a thick vertical bar. To the right of the '0', there is a graphic of a DNA double helix and a bar chart with several vertical bars of varying heights. The overall design is modern and scientific.

CSIR
Annual Report
2002

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Highlights and Achievements



President Mbeki visited the CSIR-Tsilitwa project, which is bringing ICT and its benefits to a rural community.

The technological achievements highlighted in this report demonstrate the diversity of our activities and our commitment to delivering technology solutions that impact positively upon competitiveness, sustainable development and an improved quality of life. A more detailed presentation of our activities during the year is given in Technology Impact, the companion document to this Annual Report.

Presidential recognition

- ▶ French Prime Minister, Lionel Jospin, visited the CSIR's Satellite Applications Centre during his two-day working visit to South Africa in June 2001. A memorandum of understanding, which led to a joint training initiative between France and South Africa, was renewed during the event.
- ▶ The Parliamentary Science and Technology Portfolio Committee acknowledged the innovative transformation at the CSIR. They noted that transformation at the CSIR was clearly about more than demographics: it encompasses a new way of working and of making an impact on our country's national imperatives.
- ▶ President Thabo Mbeki complimented the CSIR-Tsilitwa partnership on the milestones achieved during his visit to the project that is bringing information and communications technologies and its benefits to a rural community in the Eastern Cape.

Some Innovation Highlights

Controlling our borders/decision support/wealth of mining info

- ▶ A code of practice for ports of entry, drawn up by the CSIR in cooperation with a private firm of consultants, represents a milestone in border control. The code is aimed at improving key issues such as facilitation and protection of trade and immigration, collection of duties and prevention of crime, of which vehicle theft and contraband smuggling are key concerns.
- ▶ CSIR technology assisted the Department of Provincial and Local Government in developing a system known as PIMSS.NET, which

provides municipalities with the required support for planning, budgeting and performance management.

- ▶ A multimedia portal (www.miningsa.co.za) has been developed to provide the mining industry with access to a unique source of South Africa-specific mining information.

50 years on/extracting liquorice/employment through crafts

- ▶ The CSIR Roads and Transport Technology business unit (Transportek) celebrated its 50th anniversary in 2001.
- ▶ Utilising technology developed by the CSIR, a successful community-based liquorice extraction plant has been established at Dysselsdorp in the Western Cape. The plant has become a self-sustaining profitable company and will directly benefit the community in which it is located.
- ▶ Major projects are underway throughout the rural areas of South Africa to stimulate the creation of small business enterprises based on traditional craft-work. These projects range from the production of a range of cushions based on the red and white blankets used in the traditional Xhosa initiation ceremony through to a range of functional basketry products, colourful beaded souvenir dolls and leather products.

Beaded décor/protecting our environment/avoiding missiles

- ▶ Products from the Ngove Leather and Beadwork project have been used to decorate the residence of former South African President, Nelson Mandela. The project produces a range of contemporary leather cushions incorporating the traditional handmade metal beads.
- ▶ An Environmental Impact Assessment by the CSIR of proposed expansions to the Hillside Aluminium smelter highlighted a number of concerns regarding the proposed development, which were addressed through technical studies. On review of the project findings, the KwaZulu-Natal Department of Agriculture and Environmental Affairs approved the environmental go-ahead of the development.



- ▶ A Passive Infrared Suppression System, developed by the CSIR, greatly reduces the likelihood of missile lock-on, improves the performance of active countermeasures such as flares and curtails missile tracking rate ability. In the last two decades, up to 90 % of military aircraft losses could be attributed to infrared missiles.

IDEA/treatment for obesity/preferred partner

- ▶ An "Information on Development and Economic Activity" (IDEA) CD provides a user-friendly and adaptable tool that can be applied at all levels of government to facilitate informed decisions on funding allocations and the location of housing projects according to integration and sustainability principles. The CD was developed by the CSIR, in association with the National Department of Housing.

- ▶ The CSIR and the South African San Council signed a Memorandum of Understanding (MoU) in anticipation of the potential commercial success of a patent that followed research and the development of new technology related to the Hoodia plant. If successful, this South African discovery, currently undergoing clinical trials, will be at the centre of a new obesity treatment. The MoU forms the basis of discussions that are expected to lead to a comprehensive benefit-sharing agreement.

- ▶ The CSIR has made great strides in becoming a preferred partner for the world's leading satellite manufacturers and operators in supplying telemetry, tracking and command services over the region. New contracts include support of the Spaceway satellite constellation and Delta IV launches under contract to US-based Boeing Satellite Systems, and, for Lockheed Martin, the rendering of satellite ground support for the NASA Solar Radiation and Climate Explorer and Space Infrared Telescope Facility missions.

Micro-encapsulation/safer mining/safeguarding communities

- ▶ An agreement has been signed by the CSIR and the Industrial Development Corporation for the immediate establishment of a new South African company as the exclusive licensee of the CSIR-developed micro-encapsulation technology. The unique mild

processing conditions of this technology are environmentally friendly and make encapsulation of very sensitive materials, such as vaccines, possible.

- ▶ A prototype seismic counter has been developed to provide early warning of goafing and has the potential to significantly improve both safety and productivity by eliminating the downtime associated with reclaiming continuous miners buried in rock.
- ▶ Following the success of the CSIR's Billiton-funded Safe Communities Project in the Northern Cape, the CSIR ran a similar project for BP South Africa in Umlazi, KwaZulu-Natal. The eThekweni Municipality identified Umlazi as one of its communities with the gravest safety problems.

Combating overloading/conserving our national parks/jobs for Africa

- ▶ Using refined mechanistic design procedures and advanced traffic analysis methods, the decreased life on the N4 toll road resulting from overloaded heavy vehicles was quantified. This reduction in pavement life was translated into a real monetary cost of overloading on the toll road, which now allows the South African National Road Agency to make informed decisions with regard to compensation claims from toll-road operators.
- ▶ In co-operation with the University of Port Elizabeth, the CSIR developed the conservation plan for one of the most exciting projects currently underway in Africa: the expansion of the Addo Elephant National Park in the Eastern Cape into the Greater Addo Elephant National Park, a biodiversity and tourism flagship.
- ▶ A project aimed at strengthening African food processing addresses job creation through the establishment and support of viable small enterprises based on processing agricultural produce. In South Africa, a sweet-making concern and a juice-making co-operative are in the commercialisation phase, while the potential of indigenous juices for commercial export is being evaluated in Senegal, and the CSIR is working on a tomato-processing project in Ghana.

Safe beaches/fair compensation/cooling hot mines

- ▶ A microbiological surveillance programme provides decision support to Durban Unicity for the rational management of its beaches as safe recreational amenities. The surveys also assist Unicity beaches in the successful application of Blue Flag principles, the international incentive scheme that encourages local authorities along the coast to manage their beaches in an environmentally responsible manner.
- ▶ In partnership with a black economic empowerment IT company, the CSIR is developing an integrated mineworkers compensation system. The system aims to improve the efficiency and effectiveness of compensating mineworkers suffering from acute pulmonary complaints, or their beneficiaries.
- ▶ An innovative in-stope air cooler has been developed to provide more effective cooling in the hot stopes of deep South African mines. The air cooler represents a vast improvement over previous technology through a significant increase in the cooler duty to mass ratio and a more compact design.

Justice for all/protection from mines/fibre centre

- ▶ The CSIR Crime Prevention Centre is leading a project team to conduct the right-sizing and development of a zero-based budget for the Department of Justice (DoJ). The project is establishing a demand and supply analysis of DoJ services and applying this on a Geographic Information System to improve delivery of accessible and equitable justice.
- ▶ A unique anti-mine device will be fitted by the CSIR to the hull of the Scarab armoured scout and liaison vehicle that will be shipped to South Africa for blast trials. The device, a composite armour plate, was developed to protect the hull of mine-resistant vehicles from self-forming fragment TMRP-6 mines in the Balkans.
- ▶ The National Fibre Centre, a joint initiative between the Department of Trade and Industry, the CSIR and the National Plant Fibre Cluster, provides the textile industry in South Africa and the Southern African Development Community with technical expertise and state-of-the-art equipment to assist it in becoming globally competitive and sustainable.

Combating child abuse/sustainable construction/metrology in Africa

- ▶ The CSIR is leading a project team in conducting a skills audit for volunteers involved in reducing child abuse and combating the traumatic effects of child abuse on victims as witnesses in the criminal justice system. The outcomes of the skills audit will be included in a database of organisations accredited to recruit, train and manage volunteers in the sector.
- ▶ Key issues and challenges facing sustainable construction in the developing world will be identified through the Agenda 21 for Sustainable Construction in Developing Countries. The project was commissioned by the International Council for Research and Innovation in Building and Construction and the United Nations Environment Programme's International Environmental Technology Centre.



The CSIR's Process Biotechnology area applies the Accelrys suite of protein molecular modelling software for protein homology modelling, rational drug design and a large number of other bioinformatics tools.

- ▶ The CSIR metrology services are increasingly being utilised throughout Africa. Recent developments include an international tender for the design and construction of a mobile metrology laboratory for Mozambique, and the provision of assistance in the establishment of Mass and Volume Laboratories in Maputo.

World-class platform/expert info/stimulating SMMEs

- ▶ The African Centre for Gene Technologies (ACGT), an initiative by the CSIR and the University of Pretoria, intends to create a world-class platform in gene technologies. The ACGT will provide an integrated platform to undertake projects from conception to commercialisation in the fields of genomics, proteomics and bioinformatics.
- ▶ A web-based, integrated freight and logistics product, known as Iflo, supports the transportation industry in southern Africa through information-sharing and an e-commerce-enabled catalogue, from which clients can purchase papers, products, forecasts and tools.
- ▶ The CSIR has put together a development process to assist small, medium and micro enterprises (SMMEs) in aspects such as the establishment of sustainable manufacturing enterprises and the implementation of a range of competitiveness improvement services to enterprises. SMMEs are often the vehicle by which entrepreneurs from all socio-economic levels gain access to economic opportunities.

Seeds for the future/selecting winners/centre of excellence

- ▶ Two Section 21 companies have been registered and one Close Corporation is being supported by the Seeds for a Better Future project. The main aim of this project is technology transfer to the rural communities to enable them to manage a seed orchard.
- ▶ The CSIR was closely involved in the Peoples Bank/Sunday Times Awards for Technology Achievement process, through interviews with entrants and assistance to participants for the adjudication

process. The inaugural award ceremony of the Peoples Bank/Sunday Times Awards for Technology Achievement was combined with the 2001 Technology Top 100 Awards and the President's Awards for Export Achievement.

- ▶ The CSIR's National Product Development Centre was appointed as an International Centre of Excellence for engineering analysis by Rolls-Royce and will be responsible for the engineering analysis work on one family of Rolls-Royce gas turbine engines.

Transferring technology/focal point/revolutionary lining/asphalt academy

- ▶ A Technology Transfer Centre has been established in co-operation with the United States Federal Highways Administration. The centre will serve as a clearing house of information for the region and as the permanent Regional Technology Transfer Centre for the Association of Southern African National Road Agencies.
- ▶ The CSIR was again contracted to serve as the African regional focal point for 42 African Research and Technology Organisations by the World Association for Industrial and Technological Research Organisations (WAITRO), under the new WAITRO Secretariat hosted in Malaysia.
- ▶ In collaboration with the University of Pretoria, a revolutionary corrosion protecting lining has been developed specifically for use in the pressure vessel industry, especially household applications. The polyethylene-based material was designed with an adhesive polymer and has successfully passed tests used to determine the adhesion properties.
- ▶ An Asphalt Academy has been established in association with the South African Bitumen Association to promote and provide continuing education and technology transfer for the bitumen industry.

Recognition for our Achievements

- ▶ The CSIR received a silver award for Best Sustainability Disclosure in an Annual Report in the Public Entities category of KPMG's 4th Annual Sustainability Reporting Survey.
- ▶ The CSIR received a Silver Arrow award in the PMR Intelligence's annual survey of State Owned Enterprises (SOEs) and parastatals, designed to assess their overall business efficiency and contribution to social development in South Africa.
- ▶ The CSIR was recognised by the Black Management Forum as one of the top ten SA companies making a genuine impact in the empowerment of South Africa.
- ▶ Dr Namane Magau was voted Human Resources Practitioner of the Year by the Institute of People Management (IPM).
- ▶ Dr Heather MacKay was one of the 14 women who were recognised for their contributions in the water management industry in South Africa in the first Women in Water Awards made by the Department of Water Affairs and Forestry.
- ▶ The Foreign Missile Exploitation Team won the prestigious Armscor Chairman's Award.
- ▶ CSIR Transportek received the 4th International Transport Award (Millennium Award) in Paris, France.
- ▶ Veronica Rammala received the DESS (Diplôme d'Études Supérieures Spécialisée) Postgraduate Diploma in Remote Sensing, which is awarded jointly by the Universities of Paris and Toulouse.
- ▶ Dr Franz Hengstberger became the first person from Africa to be appointed a member of the prestigious International Committee of Weights and Measures (Comité International des Poids et Mesures, CIPM).
- ▶ Boyse Pillay, Bert Meyer and Arrie Kruger were part of the Sisal Fibre Project Team which was awarded the 2001 DaimlerChrysler Environmental Leadership Award.
- ▶ Brett Johnson received the PISA (Plastics Institute of Southern Africa) Top Student Award for studies in B.Tech. at Pretoria Technikon.
- ▶ Dr Ray Durrheim won the annual Salomon Award for the best paper by a member of the South African Institute of Rock Engineering, together with his co-author, Professor Alexander Linkov of the VNIMI, St Petersburg.
- ▶ Zakhiti Msimang was appointed by Minister Alec Erwin to the Trade Metrology Board.
- ▶ Hans Ittman was elected as President of the Operations Research Society of South Africa for the second time.
- ▶ Dr Willie du Preez was elected as chairperson of the 2002 management committee of the Rapid Product Development Association of South Africa.
- ▶ Lisa Cavé won the award for best overall poster at the 10th International Symposium of Water Rock Interactions held in Sardinia, Italy. The University of Cape Town awarded a scholarship to Lisa, a Ph.D. student at the university, to present her research at the conference.
- ▶ Dr Wynand Steyn won the award for the best paper presented at the 20th South African Transport Conference, together with Dr Alex Visser from the University of Pretoria.
- ▶ For the second year in a row, Bharath Belle, Jan du Plessis and Kobus van Zyl won the South African Colliery Manager's Association (SACMA) prize for the best coal-related paper.
- ▶ Grant Cambridge has been certified a Project Management Professional by the Project Management Institute (PMI), a leading non-profit project management professional association.

Chairman's Review



San representatives met with the CSIR for benefit sharing talks on a possible future anti-obesity product.

The year under review has been a demanding one, with tough economic conditions and an unstable currency adding to the complexity of achieving a real transformation of South Africa to the benefit of all communities.

However, it is encouraging to note how successful the CSIR has been in the key role it plays in harnessing the power of science and technology for the sustained development and growth of our country.

This was reinforced by the Parliamentary Science and Technology Portfolio Committee which visited the CSIR in September 2001. They recognised the considerable shift at the CSIR in aligning its activities with our national priorities, while at the same time functioning successfully within a global context.

Acknowledging that transformation is not just about demographics, the Committee called upon the CSIR to build on its past successes and continue to use its research skills innovatively in the transformation of this country. The importance of the science councils working together was also emphasized, as it is only by operating across disciplines and boundaries that we will be able to find holistic solutions to the challenges facing South Africa.

Praise for the CSIR also came from President Thabo Mbeki, who visited a CSIR project in the rural community of Tsilitwa in the Eastern Cape. President Mbeki highlighted the manner in which this information and communications technology project is profoundly changing the lives of this community, until recently cut off from the world and facing numerous difficulties regarding basic services and infrastructure.

Forming Partnerships

While the CSIR works in concert with its sister science councils to find solutions to the national imperatives, it has also sought partnerships with other complementary organisations. These efforts include government, industry and tertiary education institutions. A major initiative in recent years was the establishment of the Southern Education and Research Alliance (SERA) between the

University of Pretoria (UP) and the CSIR. In addition, the CSIR has a number of other invaluable relationships with universities and technikons throughout South Africa.

The signing of the institutional framework for co-operation between the Department of Trade and Industry and the CSIR has resulted in a number of projects aimed at facilitating access to sustainable economic activity and employment for South Africans.

Regional Development

The CSIR's mandate is to give priority to South Africa; however, the launch of the New Partnership for Africa's Development (NEPAD) initiative brings to prominence that this country cannot view itself in isolation from the rest of the continent.

As a leading science and technology supplier, the CSIR has a key role to play in supporting the NEPAD process. It is currently working in 18 countries in Africa on projects ranging from the development of new drying techniques for shelf stable fruits, to assisting in the development of safe waste disposal techniques. It also acts as the Regional Focal Point for the Africa region of the World Association of Industrial and Technological Research Organisations (WAITRO).

A strategic framework has been implemented at the CSIR to co-ordinate its support for NEPAD and to manage the many interactions that it has with the rest of Africa. Task teams have been established to draw together complementary skills across the various business units and to provide a truly multidimensional approach in the areas identified as springboards for growth in Africa. These include infrastructure, peace and security, manufacturing and information and communications technology.

Globally Competitive

With 85 % of international expenditure on science and technology occurring in OECD countries, the CSIR's international business development strategy aims to establish a comprehensive portfolio of relationships, particularly in the USA, western Europe and Australia. In addition to established CSIR footprints in Houston and London, and a joint venture with an Australian-based international



consultancy company, the organisation's international portfolio includes alliances with leading multinational corporations, such as Shell and Siemens, knowledge-generating relationships with knowledge-intensive technology organisations (KITOs), and close associations with global leaders and opinion-makers.

The success of the CSIR's efforts to expand its involvement in the international markets is evident in the fact that the organisation's fastest growing source of income comes from the international sector, including Africa. Over the past three years, this income has grown by some 20%.

The past year has yielded numerous examples of how well regarded the CSIR is on the international market for the excellence of its science and technology solutions. The organisation has been designated a preferred centre of excellence by Rolls-Royce Corporation, while several new contracts marked its progress in becoming a preferred partner for the world's leading satellite manufacturers and operators. It was also highly successful in obtaining European Commission projects, which will impact significantly on food safety throughout our African continent.

Enabling Environment

As a learning organisation, the CSIR focuses on developing an enabling environment and the nurturing of skills to enable the organisation to respond to the internal and external dynamic challenges in its environment. These efforts have contributed to the organisation's success in striking a balance between being both globally competitive and regionally relevant. Dr Namane Magau, who recently left the organisation, has, as Executive Vice President: Human Resources, been the guiding force behind the CSIR's highly effective people management. I would like to thank her for her inspiring contribution to the CSIR.

The CSIR has completed a successful year, both technically and financially, and has again experienced good growth in its external operating income. In the difficult market conditions of 2001/2002, the organisation reported a year-on-year growth in its external operating income of 17.2 %. For this excellent performance, I must

thank Albert Jordaan, Acting President and CEO of the CSIR and the members of the Executive Management Team for their outstanding leadership during the past year.

I would also like to thank Dr Ntoana Tau-Mzamane for her contribution as a CSIR Board Member. She resigned during the year due to her new position as President of the Agricultural Research Council (ARC).

I would like to welcome the newly appointed president and CEO, Dr Sibusiso Sibisi, to the CSIR. I am sure that under his leadership the CSIR will continue in its growth as a key provider of science and technology, locally and globally, making an enduring difference in the lives of all people.

Thank you to my fellow Board members, and to the people of the CSIR for their support and dedication over this past year.

Mr Roger Jardine
Chairman

CSIR Board Members



Mr Roger Jardine
Chief Executive Officer, Kagiso Media



Dr Zavereh Rustomjee
Special Advisor to the Minister,
Department of Trade and Industry



Prof Anton Eberhard
IIRR Management Programme,
Graduate School of Business, UCT



Dr Dhiro Gihwala
Dean, Faculty of Science, Peninsula
Technikon



Ms Anne Letsebe
Deputy Director-General, Office of the
President and Head of the Cabinet Office



Ms Joan Joffe
Group Executive, Corporate Affairs,
Vodacom



Ms Nobusi Shikwane
CEO, B2B Africa Holdings



Dr Ntoana Tau-Mzamane
Deputy Director-General, Science and
Technology, Department of Arts,
Culture, Science and Technology



Mr Eugène van As
Executive Chairman, SAPPi Limited



Mr Kymus Ginwala
Founder and former President,
Northern Research and Energy
Corporation, Boston, USA



Report by the Auditor-General



Innovative technology provides more effective cooling in the hot South African gold mines.

Report of the Auditor-General to parliament on the financial statements and group financial statements of the Council for Scientific and Industrial Research for the year ended 31 March 2002

1. Audit assignment

The financial statements and group financial statements as set out on pages 13 to 54, for the year ended 31 March 2002, have been audited in terms of section 188 of the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), read with sections 3 and 5 of the Auditor-General Act, 1995 (Act No. 12 of 1995) and the Council for Scientific and Industrial Research Act, 1988 (Act No. 46 of 1988). These financial statements, the maintenance of effective control measures and compliance with the relevant laws and regulations are the responsibility of the accounting authority. My responsibility is to express an opinion on these financial statements, based on the audit.

The performance information contained in the executive report for the year ended 31 March 2002 as set out on pages 15 to 16, is the responsibility of the accounting authority. My responsibility is to provide an assessment of the fairness and consistency of the CSIR's performance information. My role is not to evaluate or comment on the entity's actual performance.

2. Nature and scope

2.1 Audit of financial statements

The audit was conducted in accordance with Statements of South African Auditing Standards. Those standards require that I plan and perform the audit to obtain reasonable assurance that the financial statements are free of material misstatement.

An audit includes:

- examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements,
- assessing the accounting principles used and significant estimates made by management, and
- evaluating the overall financial statement presentation.

Furthermore, an audit includes an examination, on a test basis, of evidence supporting compliance in all material respects with the

relevant laws and regulations which came to my attention and are applicable to financial matters.

I believe that the audit provides a reasonable basis for my opinion.

2.2 Audit of performance information

The audit of the performance information embraced the standard for assurance engagements issued by the Auditing Standards Board.

I assessed the performance information against the criteria for fair and consistent performance information.

I believe that the audit provides a reasonable basis for my opinion.

3. Audit opinion

3.1 Audit of financial statements

In my opinion, the financial statements fairly present, in all material respects, the financial position of the CSIR and the group at 31 March 2002 and the results of their operations and cash flows for the year then ended in accordance with South African Statements of Generally Accepted Accounting Practice and in the manner required by the Public Finance Management Act, 1999 (Act No. 1 of 1999).

3.2 Audit of performance information

In my opinion, the performance information furnished in terms of section 55(2)(a) of the Public Finance Management Act, 1999 fairly presents, in all material respects, the performance of the CSIR for the year ended 31 March 2002 against predetermined objectives on a basis consistent with that of the preceding year.

4. Appreciation

The assistance rendered by the staff of the CSIR during the audit is sincerely appreciated.

H van Zyl
for Auditor-General
Pretoria

Corporate Governance



NEPAD presents a significant opportunity for the CSIR to make a contribution to the development of Africa, and the CSIR has a key role to play in supporting the NEPAD process. To facilitate this, a CSIR framework has been formulated to manage our response and contribution to NEPAD.

Governance Principles

Framework

Corporate Governance, formally, is concerned with the organisational arrangements that have been put in place to provide an appropriate set of checks and balances within which the stewards of the organisation operate. The objective is to ensure that those to whom the stakeholders entrust the direction and success of the organisation act in the best interest of these stakeholders. It is about leadership with integrity, responsibility and transparency.

The group is committed to principles and practices that will provide our stakeholders with the assurance that the organisation is managed soundly and ethically. We have established a management model which governs and provides guidance for the way that all employees, not just the leaders, interact with our various stakeholder groups.

The underpinning principles of the group's corporate governance rest upon the three cornerstones of an effective and efficient organisation, namely day-to-day management processes, a long-term strategic planning process and effective transformation processes. These processes are supported by systems which are used to plan, execute, monitor and control the strategic and operational domains of the organisation. The supporting infrastructure and its evolution are documented in our management model which is regularly reviewed and updated.

The CSIR Board and the Executive Board believe that the organisation has applied and complied with the principles incorporated in the Code of Corporate Practices and Conduct as set out in the King Report.

Financial statements

The CSIR Board and the Executive Board are responsible for the preparation and integrity of the annual financial statements and related financial information included in this Annual Report. The financial statements are prepared in accordance with South African Statements of Generally Accepted Accounting Practice.

The external auditor is the Auditor-General, and is responsible for independently auditing and reporting on the financial statements in conformity with Statements of South African Auditing Standards. These terms of reference do not allow for any non-audit work.

Statement by Audit Committee on financial statements

The Audit Committee reviewed these financial statements and do not believe there are any matters that require further comment by this Committee.

Risk management

In the case of risk management, the CSIR Board retains control through the final review of key risk matters affecting the organisation. The focus of risk management in the CSIR is on identifying, assessing, managing and monitoring all known forms of risk across all business units and group companies. CSIR systems have been put in place to review aspects of economy, efficiency and effectiveness. Management is involved in a continuous process of improving procedures to ensure effective mechanisms for identifying and monitoring risks, such as skills, technology, contracting, HIV and Aids, reputation, Parliamentary Grant, legislation compliance, professional liability and general operating risks. Equal consideration is given to matters of safety, health and the environment as to the more obvious risks such as financial risks.

Operating risk management

The CSIR endeavours to minimise operating risk by ensuring that the appropriate infrastructure, controls, systems and people are in place throughout the group. Key practices employed in managing operating risk include segregation of duties, transaction approval frameworks, financial and management reporting and monitoring of metrics, which are designed to highlight positive or negative performance across a broad range of key performance areas.

Financial risk management

Financial risks are managed within predetermined procedures and constraints as identified and detailed in the various policies and the setting of annual goals and objectives. Compliance is measured through regular reporting against the business goals, internal audit checks and external audit verification.



The CSIR participated in Science and Technology (SET) week activities.

Approval framework

The CSIR Board has adopted an approval framework, which governs the authorisation processes in the CSIR. It deals with, *inter alia*, the construction of strategic plans, development of business plans and budgets, appointment of bankers and key service suppliers, appointment of personnel, approval of salaries and acquisition and disposal of assets. It also defines authority levels in relation to organisational position.

Appropriate controls exist to ensure compliance with this framework. A comprehensive set of procedures exists to provide the necessary checks and balances for the economical, efficient and effective use of resources. The essence of this framework is that it is comprehensive, clear and unambiguous, and easy to assimilate and internalise.

Each group company's board of directors adopted an approval framework, which mirrors that of the CSIR. All group companies are under the control of the CSIR Board and Executive Management.

Internal control

The CSIR Board has ultimate responsibility for the system of internal controls. The key controls required to ensure the integrity and reliability of financial statements have been identified in conjunction with the internal and external auditors. Close co-operation between the external auditors and internal auditors ensures adequate and efficient audit reviews of the proper functioning of these key controls.

The annual audit plan is based on the key financial risks to the organisation. The work programme that gives effect to the plan is reviewed by the Audit Committee at their November meeting and ratified or modified, as necessary.

Statement by Audit Committee on Internal Controls

The Audit Committee is satisfied that controls and systems have been put in place to reduce risk to the organisation to an acceptable level and that these controls have been effective during the period under review.

Employee participation

The CSIR strongly encourages effective and modern workplace practices and relationships to foster employee participation and work process involvement as a key practice at all levels in the organisation. Employee participation happens, for example, through self-directed teams, transformation action groups, union representation, a leadership development programme, technical and strategic focus groups and task teams, and employee satisfaction measurement processes.

Charter of Ethics and Organisational Values

The CSIR Board and Executive Board have approved and adopted a Charter of Ethics, which reflects its commitment to a policy of fair dealing and integrity in conducting its business. The Charter, which incorporates the CSIR's Code of Conduct and links closely to its set of values, requires all employees to maintain the highest ethical standard, ensuring that business practices are conducted in a manner which, in all reasonable circumstances, is beyond reproach. Monitoring ethical behaviour is devolved to business unit level and transgressions are addressed by means of procedures detailed in the CSIR's Conditions of Service and Public Finance Management Act requirements. Our annual employee survey includes, by design, questions formulated to determine the organisational climate as it relates to values and ethics. The results from the survey are used to inform and adapt, as necessary, internal processes linked to these issues, such as the ongoing values entrenchment process.

The Board is satisfied there has been compliance with the Charter of Ethics.

Safety, Occupational Health and Environmental Management (SHE)

As a corporate citizen, the CSIR acknowledges its obligation to its employees and the communities it serves to conform in its operations to safety, health and environmental laws and the internationally accepted standards and practices. Its commitment to provide a safe and healthy workplace for its employees is demonstrated by the CSIR's achievement of a 4-star rating, co-audited by the National Occupational Safety Association (NOSA).



In 1997, the CSIR commenced with the implementation of the internationally recognised Environmental Management System, ISO 14001, which included the development, publication and adoption in 1998 of an Environmental Policy for application throughout the organisation at all its sites.

Governance structures

CSIR Board

The CSIR Board approves the mission, strategy, goals, operating policies and priorities for the organisation and monitors compliance with policies and achievement against objectives.

CSIR Board members are appointed for a term of three years by the Minister of Trade and Industry. With the exception of the President of the CSIR, all the members of the CSIR Board are non-executive. CSIR Board members are actively involved in, and bring independent judgement to bear on Board deliberations and decisions. A formal system is in place to evaluate Board member participation and performance. The CSIR Board, whose current number of members meets the statutory minimum requirement, meets quarterly. For the year under review, the Board met on 13 June, 28 August, 16 November 2001 and 20 February 2002. The CSIR Board has the following committees: the Human Resources and Remuneration Committee, the Audit Committee, the Mergers, Acquisitions and Commercialisation Committee and the Strategic Review Committee (see page 12). These committees comprise members of the CSIR Board and CSIR Vice-Presidents ex-officio. The members are selected according to the skills sets required for the committees to fulfil their functions. The committees have complied with the respective terms of references.

An important initiative is a formal and structured Board induction process designed to give new Board members an understanding of the business and the risks associated therewith.

Executive Management Board

The Executive Management Board has executive responsibility for the CSIR and consists of the Chief Executive Officer (CEO) and five Executive members responsible for the portfolios of Finance and Commercialisation; Human Resources; Technology for Development and Policy; Information; Technology and Business Development. The Executive Board meets biweekly.

CSIR Management Board

The CSIR Management Board is responsible for strategy implementation and managing the day-to-day affairs of the CSIR and its business units in accordance with the policies and objectives approved by the CSIR Board. This Board comprises the members of the Executive Board, together with the eight business unit directors (profiled in Technology Impact). The Management Board meets twice monthly.

The Chief Executive Officer of the CSIR is the President, whose business address is given on the inside cover of this report.

Board of Directors of Group Companies

The CSIR Executive has control over the Boards of the various group companies.

General

The CSIR acknowledges that systems of corporate governance should be continuously reviewed to ensure that they are sound and consistent with world-class standards in a way that is relevant to the business of the group and the evolution thereof.

We will continue to comply with all major recommendations of the Code of Corporate Practices and Conduct as set out in the King Report on Corporate Governance.

The coming into effect of the King II Report on 1 March 2002 has necessitated responses by the CSIR that will ensure compliance by the end of the 2003 financial year.

PFMA

The Public Finance Management Act, Act No 1 of 1999, came into effect on 1 April 2000 and has had an impact on governance matters in terms of the regulation of Financial Management in the public sector. The group complies, in all material aspects, with the Act.



The Planning and Implementation Management Support System (PIMSS) aims to provide local municipalities with the required support for planning, implementation and performance management.

CSIR Board committees 2001/2002

COMMITTEE: *AUDIT*

Members: Mr Eugène van As (Chairman)
Dr Dhiro Gihwala
Ms Nobusi Shikwane
Prof Anton Eberhard
Dr Sibusiso Sibisi (from 01.01.2002)
Mr Albert Jordaan (ex-officio)

Meetings: 07.06.2001
21.11.2001

Purpose: Deals with all matters prescribed by the regulations issued in terms of the Public Finance Management Act, Act 1 of 1999. Controls the final reviews of the key risk matters affecting the organisation. Agrees on the scope and reviews the annual external audit plan and the work of the CSIR corporate auditors. Acts in an unfettered way to understand the dynamics and performance of the organisation with no artificial boundaries created by protocol.

COMMITTEE: *HUMAN RESOURCES AND REMUNERATION*

Members: Mr Roger Jardine (Chairman)
Ms Nobusi Shikwane
Ms Joan Joffe
Ms Anne Letsebe
Dr Sibusiso Sibisi (from 01.01.2002)
Mr Albert Jordaan (ex-officio)
Dr Namane Magau (ex-officio)

Meetings: 24.05.2001
23.08.2001

Purpose: Provides the vehicle for the CSIR Board to influence and control human resources and remuneration in the organisation. Determines human resource policy and strategy. Approves remuneration changes and bonus payments.

COMMITTEE: *MERGERS, ACQUISITIONS AND COMMERCIALISATION*

Members: Mr Roger Jardine (Chairman)
Ms Joan Joffe
Dr Zavareh Rustomjee
Mr Kymus Ginwala
Dr Sibusiso Sibisi (from 01.01.2002)
Mr Albert Jordaan (ex-officio)
Dr Anthos Yannakou (ex-officio)

Meetings: 07.03.2002

Purpose: Reviews the strategic viability of any proposed merger or acquisition of significance. Reviews the principles involved in contractual arrangements. Advises on negotiating processes in merger, acquisition or commercialisation processes. Makes appropriate recommendations to the CSIR Board on whether the relevant acquisition or merger is in the interests of the stakeholders.

COMMITTEE: *STRATEGIC REVIEW COMMITTEE*

Members: Dr Zavareh Rustomjee (Chairman)
Prof Anton Eberhard
Dr Dhiro Gihwala
Dr Sibusiso Sibisi (from 01.01.2002)
Dr Anthos Yannakou (ex-officio)

Meetings: 12.07.2001
01.11.2001
14.02.2002

Purpose: Provides guidance and advice on the long-term trajectory and composition of the CSIR's science and technology portfolio in the context of the needs of the country. Ensures that key innovation and research processes are conducted effectively and benchmarked against international best practice, and that research outputs, organisational climate and credibility remain congruent with the role and objectives of the institution.

Executive Report



The CSIR has made great strides in becoming a preferred partner for the world's leading satellite manufacturers and operators in supplying telemetry, tracking and command services over the region.

On behalf of the CSIR Board, we have pleasure in submitting to Parliament, through the Minister of Trade and Industry, this report and the audited financial statements of the CSIR group for the year ended 31 March 2002.

In the opinion of the CSIR Board, who fulfil the role of directors as envisaged by the Companies Act, Act 61 of 1973, the financial statements fairly reflect the financial position of the CSIR group as at 31 March 2002 and the results of its operations for the year then ended.

Introduction

The mandate of the CSIR gives priority to the "national interest" (sustainable development and growth) of South Africa, assisting the country "through directed and multi-disciplinary research and technological innovation" to compete globally while helping to build a better world at home. However, the launch of the New Partnership for Africa's Development (NEPAD) initiative has underscored the part South Africa has to play in the sustainable growth of the African continent as a whole. As the leading science and technology provider on the continent, the CSIR has a key role to play in supporting this initiative.

At the same time, the CSIR needs to ensure its continued survival as an externally focused, financially sustainable research organisation. Amongst its key challenges are therefore to increase scientific excellence while growing its external income through focused business development, locally, regionally and internationally, taking cognisance of the demographic profile of South Africa.

Our activities in the year under review demonstrate the CSIR's success in achieving a balance between contributing to the upliftment of South Africa and the African continent, and the imperative to be a contract research organisation.

The activities of the subsidiaries, joint ventures and associated companies are referred to under the headings: Key initiatives, Commercialisation and Our subsidiaries (pages 24 and 25).

Acts and Legislation

As a statutory research council, established by Government, the CSIR is governed by the Scientific Research Council Act (Act 46 of 1988, as amended by Act 71 of 1990). We are listed as a Public Business Enterprise in terms of the Public Finance Management Act, Act 1 of 1999, as amended by Act 29 of 1999.

Our mandate

The CSIR's Act records our mandate as follows, 'In the national interest, the CSIR, through directed and multi-disciplinary research and technological innovation, should foster industrial and scientific development, either by itself, or in partnership with public and private sector institutions, to contribute to the improvement of the quality of life of the people of South Africa'.

Function and objectives

The nature of our business

Within the framework of our mandate, we source and develop knowledge and technology that enables us to provide technology solutions and information, establish ventures and license intellectual property. We support sustainable development and economic growth in the context of our country's national priorities and global challenges.

The focus of our Parliamentary Grant investment remains centred around the key initiatives of the National System of Innovation, and the complementary priorities of the government.

The essence of our strategy

The CSIR's vision, mission and values provide us with a solid foundation for the years ahead. Our mission acknowledges that global challenges have become our challenges, that relationships with our partners, clients and stakeholders are integral to our success and that licensing intellectual property and establishing ventures are the key areas of future growth.



CSIR Executive 2001 / 2002

- Standing left to right:** Mr Neo Moikangoa, Executive Vice President Policy and Technology for Development
 Dr Sibusiso Sibisi, President and CEO
 Mr Albert Jordaan, Executive Vice President Finance and Commercialisation
- Seated left to right:** Dr Anthos Yannakou, Executive Vice President Operations
 Dr Namane Magau, Executive Vice President Human Resources
 Dr Adi Paterson, Executive Vice President and Chief Information Officer (seconded to DACST)

The CSIR's strategy is to accelerate our evolution to a knowledge intensive-technology organisation, which contributes to the African Renaissance and is both internationally competitive and regionally relevant.

Our strategic priorities

South Africa's national imperatives and global challenges provide the macro-strategic framework within which we conduct our business and achieve our business goals. Using a series of scenarios relevant to our knowledge-intensive business and the South African environment, we have identified five strategic priorities, which have been approved by the Board.

A re-evaluation of these strategic priorities during the year under review resulted in some minor modifications, and indicated that the essence of the CSIR's strategy remains valid and robust.

- ▶ A step-change in positioning of the CSIR as a leading knowledge and technology solutions provider through strategic alliances such as the one we have with the University of Pretoria - our goal is to create a world-class alliance that will, *inter alia*, have the critical mass to compete globally in science and technology; offer opportunities to attract and retain the best people; reinforce and support the objectives of the National System of Innovation; and create a globally effective flagship for South Africa.
- ▶ Strategic management of innovation and focused business development locally, regionally and internationally - we will continue to grow the CSIR's external income, dividends, royalties in a market driven, financially sustainable, relevant and impactful way.
- ▶ Achieving diversity and transformation with excellence - our focus is on creating an enabling environment and agile human resource systems facilitating the retention and attraction of talent, through stretching career development opportunities; continuous enrichment of staff's technical competences and

their ability to work with others (and across boundaries); the building of leadership skills in areas of CSIR's business; and promoting exceptional client relationship and partnering skills. We also strive to substantially enhance demographic representivity, particularly at the professional staff level.

- ▶ Enhanced impact on South Africa's sustainable development and National Imperatives - we aim to position the CSIR, through quality delivery and a consistently enhanced track record, as a relevant and effective contributor to the national pursuit of sustainable development and to generate, capture and share knowledge on best practice in the packaging and transfer of technology into the development domain.
- ▶ Leveraging CSIR's intellectual capital and knowledge resources through harnessing the power of information and communications technology - by utilising the best approaches to knowledge management, our goal is to grow and develop the CSIR's contribution, offerings and performance in and through information and communications technology, as a fast-follower in the global context, and leader in the information society in South Africa, the region and Africa.

Our operational priorities 2001/2002

The CSIR's strategy translates into operational priorities against which our performance, both quantitatively and qualitatively, is measured. These priorities in turn provide our business goals.

For this reporting period our specific business goals have been to grow our business, embed quality in everything we do, create an increasingly innovative and rewarding working environment for our people, make an impact on sustainable development, and harness the information revolution.

GOALS, TARGETS AND PERFORMANCE RESULTS IN OVERVIEW

GOAL	KEY PERFORMANCE INDICATORS	TARGET	PERFORMANCE RESULTS
GOAL 1: Growing our business through focused business development locally and internationally	Increase total income	5.0%	Exceeded (9.1%)
	Increase total external contract income	1.9%	Exceeded (15.1%)
	- Private sector growth	-3.9%	Not met (-6.1%)
	- Public sector growth	12.5%	Exceeded (48.1%)
	- National safety and security	1.9%	Exceeded (14.3%)
	- International sector growth	7.0%	Exceeded (40.6%)
	Net margin	R8.0m	Not met (-R7.9m) - See Executive Report (Financial Performance Overview - page 17)
	Cash and cash equivalent holdings	R60m	Exceeded (R79.2m)
Ratio of external earnings to total income	60.4%	Exceeded (66.7%)	
Commercialisation	Stabilise first 5 subsidiaries of Technovent		Four subsidiaries are being developed towards independence. Two subsidiaries being unbundled/merged with existing companies in industry.
	Establish further Technovent subsidiaries		Sixth subsidiary, Agrimage, has been established.
GOAL 2: Embedding quality through everything we do	Customer satisfaction	CSIR objective 75%	Exceeded (83%)
	International Peer Reviews 2001/2002	Performance at least comparable to industry in core activities and international norms	Two reviews completed Results indicate good progress made
	- Road and Transport Technology		
	- Satellite Applications Centre		
	Peer recognition	Participation on an ongoing basis in relevant national awards and competitions.	Silver award in KPMG's Annual Sustainability Reporting Survey Awards Silver Arrow award in PMR Intelligence's annual survey of State Owned Enterprises and Parastatals Namane Magau, Executive Vice President HR, awarded HR Practitioner of the Year Award (IPM) Acknowledged by Black Management Forum (BMF) as one of top 10 SA companies making genuine impact in empowerment Bio/Chemtek and Defencetek finalists in Top Technology 100
	Excellence assessment	Participation on an ongoing basis in the South African Excellence Foundation's (SAEF) assessment process	Continued in founding role to provide leadership and resources to SAEF
Safety, Health and Environment	Rate of 85%	Exceeded (90.6%)	
- Safety, Health and Environment (SHE) audits	Less than 1% of CSIR workforce	Achieved (0.5%)	
- Disabling Injury Frequency Rate (DIFR)	Obtain and retain certification for all CSIR business and corporate units by 2001	Achieved (obtained multi-site listing)	
- ISO 14001			
GOAL 3: CSIR People: Transformation excellence	Staff satisfaction	CSIR objective 75%	Next survey June 2002
	Staff diversity	2 665	Good progress (2 551)
	- Total staff complement	28.7% of total prof. staff	Good progress (27.2%)
	- Black professional staff	33.2% of total prof. staff	Achieved (33.7%)
	- Female professional staff	40.8% of total staff	Exceeded (41.4%)
	- Total Black staff	38.8% of total staff	Achieved (38.8%)
	- Total Female staff		
	Bursaries and internships	75% of total bursars	Good progress (73.3%)
	- Black bursars	40% of total bursars	Good progress (38.8%)
	- Female bursars	80% Black, 50% Female	Exceeded (85.8% Black, 60.8% Female)
- Interns			

GOAL	KEY PERFORMANCE INDICATORS	TARGET	PERFORMANCE RESULTS
GOAL 3: (continued)	<p>Training - Staff development</p> <p>- Adult Basic Education</p>	<p>Enhance rapid skills and competence development</p> <p>Five year target set in 1996 to equip 140 less educated employees with basic reading, writing and arithmetic skills</p>	<p>Good progress Submitted Skills Development Plans to Dept. of Labour 420 staff pursuing further tertiary qualifications (40 PhDs) 734 staff attended focussed courses up till March 31 through CILLA¹</p> <p>Achieved five year target in 2001</p>
<i>¹CILLA : CSIR Innovation Leadership and Learning Academy</i>			
GOAL 4: Enhanced impact on South Africa's sustainable development and presidential imperatives	<p>Active and relevant involvement in national priorities</p> <p>Active and relevant involvement in National Imperatives (NI) programme</p>	<p>Invest strategically in rural development and implement poverty alleviation projects on behalf of government</p> <p>Ongoing support for SMME support programmes</p> <p>Help to create public understanding of S&T</p> <p>Actively lead, participate in and support Science Councils' activities in NIs</p>	<p>Involved in craft projects in E. Cape, Free State, North West and Limpopo Provinces 11 Science and Technology projects underway</p> <p>Contributing to DTI national support programmes for small business, DACST's Technology Stations Programme and Godisa Incubation Programme</p> <p>Participated in national science festivals and S&T journalism awards</p> <p>Good progress in crime prevention, poverty alleviation and rural development Focus area for attention - Science Councils' Collaboration CSIR leads Crime Prevention National Imperative Established National Research Resource Centre with funding by DACST</p>
GOAL 5: Harnessing the information revolution	<p>Development of strategic framework for IT activities</p> <p>Managing of strategic IT initiatives</p> <p>Effective deployment of web technology as commercial vehicle and key management communication tool</p> <p>IT competency development</p>	<p>E-Business Exco to guide strategy</p> <p>Re-visit IT structures to improve alignment</p> <p>Lowering of total cost of ownership of internal IT platforms</p> <p>Implementation of IT architecture and enterprise systems decisions</p> <p>Merging of UP and CSIR library information services</p> <p>Ongoing improvement of CSIR management model</p> <p>Co-ordinate web initiatives in domains of portals, intranet, internet, architecture</p> <p>Enhancement of e-commerce offerings and channels</p> <p>Ongoing training of users</p>	<p>Achieved - IT Governance Committee meets fortnightly to discuss IT strategy and monitors progress on Enterprise system implementation.</p> <p>Achieved - various fora restructured; mandates and performance objectives clarified</p> <p>Strong compliance in standardisation of hardware and software resulted in faster response time to problem solving and lower overall cost of LAN support</p> <p>Good progress - implementation of PeopleSoft Enterprise System underway Organisation-wide document management system mandated</p> <p>Progress delayed - co-operation model being rethought</p> <p>Achieved - also collaboration with SAEF to demonstrate potential value to external organisations</p> <p>Achieved - significant progress with portals to stakeholders, customers, vendors and employees Workflow system deployed throughout organisation New enterprise system fully web-enabled</p> <p>Achieved - increased number of products and services via e-commerce Upgraded dynamic database-driven internet web site</p> <p>Achieved - classroom and CBT-based courses are offered; and user needs regularly revisited</p>

Directors of Business Units

icomtek
Mr Sello Matsabu

Environmentek
Mrs Tina Eboka

Boutek
Dr Rodney Milford

M&Mtek
Dr Hoffman Maree

Defencetek
Mr André Nepgen

Miningtek
Dr Güner Gürtunca

Transportek
Mr Phil Hendricks

Bio/Chemtek
Dr Petro Terblanche

Performance against our goals

The CSIR's performance is summarised in the Table on pages 15 and 16 for easy reference. More detailed information on the achievements and progress made in the respective goals appears in the following section.

Goal 1: Growing our Business

During a year in which conditions remained competitive, the CSIR exceeded its targeted external operating income of R493.2 million by R70.9 million, reflecting a year-on-year growth of 15.1%. Correspondingly, 66.7% (2001: 62.4%) of our total income is now derived from non-Parliamentary Grant sources against a target of 60.4%. The most significant year-on-year growth (48.1%) was achieved in the public sector market (including Innovation Fund projects) - itself an indicator of quality performance and delivery.

In addition, good growth has occurred in the international sector (40.6%) and, despite declining defence spending in real terms over the past five years, the growth of 14.3% in the safety and security sector is noteworthy.

Achieving sustainable real growth in external income, at an acceptable level of margin, remains a critical requirement. A number of growth initiatives for improved market penetration and development in the private and public sectors, both locally and internationally, have been implemented through focused action plans.

Financial performance overview

The total income for the year of R877.0 million exceeded our targeted income of R798.4 million. The Parliamentary Grant was 0.2% higher than in 2000/2001. However, it is important to note that the Parliamentary Grant included R1.0 million for the National Crime Research Resources Centre, R4.0 million for the National Product Development Centre and R3.5 million for the Hermanus Magnetic Observatory, which has now been transferred to the National Research Foundation.

The results show a net deficit of R7.9 million (2000/2001: a net margin of R8.9 million or 1.13% of income) against a targeted net margin of R8.0 million. The targeted net margin was not achieved due to the settlement mentioned in note 4 to Annual Financial Statements.

Cash flow generated from operating activities for the year being reported on was R18.9 million (2001: R84.2 million). The cash and cash equivalent holdings decreased to R79.2 million (2001: R79.5 million) against a target of R60 million.

Internationally active

The CSIR's international income has grown to R89.0 million in 2001/2002 (2000/2001: R63.3 million) or 15.8% (2000/2001: 13.1%) of total contract income, with the major sources of income from Europe, North America and SADC, and the CSIR's operations in the USA, UK and Australia performing well. The target was exceeded by 31.4%, which reflects an increase of 40.6% over the previous year (2000/2001: 12.3%), with a five-year compound growth of 25.3%. Our international strategy is to position the CSIR as a reputable provider of technology solutions, through establishing long-term relationships with multinational companies and partnerships with international research and technology organisations, such as the TNO (Netherlands), Fraunhofer-Gesellschaft (Germany), CNRS (France), and CSIR-India.

Active in the region

As a key provider of technology solutions in SADC, we focus on regional linkages through networks and alliances, internationally financed projects and regional business development.

We were again contracted to act as the African regional focal point for the World Association of Industrial and Technological Research Organisations (WAITRO) to manage the administrative activities of WAITRO's African member organisations.

A strategic framework was formulated to integrate and manage CSIR business interactions in Africa, within the context of NEPAD.

Competitive funding mechanisms and integrated projects

The CSIR networks extensively to optimise opportunities for growth through competitive funding mechanisms. These include the Innovation Fund and the Poverty Alleviation Projects introduced by the Department of Arts, Culture, Science and Technology, a variety of funding schemes of the Department of Trade and Industry and others administered by the National Research Foundation, such as THRIP (Technology and Human Resources for Industry Programme) and the Indigenous Knowledge Systems Fund. During the year under review, the CSIR led, or participated as a partner in 19 Innovation Fund projects.

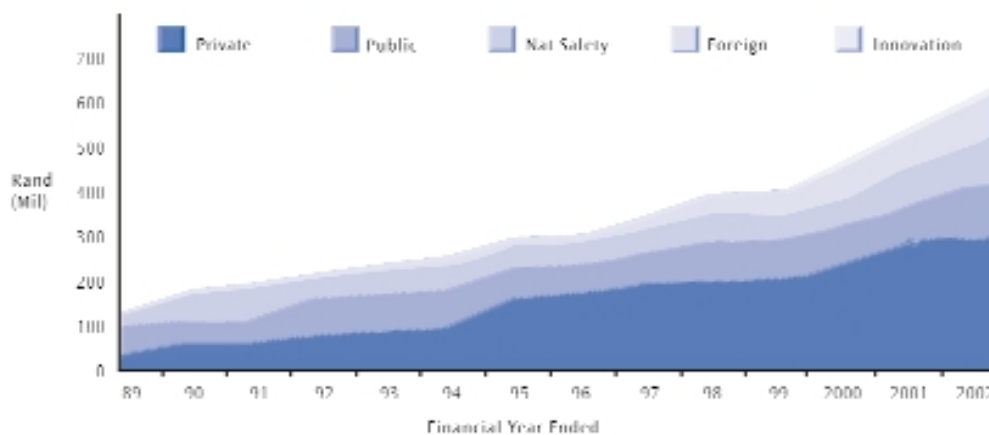
The group revenue increased by R64.2 million (2001: R62.8 million) to R908.9 million (2001: R838.7 million) reflecting growth of 7.6% (2001: 8.2%). The group revenue increased by 17.1% since 31 March 2000.

The group's net surplus increased by R0.6 million (2001: R4.3 million) to R8.3 million reflecting growth of 0.8% (2001: R110.5%). The group's net surplus increased by 112.1% since 31 March 2000.

CSIR Parliamentary Grant and External Income



Sources of External Contract Income Actual



External Contract Income per sector 31 March 2002	5 year Compound Growth	Actual 2002 R'000	Target 2002 R'000	2001 R'000	2000 R'000	1999 R'000	1998 R'000
External contract income	11.0%	564 117	493 224	490 020	426 601	356 339	347 982
Annual growth		15.1%	1.9%	14.9%	19.7%	2.4%	4.1%
Private sector	5.0%	229 974	235 186	244 811	214 445	183 983	173 582
Annual growth		(6.1%)	(3.9%)	14.2%	16.6%	6.0%	(3.9%)
Public sector	28.5%	162 891	117 013	109 982	91 628	74 965	76 223
Annual growth		48.1%	12.5%	20.0%	22.2%	(1.7%)	63.7%
National safety and security sector	1.0%	82 293	73 346	71 976	64 213	56 729	64 967
Annual growth		14.3%	1.9%	12.1%	13.2%	(12.7%)	(17.0%)
International sector (including Africa)	25.3%	88 959	67 679	63 251	56 315	40 662	33 210
Annual growth		40.6%	7.0%	12.3%	38.5%	22.4%	15.3%

1998 1999 2000 2001 2002
 1000 2000 3000 4000 5000 6000 7000

Summary of group results	2002 R'000	2001 R'000	2000 R'000
Turnover	908 891	844 683	775 902
Total operating income	923 770	848 012	777 826
Total income	939 266	860 154	789 058
Total expenses	930 965	851 916	785 144
Net surplus	8 301	8 238	3 914
Net cash flow from operating activities	29 359	72 743	46 881
Cash and cash equivalents at year end	93 815	87 907	58 151
Total assets	569 884	546 590	540 859
Total liabilities	253 393	244 484	184 645

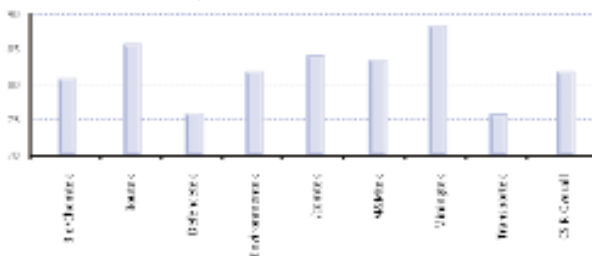
Financial Indicators 31 March 2002	Actual 2002 R'000	Target 2002 R'000	Actual 2001 R'000
Total income (excl investment income)	876 996	798 411	791 388
Growth	10.8%	0.9%	5.4%
Parliamentary grant	296 883	302 877	296 332
Parliamentary grant received	302 877	302 877	301 111
Less:			
Grant received for projects started before year end but not completed	(15 254)	-	(9 260)
Add:			
Grants recognised as income for prior year projects completed in this year	9 260	-	4 481
Growth/(decline)	0.2%	2.2%	(4.9%)
External operating income (incl contract income, royalties and other income)	580 113	495 534	495 056
Growth	17.2%	0.1%	12.9%
Expenditure	899 661	799 280	798 752
Growth	12.6%	0.1%	6.0%
Net Margin	(7 887)	8 001	5 389
Growth/(decline)	(246.4%)	48.5%	(19.2%)

Goal 2: Embedding Quality in Everything We Do

Customer satisfaction

In the year under review, the CSIR undertook a survey of past and potential clients. With the data provided, several potential clients were identified and a programme of follow-up visits was planned to maximise these leads.

Average Customer Satisfaction
1 April 2001 - 31 March 2002



This survey highlighted the need for increasing awareness of the services available at the CSIR and a marketing plan has been developed to address this need.

The "Moment of Truth" system, which measures on brief, on budget, on time and quality of deliverables, provides ongoing feedback on customer satisfaction.

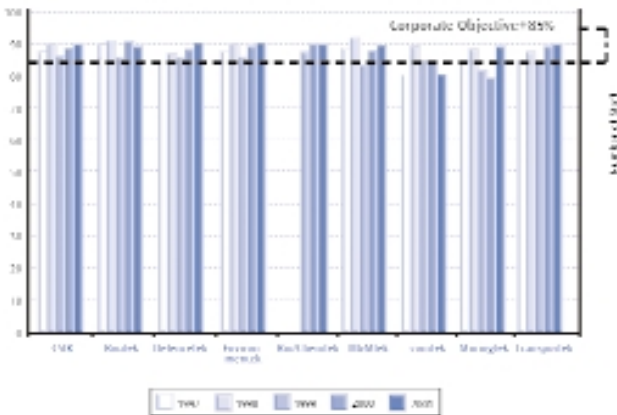
A target of 75% satisfaction was set for the organisation. In total 822 clients returned satisfaction forms and an overall satisfaction level of 83% was achieved.

Safety, health and environmental (SHE) audits were conducted by the CSIR's audit team (Health and Safety) and the South African Bureau of Standards (SABS) (Environmental Management).

The aggregate for individual ratings by business units during the year reported upon was 90.6% (2000: 89.6%).

Being Environmentally Sustainable

5-Year Safety, Health and Environmental Audit History



The disabling injury frequency rate for 2001 was 0.5% (2000: 0.4%), against an aim of achieving a rate of less than 1% of the total CSIR workforce per annum, to comply with our corporate four star standard. The CSIR obtained umbrella or multi-site listing during November 2001 and all CSIR sites are certified against the international SABS ISO 14001 code for an Environmental Management System.

Peer review of activities

The CSIR conducts regular international peer reviews of its activities to establish whether business units are well positioned to serve their clients in the public, private and international sectors.

During the past year international peer reviews were conducted on our Roads and Transport Technology business unit and our Satellite Applications Centre, and results were generally good.

An internal review is being carried out on our overhead and functional cost structures, while a major organisational e-engineering plan is being investigated.

Goal 3: Human Resource Development and Transformation

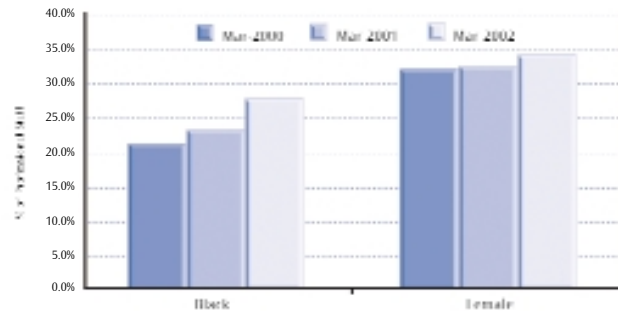
Human Resource Development and Transformation in the CSIR is clearly influenced by the CSIR's emerging challenges. We have developed our processes in accordance with the dictates of a knowledge economy in a global world and the challenges of South Africa. While our focus remained attraction and retention of skills required by a knowledge-intensive technology organisation, other emerging challenges are the creation of an appropriate learning and sharing culture. Our transformation drive remained informed by the shifts in skills requirements and goals on demographic representivity.

Total staff



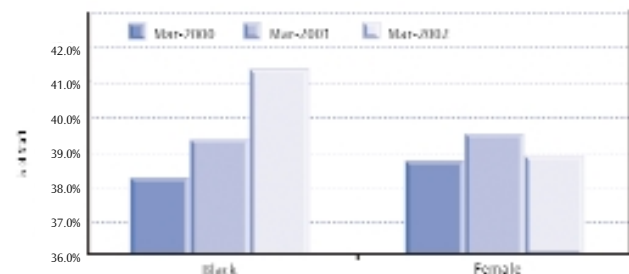
Our human capital endowment reflects an increase in higher level skills as we improve levels of demographic representivity, with an improvement in the number of professional staff across business units. The percentage of Doctorates increased from 7.2% in March 2001 to 7.3% in March 2002. People with Honours degrees increased from 8.0% in March 2001 to 8.3% in March 2002 and, similarly, people with B-degrees moved from 15% to 15.8%. People with Masters degrees remained unchanged at 12.5%.

Professional staff composition



The total staff complement of the CSIR, as at March 2002, was 2551, of which 1 237 were professional staff. Progress has been made in increasing the number of Black professionals to 27.2% as at March 2002 (24% as at March 2001).

Staff composition





French Prime Minister, Lionel Jospin, visited the CSIR on his two-day working visit to South Africa in June 2001. He awarded the DESS Postgraduate Diploma in Remote Sensing to promising young South Africans.

Organisational ethics

The CSIR is committed to honesty and transparency in its business operations and expects its staff members to act accordingly. Disciplinary procedures are in place to handle any transgressions of these principles. During the year under review, no material losses occurred through criminal conduct and no fruitless and wasteful expenditure occurred.

Employment equity

An Employment Equity Report was submitted to the Department of Labour. The Report reflects the significant progress (as reported elsewhere in this report) by the CSIR in achieving its Employment Equity goals.

Business units' Employment Equity Plans reflect actions to address challenges relating to enhanced demographic representivity, skills development, succession planning, fast-tracking, mentorship, diversity management and organisational culture assessment.

Learnership schemes

CSIR learnership schemes and study funding practices are aimed at remaining relevant in the knowledge intensive technology environment and investment in science, engineering and technology learnerships was an estimated R11 million for 2001. Funding allocations included those in CSIR's under- and postgraduate bursary scheme, an internship scheme, the UP/CSIR Alliance Bursary Scheme and various joint sponsorship schemes with local and international stakeholders.

Within the national context of study funding for leveraging transformation, the CSIR's under- and postgraduate scheme supported 69 students in 2001, of whom 73% were Black and 39% female. The internship programme sponsored 30 students - 86% Black and 60% female, and the UP/CSIR Alliance Scheme included 13 students - 71% Black and 46% female. Joint sponsorship schemes with stakeholders included initiatives with Coaltech 2020 and Futuremine, various government departments and higher learning institutions, i.e. Pretoria Technikon, University of Natal and Wits University.

There is positive potential for human capital acquisition and development in Science, Engineering and Technology (SET) fields through joint stakeholder sponsorships and the CSIR is currently embarking on specific plans for broadening the scope of learnerships in this particular area.

Skills development

During 2001 the CSIR continued to support the National Human Resource Development Strategy and contributed substantially to building a science and technology resource base equipped to address national and regional imperatives through innovation. During the period under review the CSIR:

- Directly spent just under R11 million on skills development
- Through the CSIR Innovation Leadership and Innovation Academy (CILLA) played a more facilitating role in emerging learning-related issues
- Actively involved Black professionals in projects to create new capacity and knowledge
- Utilised mentorship and coaching schemes to fast-track Black professionals
- Managed implementation of personal development plans through regular performance reviews.

The CSIR submitted skills development plans to the Department of Labour as required by the Skills Development Act. Repayment of levies was received from Sector Education Training Authorities (SETAs) and the money distributed to business units for further targeted training initiatives.

Training for excellence

CILLA remains a key internal delivery mechanism for CSIR's Human Resource Development initiatives, promoting particularly the concept of continuous lifelong learning. Close collaboration with the business units is fostered, ensuring their ongoing involvement in and use of CILLA, within the framework of business imperatives and employees' career aspirations. Learning events are well attended by staff with some 734 attendees for the year under review.

The CSIR supports staff in furthering their tertiary education and over 420 staff have pursued further tertiary qualifications, including some 40 doctoral students.

Labour relations

The CSIR, NEHAWU and other internal labour representative forums have maintained productive relations. The annual wage negotiations with NEHAWU were successfully concluded early in December 2001.

Remuneration

Revised compensation policy arrangements were designed and piloted in various business units with the view of wider application in the CSIR.

HIV/AIDS awareness and Human Resource Support Programme

The CSIR launched an HIV/AIDS awareness and education programme in September 2001, which was presented throughout the organisation over a four-month period. Presented by specialist consultants to all levels of staff, these comprehensive information and learning sessions covered the scientific base of the disease, possible impact of the epidemic on the business process, best human resource management practices and the implementation of the CSIR's policy on Life Threatening Diseases.

Medical aid scheme

The CSIR's Medical Aid Scheme came into being on 1 April 1997. The objective is to provide sustainable health care and at the same time limit costs to an affordable level. The scheme is based on co-responsibility between employer and employee.

The Fund is administered by Discovery Health and governed by a Board of Trustees consisting of Mr Albert Jordaan (Chairman), Dr Namane Magau, Ms Suzette Harmse, Mr Gert Mostert, Mr Hugo Mouton and Mr Raymond Raats.

Pension fund

Our Pension Fund is registered in terms of the Pension Fund Act, Act 24 of 1956, and is a defined contribution plan. The Fund performed well compared to similar funds, with an average growth achievement of 15.6% (2000/2001: 2.85%).

The Fund is governed by a Board of Trustees, consisting of Mr Albert Jordaan (Chairman), Ms Suzette Harmse, Ms Helena Heysteck, Mr Philip Masemola, Mr Daniel Mosito, Mr Thabo Poee, Mr Gerhard Smith and Ms Linda Vilakazi-Tselane.

Goal 4: Making an Impact on Sustainable Development and the National Imperatives

The CSIR has been involved in sustainable development for nearly a decade through its drive in Technology for Development. During this time, involvement was mainly through rural development, indigenous knowledge systems, job creation and crime prevention. The CSIR has broadened the scope to encompass HIV/AIDS, National Human Resource Development, urban renewal and regional integration.



One hundred and fifty-eight rural crafters from eight different groups in the Northern Province are the recipients of a special craft project that enhances and adds value to remarkable skills handed down through the generations of cultural custodians.

Within the sustainable development domain, we support a holistic approach focusing on technology as one component to achieve our goal of becoming a development partner to communities and to contribute toward economic empowerment of previously marginalised groups and communities. A collaborative approach through partnerships with all levels of government, other Science Councils, development agencies, funding agencies, NGOs and community structures is essential to success in this domain.

Involvement in the Department of Arts, Culture, Science and Technology (DACST) poverty alleviation projects has seen a more direct involvement in sustainable development challenges. The CSIR is involved in craft projects in the Eastern Cape, Free State, North West and Limpopo Provinces. Eleven science and technology projects are underway on a nation-wide basis, focusing on the transfer of available technologies to communities to enhance the use of local resources and indigenous knowledge, and to stimulate economic activity. Leveraging poverty alleviation funds, the CSIR has created resource-based enterprises in a continuous drive to increase the effectiveness of our high-impact integrated projects.

The CSIR has been contributing to Department of Trade and Industry (DTI) national support programmes for small business. Examples of involvement are the Manufacturing Advisory Council, the Business Referral and Information Network situated at NAMAC, and the more recent pilot programmes such as the SMME Franchising Referral and Information Network programme, the One-Stop SMME Shop pilot programme and the Hand Holding programme. In each of the latter three programmes, the CSIR has been involved in the conceptualisation and design phase of the

programme. NAMAC is implementing the pilot programmes whilst the CSIR is involved in the monitoring and evaluation of each of the pilot programmes. The CSIR also participates in SMME support programmes of other national departments and is supporting DACST in their technology transfer and diffusion programmes, the Technology Stations Programme and GODISA.

In terms of rural development, the CSIR has been involved in more than 60 projects countrywide over the past year. Many of these projects have been implemented in poverty nodes as identified by Cabinet.

The CSIR has established a Crime Research Resource Centre with funding provided by DACST. The CSIR has also been providing technology support to the Safety and Security Cluster of national government. Currently, it is also involved in the execution of a tender for the Department of Justice and is providing technological support to the Scorpions.

In terms of urban renewal, the CSIR was involved with the social crime prevention unit of SAPS as well as various local governments and Metropolitan Councils. The CSIR established a working group for HIV/AIDS and is working closely with other institutions such as the University of Pretoria in this regard.

The CSIR is involved in National Human Resource Development through involvement with the Department of Labour, SETAs, the Integrated Skills Development Programme for small business, as well as Technology for Women in Business (TWIB), a DTI programme.

In preparation for the World Summit on Sustainable Development to be held in Johannesburg in August 2002, the CSIR initiated a drive to highlight the work done in the sustainable development arena.

Helping to create an understanding of science and technology

In helping to promote greater awareness and understanding of the role and value of science and technology, we participated in DACST's 2001 Science, Engineering and Technology Week activities and in SciFest (the annual science festival held in Grahamstown). As part of Youth Science Week, the CSIR hosted winners of the 37th National Science Olympiad competition, while awareness days were held to highlight career opportunities in the Science and Technology industry for learners.

The CSIR joined forces with Siemens to encourage journalistic excellence in the field of science and technology in southern Africa by hosting a programme called Profile. This programme gives recognition to journalists and science writers who succeed in helping to create awareness and understanding of the role and relevance of science, engineering and technology to the economic prosperity of our country.

Goal 5: Harnessing the Information Revolution

Following an extensive investigation into alternative Enterprise System vendors, the CSIR selected the offerings of PeopleSoft, the third largest ERP vendor worldwide. An experienced PeopleSoft implementation partner is on site, and training of the joint implementation team is substantially complete.

Significant progress was made in the web-enablement of various processes through Workflow. This approach facilitates increased employee self-service and automates the electronic routing of requests and claims, thereby reducing paper and improving efficiency.

Despite the CSIR's Internet website having received an excellent external review, significant enhancements were completed to facilitate more dynamic, database-driven capabilities with improved search engines. This both enhances the user experience and eases the day-to-day management and updating of the site.

In the domain of Knowledge Management, investigations are underway to clarify options to facilitate full-text searching of historical CSIR publications. Substantial progress was made in the rollout of a CSIR-wide Document Management System.

Managing our Parliamentary Grant

The Parliamentary Grant allocated to the CSIR for the 2001/2002 financial year amounted to R302.9 million (2000/2001: R301.1 million), which represented an increase of 0.6%. This grant continues to be the key investment resource of the CSIR. It is used to create and strengthen operational and technological core competencies and capacity to support our involvement in national initiatives.



CSIR aims to stimulate the essential oils business through the investment in technology packages that can be commercialised.

The investment priorities in the CSIR are based on national and market needs and technology trends, as well as the ability of the organisation to effectively deploy any such investment and deliver appropriate products and services. The CSIR's investment process is currently being reviewed with the aim of continuous improvement.

During the 2001/2002 financial year, the Parliamentary Grant was largely invested in the technological core competencies of manufacturing and materials, information technology, environment, bioscience and biotechnology and infrastructure (including housing and transport). A portion was also invested in organisational and operational core competencies including human resource development, leadership and managerial competency, excellence in R&D and innovation. The companion document to this report, Technology Impact, profiles a number of scientific and technological developments supported through the Parliamentary Grant investment.

Board Remuneration

Details of the CSIR Board are set out on page 11 of the Corporate Governance Report. The membership and terms of reference of each Board Committee are further described on page 12 of the Corporate Governance Report.

Directors' remuneration is set out in note 4 to the Annual Financial Statements. Remuneration for services on the Board amounted to R234 000 and R519 000 for the Group (2001: CSIR-R168 000; Group-R168 000) and for managerial services R278 000 for the CSIR and R7 006 000 for the Group (2001: CSIR-R749 000; Group-R4 805 000).

Changes to our Management Board

Dr Sibusiso Sibisi, previously Deputy Vice Chancellor, Research and Innovation, at the University of Cape Town, was appointed President and Chief Executive Officer of the CSIR, with effect from 1 January 2002. Dr Adi Paterson, Executive Vice President and Chief Information Officer, was seconded to DACST as Head of the Science Desk. Dr Namane Magau, Executive Vice President, Human Resources, resigned from the CSIR, with effect from March 2002.

Mr Sello Matsabu joined the CSIR as Director of the Information and Communications Technology business unit. Dr Rodney Milford was appointed Director of the Building and Construction Technology business unit and Mr André Nuppen was appointed Director of the Defence Technology business unit.

Acquisitions

The CSIR signed a contract on 28 March 2002 with Armscor's Institute of Maritime Technology (IMT) by which it acquired Maritech, a Division of IMT.



A successful intervention resulted in a lean, streamlined and effective manufacturing system for a producer of automotive parts for the export market.

Key Initiatives

The Innovation Hub

The Innovation Hub is a partnership between SERA (Pty) Ltd, which is a joint venture between the CSIR and the University of Pretoria, and the Gauteng Provincial Government's Blue IQ initiative to invest in economic infrastructure development. The purpose of The Innovation Hub is to support the creation, nurturing, growth and globalisation of technology-led and innovative businesses and enterprises to enhance the innovative capacity and economic development of Gauteng.

During the year under review, pilot activities were established in temporary premises on the CSIR site in Pretoria, including a Business Incubator, which is operational, with six resident companies currently employing 20 people. A number of Entrepreneur and Innovator Development programmes were also launched, such as the CoachLab™ concept where students are working on Information and Technology industry projects under expert mentorship.

AIDC

The Automotive Industry Development Centre (AIDC) was officially launched as a private company, AIDC Development Centre (Pty) Ltd, between the Gauteng Provincial Government and the CSIR. Drawing on the collective expertise of the CSIR and a number of local and international organisations with world-class automotive competencies, the AIDC aims to establish a national resource centre to provide accessible and affordable world-class technical and project-focused resources to address the needs of the automotive industry in South Africa.

The Automotive Industry Development Centre has committed itself to being the first anchor tenant at The Innovation Hub's site scheduled for occupation in 2003.

Global Research Alliance

During the year under review, the CSIR proposed the formation of a global research alliance between leading international science and technology organisations, with the aim of exploiting the synergy between the various organisations to jointly address some of the world's most intractable problems.

Contacts with various international organisations were initiated to elicit their participation in a workshop aimed at discussing, considering and formulating a non-exclusive alliance.

Commercialisation

During the year under review, the CSIR concentrated its higher-level commercialisation efforts on refining models for the successful commercialisation of CSIR offerings. Such models now include operating companies based on CSIR technologies and the application of venture capital instruments to enhance venturing.

The initial five subsidiaries of Technovent have been in incubation for three years and a sixth one for 17 months. Two of them, Aeroflo (Pty) Ltd and AMP Ceramics (Pty) Ltd, are in the process of being untwined or merged with existing companies in industry. Thermaspray (Pty) Ltd developed into a successful self-sustainable company and an offer to buy the company was accepted by Technovent (Pty) Ltd. The three other companies are still being developed.

Our Subsidiaries

The activities of the CSIR's subsidiaries, as set out in Annexure A to the financial statements are, respectively, to invest in and develop research and implement and transfer technology to industry, to provide finance to develop technology and venture capital to exploit it. The aggregated deficit of the subsidiaries amounted to R0.8 million (2001: R7.3 million) for the year under review.

Post Balance Sheet Events

No material facts or circumstances have arisen between the dates of the balance sheet and production of this report, which affect the financial position of the organisation as reflected in these financial statements.

Forward to the Future

Building on our track record of excellence in science and technology, we enter the new financial year with a firm commitment to play a greater part than ever in the upliftment of

our country and our continent. The nature of our business demands that we anticipate the scientific and technological forces that will shape the coming years. We must do so in a way that builds our business, locally, regionally and internationally and helps us make a real and enduring difference in the lives of all.

Board Approval

The annual financial statements of the CSIR for the year ended 31 March 2002, as set out on pages 26 to 54 of this report, have been approved by the CSIR's executive management and the CSIR Board at its meeting held on 14 June 2002. The Board is of the opinion that the CSIR is financially sound and operates as a going concern.

These statements are signed on behalf of the CSIR Board by:



Mr Roger Jardine
Board Chairman



Dr Sibusiso Sibisi
CSIR President and CEO

Five Year Financial Review

31 March 2002

	2002 R'000	2001 R'000	2000 R'000	1999 R'000	1998 R'000
FINANCIAL INDICATORS					
Total reserves	308,986	316,873	376,253	365,217	353,555
Long-term liabilities	-	4,000	9,000	14,350	-
Total assets	551,001	550,853	550,886	542,583	490,212
Net assets	310,360	322,429	385,253	379,567	353,555
INCOME AND EXPENSE INDICATORS					
Parliamentary grant recognised as income	296,883	296,332	317,334	325,469	336,255
External operating income	580,113	495,056	433,215	361,194	352,519
Expenditure	899,661	798,752	750,040	688,098	704,791
Investment income	14,778	12,753	10,550	13,097	23,327
Net (deficit)/surplus	(7,887)	5,389	11,036	11,662	7,310
CASH FLOW					
Net cash inflow from operating activities	18,937	84,227	53,540	83,755	57,645
Net cash outflow from investing activities	(15,114)	(56,632)	(36,600)	(108,643)	(48,081)
Net cash (outflow)/inflow from financing activities	(4,182)	(3,444)	(5,350)	14,350	-
Cash and cash equivalents beginning of year	79,525	55,374	43,784	54,322	44,758
Cash and cash equivalents end of year	79,166	79,525	55,374	43,784	54,322
RATIO ANALYSIS					
Asset management					
Net asset turn	2.9	2.5	2.0	1.8	2.0
Return on net assets	-2.5%	1.7%	2.9%	3.1%	2.1%
Current ratio	1.3	1.2	1.7	1.2	1.5
Performance					
Total income (excl. investment income) per employee	343.8	312.3	274.9	222.8	227.6
Total external operating income per employee	227.4	195.4	158.7	117.2	116.5
Total income (excl. investment income) per R1 operating expenditure	2.1	2.3	2.4	2.6	2.1
Remuneration as a % of total expenditure	49.2%	51.7%	53.5%	55.5%	48.8%
Net cash generated from operating activities per employee	7.4	33.2	19.6	27.2	19.0
Independence ratio	66.7%	63.1%	58.3%	53.5%	52.8%

DEFINITIONS

Net asset turn - Total income (incl. investment income) divided by net assets

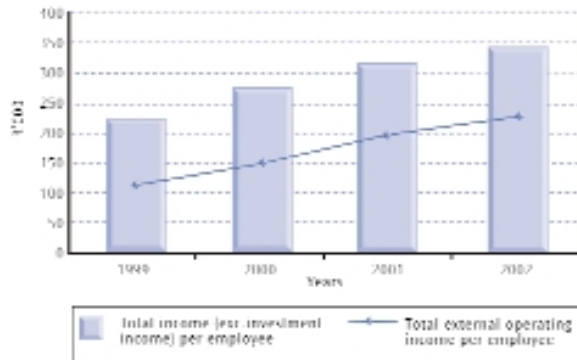
Return on net assets - Net income expressed as a percentage of net assets

Current ratio - Current assets divided by current liabilities

Independence ratio - Total external income (incl. investment income) divided by total income



Income per Capita



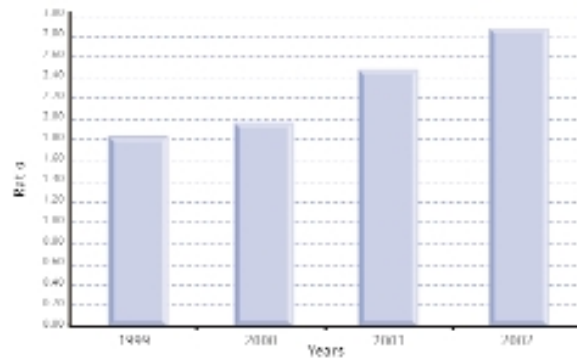
The improvement in income per employee is due to the increase in external income.

Net cash generated from operating activities per employee



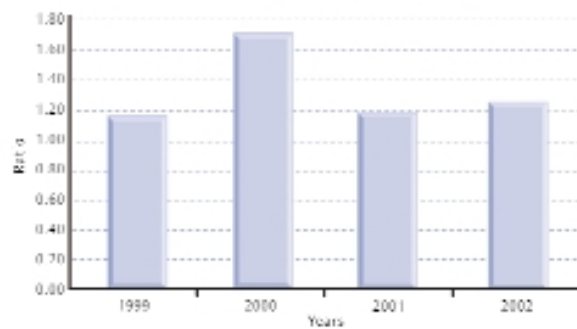
The net cash generated per employee decreased due to a substantial increase in inventory and contracts in progress.

Net asset turn



The increase in net asset turn is the result of the increase in external income.

Current ratio



The current ratio showed a slight improvement due to the increase in current assets. Current liabilities did not increase in proportion to the increase in current assets.

Income Statement

for the year ended 31 March 2002



	Notes	Group		CSIR	
		2002 R'000	2001 R'000	2002 R'000	2001 R'000
Revenue	3	908,891	844,683	863,104	789,200
Other income		13,831	2,620	12,747	2,188
Profit on disposal of property, plant and equipment		1,048	-	1,145	-
Profit on disposal of subsidiary		-	709	-	-
Total operating income		923,770	848,012	876,996	791,388
Expenditure					
Employees' remuneration		465,194	437,981	442,525	412,994
Depreciation	7	36,668	41,115	34,712	39,492
Operating expenses		427,548	368,403	422,424	342,222
Loss on disposal of property, plant and equipment		-	4,044	-	4,044
Loss on disposal of subsidiary		211	-	-	-
Total expenditure		929,621	851,543	899,661	798,752
Net operating deficit for the year before investment income	4	(5,851)	(3,531)	(22,665)	(7,364)
Income from investments	5	14,822	13,048	14,778	12,753
Net post acquisition surplus/(loss) of joint ventures		674	(906)	-	-
Net operating surplus/(deficit) for the year before taxation		9,645	8,611	(7,887)	5,389
Taxation	6	(1,062)	(373)	-	-
Profit attributable to outside shareholders	15	(282)			
Net surplus/(deficit) for the year		8,301	8,238	(7,887)	5,389

Balance Sheet

31 March 2002

	Notes	Group		CSIR	
		2002 R'000	2001 R'000	2002 R'000	2001 R'000
ASSETS					
Non-current assets					
Property, plant and equipment	7	198,369	205,063	193,394	198,899
Intangible assets	8	4,853	5,200	749	582
Interest in subsidiaries	9	-	-	37,720	44,255
Investments	10	12,005	32,005	12,000	32,000
Interest in joint ventures and associates	11	24,293	13,408	5,636	4,407
Current assets					
Accounts receivable	12	156,564	155,308	145,887	145,869
Inventory and contracts in progress	13	79,985	47,655	76,449	45,316
Deferred taxation	14	-	44	-	-
Cash and cash equivalents		93,815	87,907	79,166	79,525
TOTAL ASSETS		569,884	546,590	551,001	550,853
EQUITY AND LIABILITIES					
Reserves					
Accumulated funds		296,320	288,597	298,236	306,123
Self insurance fund		10,750	10,750	10,750	10,750
Non-distributable reserve: Foreign currency translation reserve		8,772	2,740	-	-
Outside shareholders interest and loan payable	15	649	19	-	-
Non-current liabilities					
Long-term liabilities	16	624	7,427	-	4,000
Acquisition consideration due	17	1,374	1,556	1,374	1,556
Current liabilities					
Advances received	18	73,629	69,510	73,620	71,118
Accounts payable and accruals	19	106,522	111,387	97,539	103,180
Deferred taxation	14	20	-	-	-
Taxation		1,210	261	-	-
Provisions	20	70,014	54,343	69,482	54,126
TOTAL EQUITY AND LIABILITIES		569,884	546,590	551,001	550,853

Statement of Changes in Equity

for the year ended 31 March 2002

Group	Notes	Accumulated funds	Self insurance reserve	Non distributable reserve
Balance at 31 March 2000		345,151	10,750	313
Changes in accounting policy				
- adoption of AC 135	2	(64,792)	-	-
Restated balance		280,359	10,750	313
Restated net surplus for the year		8,238	-	-
Net surplus for the year		11,806	-	-
Changes in accounting policy				
- adoption of AC 135	2	(3,568)	-	-
Exchange differences arising on translations of overseas operations		-	-	2,427
Restated balance at 31 March 2001		288,597	10,750	2,740
Net surplus for the year		8,301	-	-
Subsidiary previously not consolidated		(578)	-	120
Exchange differences arising on translations of overseas operations		-	-	5,912
Balance at 31 March 2002		296,320	10,750	8,772
CSIR				
Balance at 31 March 2000		365,503	10,750	-
Net post acquisition loss of joint venture		23	-	-
Changes in accounting policy				
- adoption of AC 135	2	(64,792)	-	-
Restated balance		300,734	10,750	-
Restated net surplus for the year		5,389	-	-
Net surplus for the year as originally stated		8,921	-	-
Net post acquisition loss of joint venture		36	-	-
Changes in accounting policy				
- adoption of AC 135	2	(3,568)	-	-
Restated balance at 31 March 2001		306,123	10,750	-
Net deficit for the year		(7,887)	-	-
Balance at 31 March 2002		298,236	10,750	-

Cash Flow Statement

for the year ended 31 March 2002

	Notes	Group		CSIR	
		2002 R'000	2001 R'000	2002 R'000	2001 R'000
Cash flow from operating activities					
Cash receipts from external customers		585,891	590,276	549,386	456,761
Parliamentary grant received		302,877	301,111	302,877	301,111
Cash paid to suppliers and employees		(874,181)	(831,536)	(848,104)	(686,398)
Cash generated from operating activities					
	A	14,587	59,851	4,159	71,474
Investment income received		14,822	13,048	14,778	12,753
Taxation paid		(50)	(156)	-	-
Net cash inflow from operating activities		29,359	72,743	18,937	84,227
Cash flow from investing activities					
Property, plant and equipment acquired		(37,079)	(32,569)	(34,391)	(29,078)
Proceeds from the disposal of property, plant and equipment		6,629	854	6,329	757
Increase in net interest in subsidiaries		-	-	(5,305)	(23,524)
Acquisition of subsidiary	B	-	(138)	-	-
Disposal of subsidiary	C	-	-	-	-
Disposal of subsidiary	D	-	751	-	-
Increase in interest in joint ventures and associates		(10,212)	(7,792)	(1,229)	(4,130)
Decrease in investments		20,000	-	20,000	-
Net acquisition of long-term patents		(1,673)	(1,810)	(518)	(657)
Net cash outflow from investing activities		(22,335)	(40,704)	(15,114)	(56,632)
Cash flows from financing activities					
Decrease in long-term liabilities		(6,985)	(4,956)	(4,182)	(3,444)
Increase in outside shareholders interest		137	19	-	-
Net cash outflow from financing activities		(6,848)	(4,937)	(4,182)	(3,444)
NET INCREASE IN CASH AND CASH EQUIVALENTS					
		176	27,102	(359)	24,151
Cash and cash equivalents at beginning of the year		87,907	58,151	79,525	55,374
Effect of foreign exchange rate changes		5,732	2,654	-	-
CASH AND CASH EQUIVALENTS AT END OF THE YEAR					
		93,815	87,907	79,166	79,525

Notes to the Cash Flow Statement

for the year ended 31 March 2002

	Group		CSIR	
	2002 R'000	2001 R'000	2002 R'000	2001 R'000
A. Reconciliation of net operating deficit for the year before investment income to cash generated from operations				
Net operating deficit for the year before investment income	(5,851)	(3,531)	(22,665)	(7,364)
Adjusted for:				
Depreciation	36,668	41,115	34,712	39,492
Permanent diminution of asset	1,826	-	-	-
Loss on disposal of property, plant and equipment	-	4,044	-	4,044
Profit on disposal of property, plant and equipment	(1,048)	-	(1,145)	-
Unrealised loss/(gain) on forward exchange contracts	2,400	(487)	2,400	(487)
Profit/(loss) on disposal of subsidiary	211	(709)	-	-
Goodwill written off	-	2,049	-	-
Subsidiary not previously consolidated	(578)	-	-	-
Provision against loans to subsidiaries	-	-	11,840	11,238
Provision for share write off	-	115	-	110
Amortisation of investment in technology	2,020	1,228	351	165
Operating surplus before changes in working capital	35,648	43,824	25,493	47,198
Increase in accounts receivable	(1,256)	(46,007)	(18)	(38,201)
Increase in inventory and contracts in progress	(32,330)	(2,375)	(31,133)	(314)
Increase in advances received	4,119	38,284	2,502	38,284
Increase in accounts payable and provisions	8,406	26,125	7,315	24,507
Net working capital changes	(21,061)	16,027	(21,334)	24,276
Cash generated from operations	14,587	59,851	4,159	71,474

Notes to the Cash Flow Statement

for the year ended 31 March 2002

B. Acquisition of subsidiary

On 1 April 2000, the Group acquired 100% of the issued share capital of Quotec Ltd. The purchase price of the subsidiary was R4,2 million of which R2,2 million was paid in cash and the balance is payable on the fulfillment of profit warranties.

The net assets of Quotec Limited at 1 April 2000 were as follows:

Property, plant and equipment	203
Accounts receivable	258
Inventory and contracts in progress	222
Cash and cash equivalents	2,081
Deferred tax liability	(7)
Accounts payable and accruals	(580)
	<u>2,177</u>
Goodwill	2,049
Total consideration	<u>4,226</u>

Satisfied by :

Cash	2,219
Acquisition consideration due on date of purchase	2,007
Total consideration	<u>4,226</u>

Net cash outflow arising on acquisition

Cash consideration	(2,219)
Cash and cash equivalents acquired	2,081
	<u>(138)</u>

Group

2002
R'000

2001
R'000

CSIR

2002
R'000

2001
R'000

Notes to the Cash Flow Statement

for the year ended 31 March 2002

C. Disposal of subsidiary

The group held 100% of the issued share capital in Thermaspray (Pty) Ltd. On 1 July 2001 25% of the issued share capital was transferred to the employees of the company in terms of the original shareholders agreement that was entered into during incorporation of the company.

The net assets of Thermaspray (Pty) Ltd at 1 July 2001 were as follows:

Property, plant and equipment	439
Long-term liabilities	(104)
Accounts receivable	3,662
Inventory and contracts in progress	401
Bank	390
Accounts payable and accruals	(3,945)
	843
Group's remaining share in net assets	(632)
Loss on disposal	(211)
Total consideration *	-
Satisfied by :	
Cash	-
Net cash inflow arising on disposal	
Cash consideration	-
Bank transferred	-
	-

The outside shareholders interest in the company at the date of disposal amounted to R211 000 (2001: Rnil).

* The shares were disposed of for R1.

Group		CSIR	
2002	2001	2002	2001
R'000	R'000	R'000	R'000

Notes to the Cash Flow Statement

for the year ended 31 March 2002

D. Disposal of subsidiary

The CSIR held 100% of the issued share capital in Snowden Mining Industry Consultants (Pty) Ltd. The share held was transferred to Miningtek Consultants and Services Limited during the 2001 year. The transfer of the share was done in accordance with the agreement between the CSIR and the joint venture partners.

The net assets of Snowden Mining Industry Consultants (Pty) Ltd at 31 October 2001 were as follows:

	Group	CSIR
	2002	2002
	R'000	R'000
Property, plant and equipment	394	
Long-term liabilities	(1,606)	
Accounts receivable	2,041	
Inventory and contracts in progress	403	
Bank overdraft	(751)	
Accounts payable and accruals	(1,190)	
	<u>(709)</u>	
Profit on disposal	709	
Total consideration *	<u>-</u>	
Satisfied by :		
Cash	<u>-</u>	
Net cash inflow arising on disposal		
Cash consideration	-	
Bank transferred	751	
	<u>751</u>	

* The shares were disposed of for R1.

Notes to the Annual Financial Statements

31 March 2002

1. Principal accounting policies

The annual financial statements are prepared on the historical cost basis, in accordance with South African Statements of Generally Accepted Accounting Practice and incorporated the following principal accounting policies, which have been consistently applied in all material respects.

1.1 Basis of consolidation

The annual consolidated financial statements incorporate the annual financial statements of the CSIR and its subsidiaries. The operating results of the subsidiaries are included from the effective date of acquisition and up to the effective dates of disposal. All significant inter-company transactions and balances have been eliminated.

1.2 Associate companies

Associate companies are those companies in which the group has a significant influence and which it intends to hold as long-term investments. Associate companies are accounted for on the equity method from their most recently audited financial statements or unaudited management information as at 31 March 2002.

1.3 Joint ventures

Investments in jointly controlled entities are accounted for by the equity method from their most recently audited financial statements or unaudited management information as at 31 March 2002. The carrying amount of such investments is reduced to recognise any decline, other than a temporary decline, in the value of individual investments.

Where a group enterprise transacts with a joint venture, unrealised profits and losses are eliminated to the extent of the group's interest in the relevant joint venture, except where unrealised losses provide evidence of an impairment of the asset transferred.

1.4 Investments

Investments, other than in associates or joint ventures, are stated at cost less any provisions for diminution in value. Dividends are accounted for on the last day of registration in respect of listed investments and when declared in respect of unlisted investments. On disposal of an investment, the difference between the net disposal proceeds and the carrying amount is charged or credited to the income statement.

1.5 Research and development

Research costs are charged against income as and when incurred. Development costs of clearly defined products, of which the future technical feasibility and commercial viability has been proven to the satisfaction of the Board, are capitalised (refer note 1.8.2). The extent of capitalisation is limited to an amount equal to the present value of expected net future income.

1.6 Foreign currencies

1.6.1 Foreign entities

The financial statements of foreign subsidiaries are translated into South African currency as follows:

- Assets and liabilities at rates of exchange ruling at the reporting entities' financial year end.
- Income, expenditure and cash flow items at the average rates of exchange during the relevant financial year.

Differences arising on translation are reflected in non-distributable reserves in the foreign currency translation reserve.

1.6.2 Foreign currency transactions and balances

Transactions in foreign currencies are converted to South African Rand at the rate of exchange ruling at the date of the transaction.

Monetary assets and liabilities denominated in foreign currencies are stated in South African currency using the rates of exchange ruling at the financial year end. The resulting exchange differences are dealt with in the income statement.

1.6.3 Financial assets and liabilities

Gains and losses from forward exchange contracts are dealt with in the income statement. Fair values of financial instruments are disclosed in the financial statements.

1.7 Property, plant and equipment

1.7.1 Land and buildings

Land is stated at cost and buildings are stated at cost less accumulated depreciation. This constitutes a change in accounting policy (refer note 2).

1.7.2 Plant, equipment and vehicles

Plant, equipment and vehicles are stated at cost less accumulated depreciation.

Notes to the Annual Financial Statements

31 March 2002

1.7.3 Finance leases

Assets acquired under finance lease agreements are capitalised at their cash cost equivalent and a corresponding liability is raised. Lease payments are allocated between the lease finance cost and the capital repayment using the effective interest rate method.

1.7.4 Depreciation

Depreciation is based on cost and calculated on the straight line method at rates considered appropriate to write off book values over the estimated useful lives of the assets, except for:

- Assets costing R2 000 or less, which are written off in the year of acquisition.
- Assets specifically acquired for a contract, which are depreciated over the life of the contract.
- Strategic assets of limited commercial application, which are written down to expected future commercial recoverable value at acquisition, with the remaining book value depreciated over the estimated useful lives of the assets.

The estimated lives of the main categories of property, plant and equipment are as follows:

- Buildings - 40 years
- Plant - 10 years
- Equipment - 5 to 10 years
- Computer equipment - 3 to 7 years
- Vehicles - 5 years

The recorded value of these depreciated assets is periodically compared to the anticipated recoverable amount if the assets were to be sold. Where an asset's recorded value has declined below the recoverable amount, and the decline is expected to be of a permanent nature the decline is recognised as an expense. To determine the recoverable amount, discounted future cash flows are considered.

1.8 Intangible assets

1.8.1 Investment in technology

Investment in technology licensing projects and dividend producing rights are capitalised at cost and are amortised over their expected useful lives or written off based on their viability, whichever is the shorter.

1.8.2 Development expenditure and intellectual property

Development expenditure and intellectual property consist of capitalised development costs as approved by the Board. Capitalisation is limited to the present value of expected net future income (refer note 1.5).

1.8.3 Goodwill

Goodwill represents the excess of the cost of an acquisition over the fair value of the group's share of the net assets of the acquired subsidiary, joint venture or associated company at the date of the acquisition (refer notes 1.1, 1.2 and 1.3).

1.8.4 Amortisation

Amortisation is based on cost and calculated on the straight line method at rates considered appropriate to write off book values over the estimated useful lives of the intangible assets.

The estimated lives of intangible assets are as follows:

- Investment in technology - 3 to 10 years
- Development expenditure and intellectual property - 1 to 3 years
- Goodwill - 1 to 3 years

The recorded value of these amortised intangible assets is periodically compared to the anticipated recoverable amount if the assets were to be disposed of. Where an asset's recorded value has declined below the recoverable amount, and the decline is expected to be of a permanent nature the decline is recognised as an expense. To determine the recoverable amount, discounted future cash flows are considered.

Notes to the Annual Financial Statements

31 March 2002

1.9 Retirement benefits

1.9.1 Pension fund

The CSIR operates a defined contribution plan, the assets of which are held in a separate trustee-administered fund. The benefits payable by the fund in the future, due to retirements and withdrawals from the fund, are contributions by members to the fund together with fund interest at a rate determined by the valuator with the consent of the trustees. The rate is so determined that the value of the total of the fund shall not exceed the value of the total assets of the fund.

The CSIR's contributions to the plan are charged to the income statement when incurred.

1.9.2 Post retirement benefits other than pensions

The CSIR formed an independent medical aid scheme on 1 April 1997. This fund has accepted responsibility for all future liabilities of members in terms of the scheme rules.

1.10 Inventory and contracts in progress

Raw materials and finished goods are stated at the lower of cost and net realisable value. Cost of stock is determined by the average method. Contracts in progress are stated at the lower of cost and net realisable value. Net realisable value is calculated as a percentage of the sales value of work completed, after provision for losses relating to the stage of completion and any foreseeable losses to completion of the contract.

1.11 Deferred taxation

Deferred tax is accounted for using the balance sheet liability method in respect of temporary differences arising from differences between the carrying amount of assets and liabilities in the financial statements and the corresponding tax basis used in the computation of the taxable profit.

Where the tax effects of temporary differences, including those arising from tax losses, give rise to a deferred tax asset, the asset is recognised only if it is probable that future taxable income will be sufficient to allow the tax benefit of the loss to be realised.

1.12 Provisions

Provisions are recognised when the group has a present legal or constructive obligation as a result of past events, for which it is probable that an outflow of economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

1.13 Government assistance

Government assistance is recorded as income when it becomes receivable and is then recognised as income on a systematic basis over periods necessary to match the assistance with the related costs it is intended to compensate.

1.14 Revenue

Revenue comprises:

- The net invoiced value of research, development and implementation contracts, excluding value added tax
- Income acknowledged on contracts in progress as calculated per note 1.10
- The annual Parliamentary grant adjusted for the grant received for projects started before year end but not completed
- Royalties
- Consolidated revenue excludes sales to group companies



Notes to the Annual Financial Statements

31 March 2002

2. Changes in accounting policy

During the year under review the CSIR adopted AC 135. Buildings were previously classified as investment property. The adoption of AC 135 resulted in buildings to be stated at cost less accumulated depreciation. This change is necessary to comply with Generally Accepted Accounting Practice.

The effect of the change on the net deficit of the current and prior year:

	Group		CSIR	
	2002	2001	2002	2001
	R'000	%	R'000	%
	(3,728)		(3,728)	
				(3,568)

The effect of the change on the net surplus/(deficit) on years ended prior to 31 March 2001 is reflected in the Statement of Changes in Equity.

3. Revenue

Parliamentary grant

Parliamentary grant received

Less:

Grant received for projects started before year end but not completed

Add:

Grants received in prior year for projects completed in this year

	Group		CSIR	
	2002	2001	2002	2001
	R'000	%	R'000	%
	296,883	32	296,332	36
	302,877	33	301,111	36
	(15,254)	(2)	(9,260)	(1)
	9,260	1	4,481	1

Contract income

Private sector

Public sector

National Safety & Security sector

International sector (including Africa)

	Group		CSIR	
	2002	2001	2002	2001
	R'000	%	R'000	%
	603,843	67	541,584	63
	250,441	28	267,775	31
	162,891	18	109,982	13
	82,293	9	71,976	8
	108,218	12	91,851	11

Royalties

	Group		CSIR	
	2002	2001	2002	2001
	R'000	%	R'000	%
	8,165	1	6,767	1
	908,891	100	844,683	100
	863,104	100	789,200	100

Notes to the Annual Financial Statements

31 March 2002

Group

CSIR

4. Net operating deficit for the year before investment income

The net operating deficit for the year before investment income is arrived at after taking the following items into account:

	Group		CSIR	
	2002	2001	2002	2001
	R'000	R'000	R'000	R'000
Auditors' remuneration	1,939	1,444	1,780	1,225
Audit fees	1,842	1,372	1,691	1,164
Expenses	97	72	89	61
Net foreign exchange gains	11,720	517	11,825	316
Fees paid for services	109,648	77,425	105,944	74,253
Patent costs	1,560	1,676	1,560	1,676
Legal costs	4,823	1,175	4,602	1,040
Consultants	103,265	74,574	99,782	71,537
Rentals paid for	19,672	15,177	16,229	13,379
Buildings	3,985	1,721	799	438
Equipment	15,687	13,456	15,430	12,941
Board members' emoluments	7,525	4,973	512	917
For services on the Board	519	168	234	168
For managerial services	7,006	4,805	278	749
Permanent diminution of asset	1,826	-	-	-
Goodwill written off on acquisition of Quotec Ltd	-	2,049	-	-
Amortisation of investment in technology	2,020	1,228	351	165
Lost and/or stolen equipment	255	-	255	-
Damaged equipment	290	-	290	-
Theft and/or damage to hired vehicles	452	-	452	-
With reference to the arbitration matter referred to in last year's financial statements (note 24), the case has been settled. Costs not previously provided are included under operating expenses in the income statement. The final settlement agreement contained a confidentiality clause and therefore specific amounts and other particulars cannot be disclosed.	-	-	-	-

Notes to the Annual Financial Statements

31 March 2002

	Group		CSIR	
	2002 R'000	2001 R'000	2002 R'000	2001 R'000
5. Income from investments				
Interest	14,819	13,048	13,927	12,753
Earned	14,847	13,201	13,953	12,756
Paid	(28)	(153)	(26)	(3)
Dividends received	3	-	851	-
	14,822	13,048	14,778	12,753

6. Taxation

South African normal taxation	796	211	-	-
Current taxation: Current year	746	261	-	-
Deferred taxation: Current year	50	(50)	-	-
Foreign taxation	266	162	-	-
Current taxation	260	156	-	-
Deferred taxation	6	6	-	-
	1,062	373	-	-

The CSIR and its subsidiary, South African Inventions Development Corporation (SAIDCOR), are exempt from South African normal taxation.

The taxation is based on the taxable income of the subsidiary companies liable for income tax.

South African normal rate of taxation
Current and deferred taxation - effective rate

30%

30%

7. Property, plant and equipment

	Depreciation for the year R'000	2002			2001		
		Cost R'000	Accumulated depreciation R'000	Net book value R'000	Cost R'000	Accumulated depreciation R'000	Net book value R'000
GROUP							
Land	-	8,795	-	8,795	8,795	-	8,795
Buildings	3,728	172,635	71,708	100,927	165,158	68,360	96,798
Equipment	32,272	368,528	281,085	87,443	370,953	273,093	97,860
Vehicles	668	4,260	3,056	1,204	4,266	2,656	1,610
	36,668	554,218	355,849	198,369	549,172	344,109	205,063
CSIR							
Land	-	8,795	-	8,795	8,795	-	8,795
Buildings	3,728	172,635	71,708	100,927	165,158	68,360	96,798
Equipment	30,572	357,316	274,332	82,984	362,443	269,865	92,578
Vehicles	412	3,228	2,540	688	3,050	2,322	728
	34,712	541,974	348,580	193,394	539,446	340,547	198,899

Notes to the Annual Financial Statements

31 March 2002

7. Property, plant and equipment (continued)

	2002				
	Net book value				
	Land	Buildings	Equipment	Vehicles	Total
	R'000	R'000	R'000	R'000	R'000
GROUP					
Opening Balance	8,795	96,798	97,860	1,610	205,063
Additions	-	8,056	28,627	396	37,079
Disposals	-	(199)	(5,248)	(134)	(5,581)
Depreciation	-	(3,728)	(32,272)	(668)	(36,668)
Permanent deminution of asset	-	-	(1,826)	-	(1,826)
Exchange differences	-	-	302	-	302
	8,795	100,927	87,443	1,204	198,369
CSIR					
Opening Balance	8,795	96,798	92,578	728	198,899
Additions	-	8,056	25,939	396	34,391
Disposals	-	(199)	(4,961)	(24)	(5,184)
Depreciation	-	(3,728)	(30,572)	(412)	(34,712)
	8,795	100,927	82,984	688	193,394

Land and buildings are unencumbered and full details of the titles are available at the registered office of the CSIR.

Equipment and vehicles with a net book value of R660 785 (2001: R670 208) are encumbered (see note 16).

8. Intangible assets

	Amortisation for the year R'000	2002			2001		
		Cost	Accumulated amortisation	Net book value	Cost	Accumulated amortisation	Net book value
		R'000	R'000	R'000	R'000	R'000	R'000
GROUP							
Investments in technology	2,020	10,605	5,752	4,853	8,932	3,732	5,200
CSIR							
Investment in technology	351	1,398	649	749	880	298	582

	2002	
	Group	CSIR
Opening Balance	5,200	582
Additions	1,673	518
Amortisation	(2,020)	(351)
	4,853	749

Notes to the Annual Financial Statements

31 March 2002

9. Interest in subsidiaries

Shares at cost
Indebtedness
By subsidiaries
Provision against loans
To subsidiaries

Group		CSIR	
2002 R'000	2001 R'000	2002 R'000	2001 R'000
-	-	36,778	36,778
-	-	942	7,477
-	-	32,448	27,259
-	-	(23,078)	(11,238)
-	-	(8,428)	(8,544)
-	-	37,720	44,255

See Annexure A for details

10. Investments

	Number of shares held			Class of shares
	% held	2002	2001	
Unlisted Shares				
-Breathtex (Pty) Ltd	30	12,000	12,000	Ordinary
Provision for share write off				
-Virus Protection Systems (Pty) Ltd	15	25	25	Ordinary
Provision for share write off				
-Aluminum Squeeze Castors (Pty) Ltd	5	10,000	10,000	Ordinary
Provision for share write off				
-Naledi Ya Africa (Pty) Ltd	25	250	250	Ordinary
-Pan-A-Cam (Pty) Ltd	15	18	18	Ordinary

2,005	2,005	2,000	2,000
5,800	5,800	5,800	5,800
(3,800)	(3,800)	(3,800)	(3,800)
-	110	-	110
-	(110)	-	(110)
5	10	-	-
-	(5)	-	-
-	-	-	-
-	-	-	-

Executive's valuation of shares R'000 2,005 2,005

Deposits (funds on call)

10,000	30,000	10,000	30,000
12,005	32,005	12,000	32,000

Current accounts are included in current assets and/or current liabilities.

Notes to the Annual Financial Statements

31 March 2002

	Group		CSIR	
	2002 R'000	2001 R'000	2002 R'000	2001 R'000
11. Interest in joint ventures and associates				
Cost of investments ¹	11,838	8,545	-	500
Loans to joint ventures	13,661	6,742	5,636	3,907
Share of post-acquisition losses	(1,206)	(1,879)	-	-
	24,293	13,408	5,636	4,407

¹ Included in the cost of the investments is an amount of R11,3 million for convertible unsecured debenture stock in Miningtek Consultants & Services Limited. The stock is convertible at an extraordinary general meeting of the shareholders. The CSIR will not have the right to vote at such a meeting, if called. The debenture stock can be converted into a further 100 fully paid ordinary shares. Additional shares will be issued to the other block of shareholders so that after the conversion, ownership remains in the same proportion as before conversion.

Details of the joint ventures at 31 March 2002 are as follows:

Name of joint venture	Place of incorporation	Portion of ownership interest	Portion of voting power held	Principal activity	Carrying value		Financial year end
					2002	2001	
Biosys (Pty) Ltd	South Africa	50%	50%	Development of botanical extracts	320	441	31 March
Miningtek Consultants & Services Ltd	British Virgin Islands	50%	50%	Mining industry consultancy	19,156	11,882	31 March
Aeroflo (Pty) Ltd ²	South Africa	100%	50%	Development of helicopter filters	(254)	1,083	31 March
Sera (Pty) Ltd	South Africa	50%	50%	Commercialisation and licensing of patents	5,069	-	31 March
Woltech (Pty) Ltd	South Africa	50%	50%	Hold and commercialise intellectual property	2	2	30 June
Ellipsoid Technology (Pty) Ltd	South Africa	50%	50%	Development of encapsulation technology	-	-	31 March

² The CSIR and the National Energy Corporation of South Africa (NECSA) decided to form the Aeroflo joint venture. At year end the NECSA is still awaiting ministerial approval to take up 50% of the shares in Aeroflo (Pty) Ltd. This has led to Aeroflo (Pty) Ltd being a subsidiary as defined in Section 1 of the Companies Act. As it is the group's intention for the NECSA to obtain 50% of the shares in Aeroflo (Pty) Ltd, the control is seen to be temporary. Accordingly Aeroflo (Pty) Ltd has been accounted for as a joint venture. The information required by par 62 to 64 of schedule 4 to the Companies Act is included in the disclosure below.

Where financial statements were not available unaudited management accounts as at 31 March 2002 were used to account for joint ventures.

Notes to the Annual Financial Statements

31 March 2002

	Group	CSIR
	2002	2001
	R'000	R'000
11. Interest in joint ventures and associates (continued)		
The following are details of the significant joint ventures' assets, liabilities and income:		
Current assets	52,598	26,462
Long-term assets	11,504	16,750
Current liabilities	17,359	16,759
Long-term liabilities	51,338	27,848
Income	77,779	44,143
Expenses	74,268	45,614

Details of the associates at 31 March 2002 are as follows:

Name of associates	Place of incorporation	Portion of ownership interest	Portion of voting power held	Principal activity	Carrying value		Financial year end
					2002	2001	
AIDC Development Centre (Pty) Ltd	South Africa	40%	40%	Automotive industry development and support services	-	-	31 March

Where financial statements were not available unaudited management accounts as at 31 March 2002 were used to account for associates.

	Group	
	2002	2001
	R'000	R'000
The following are details of the associate's assets, liabilities and income:		
Current assets	21,296	-
Long-term assets	1,000	-
Current liabilities	23,215	-
Long-term liabilities	-	-
Income	16,822	-
Expenses	17,740	-

Notes to the Annual Financial Statements

31 March 2002

	Group		CSIR	
	2002 R'000	2001 R'000	2002 R'000	2001 R'000
12. Accounts receivable				
Trade receivables	126,965	127,404	117,477	119,470
Prepaid expenditure	8,039	5,791	7,925	5,265
Forward exchange contracts	-	487	-	487
Other receivables	21,560	21,626	20,485	20,647
	156,564	155,308	145,887	145,869
13. Inventory and contracts in progress				
Inventory	7,500	5,763	5,276	4,464
Contracts in progress less provision for losses	72,485	41,892	71,173	40,852
	79,985	47,655	76,449	45,316
14. Deferred taxation				
Balance at the beginning of the year	44	-	-	-
Tax loss	(134)	134	-	-
Provisions	(36)	36	-	-
Prepayments	120	(120)	-	-
Accelerated capital allowances	(14)	(6)	-	-
	(20)	44	-	-
15. Outside shareholders' interest and loan payable				
Shareholders loans	156	19	-	-
Profit attributable to outside shareholders	493	-	-	-
Prior to date of disposal	211	-	-	-
Current year	282	-	-	-
	649	19	-	-

The loans are interest free, unsecured and there are no fixed terms of repayment. The outside shareholders' interest is R82 (2001: R50).

Notes to the Annual Financial Statements

31 March 2002

16. Long-term liabilities

Unsecured and interest free

IDC

The loan is repayable annually commencing on 30 June 1996 in amounts equal to 45% of the nett royalty income and/or the net deemed royalty income from specific projects. From 30 September 1999 the annual payment is equal to 70% of the net royalty income. The loan repayments will be terminated at the earlier of 30 November 2002 or the date upon which the payments exceed the loan amount. Less: Portion repayable within one year included in current liabilities (note 19)

Group		CSIR	
2002	2001	2002	2001
R'000	R'000	R'000	R'000
-	2,820	-	-
1,207	2,820	-	-
(1,207)	-	-	-

AECI

The loan is repayable from 30 April 2000 as follows:

30 April 2000 - R5 350

30 April 2001 - R5 000

30 April 2002 - R4 000

Less: Portion repayable within one year included in current liabilities (note 19)

-	4,000	-	4,000
4,000	9,000	4,000	9,000
(4,000)	(5,000)	(4,000)	(5,000)

Secured and interest bearing

Capitalised finance leases

Total leases

Less: Portion repayable within one year included in current liabilities (note 19)

624	607	-	-
708	780	-	-
(84)	(173)	-	-

The leases are repayable in monthly installments at interest rates that vary between 14,0% to 15,45%.

The current finance leases are secured over motor vehicles and machinery with a net book value of R660 785 (2001: R670 208) (see note 7).

624	7,427	-	4,000
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Notes to the Annual Financial Statements

31 March 2002

	Group		CSIR	
	2002 R'000	2001 R'000	2002 R'000	2001 R'000
17. Acquisition consideration due				
Unsecured and interest free				
Shares bought in Quotec Limited	2,419	2,334	2,419	2,334
Less: Portion repayable within one year included in current liabilities (note 19)	(1,045)	(778)	(1,045)	(778)
	1,374	1,556	1,374	1,556
18. Advances received				
Advances on contracts received from clients	73,629	69,510	73,620	71,118
19. Accounts payable and accruals				
Accounts payable and accruals	97,786	105,436	90,094	97,402
Forward exchange contracts	2,400	-	2,400	-
Short-term portion of long-term liabilities (note 16 & 17)	6,336	5,951	5,045	5,778
	106,522	111,387	97,539	103,180
20. Provisions				
GROUP				
Provision for salary and related expenses	50,736	38,995	(24,582)	65,149
The provision for salary and related expenses include provisions for leave pay and bonuses. The provision represents management's best estimate of the liability at year end.				
Provision for own insurance fund	3,607	1,953	(2,595)	2,965
The provision for own insurance fund represents management's best estimate of the insurance liability for past events not covered under the insurance policy at year end.				
Provision for legal costs and litigation				
The provision for legal costs represents management's best estimate of the liability for legal costs at year end. The amount is included in accounts payable and accruals (note 19).				
Provision for future warranty expenses	-	1,900	-	1,900
The provision for future warranty expenses represents possible future warranty expenses regarding specialised equipment sold. The provision represents management's best estimate of the liability at year end.				
	54,343	42,848	(27,177)	70,014

Notes to the Annual Financial Statements

31 March 2002

20. Provisions (continued)

CSIR

Provision for salary and related expenses

The provision for salary and related expenses include provisions for leave pay and bonuses. The provision represents management's best estimate of the liability at year end.

Opening balance	Additional provisions	Utilised and reversed	Closing balance
50,519	38,665	(24,567)	64,617

Provision for own insurance fund

The provision for own insurance fund represents management's best estimate of the insurance liability for past events not covered under the insurance policy at year end.

3,607	1,953	(2,595)	2,965
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Provision for legal costs and litigation

The provision for legal costs represents management's best estimate of the liability for legal costs at year end. The amount is included in accounts payable and accruals (note 19).

Provision for future warranty expenses

The provision for future warranty expenses represents possible future warranty expenses regarding specialised equipment sold. The provision represents management's best estimate of the liability at year end.

-	1,900	-	1,900
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54,126	42,518	(27,162)	69,482
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Group

CSIR

2002 R'000	2001 R'000	2002 R'000	2001 R'000
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21. Operating lease commitments

Financial commitments under non-cancellable operating leases will result in the following payments falling due:

Within one year:

Land and buildings

Equipment

Vehicles

6,732	11,626	6,660	10,748
-------	--------	-------	--------

-	554	-	-
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4,935	9,698	4,906	9,411
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1,797	1,374	1,754	1,337
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Within two to five years:

Land and buildings

Equipment

Vehicles

7,032	14,360	6,379	13,147
-------	--------	-------	--------

614	705	-	-
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3,989	12,063	3,954	11,574
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2,429	1,592	2,425	1,573
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Notes to the Annual Financial Statements

31 March 2002

22. Retirement benefits of employees

CSIR Pension Fund

The Fund is registered in terms of the Pension Funds Act, 1956, and is a defined contribution plan. The CSIR's liability to the Fund is limited to paying the employer contributions. Life cover and dependants' pensions are fully secured by a continued income and life insurance policy.

Employer contributions of R26,3 million (2001: R24,5 million) and employee contributions of R15,7 million (2001: R14,7 million) were paid over during the year. Employer contributions are charged against income when incurred.

Mine Officials Pension Fund and Sentinal

At the time of the merger with the Chamber of Mines Research Organization in 1993 certain COMRO (Sentinal Mining) employees elected to remain members of the Mine Officials Pension Fund (1) and Sentinal (previously Chamber of Mines Pension Fund) (6). In terms of the agreement with the Chamber of Mines this election holds no liability for the CSIR other than paying the monthly employee contributions. The funds are defined benefit plans.

On 1 March 2001 the members of the Chamber of Mines Pension Fund moved to Sentinal.

In respect of the employees who have formally converted their secondment to a CSIR appointment, employer contributions of R294 926 (2001: R311 825) and employee contribution of R161 189 (2001: R171 715) were paid over during the year. Employer contributions are charged against income when incurred.

Associated Institutions Pension Fund (AIPF) and Temporary Employees Pension Fund (TEPF)

These Funds are defined benefit plans. The formula used to determine pensions is based on the pensionable earnings of the final year, and the aggregate period of uninterrupted membership.

The CSIR has 6 (2001: 6) employees who are members of the AIPF and 1 (2001: 1) employee is a member of the TEPF. Both funds are controlled by the State which has assumed responsibility for the unfunded portions of these funds.

Employer contributions of R64 090 (2001: R105 217) and employee contributions of R37 868 (2001: R44 876) were paid over during the year to the AIPF and TEPF.

Post-retirement medical benefits

The CSIR formed its own Medical Aid Scheme, based on managed health care principles, with a strong emphasis on co-responsibility between employer and employee. The objective is to provide sustainable health care and simultaneously limit the cost, present and future, to a level which is affordable.

The CSIR Board approved a cash payment of R190 million in 1997 to the medical aid scheme, thereby transferring the liability for retirement benefits of members to the scheme. The future proceeds of this payment is expected to substantially cover the actuarial valuation of the unfunded liability as per the actuarial valuation on 30 June 2001.

The actuarial valuation as at 30 June 2001 of the post-retirement liability indicated that the reserves held by the Scheme together with the employer's obligation to make payments in respect of post-retirement medical benefits should be adequate to fund the Scheme's liability in respect of post-retirement medical benefits.

23. Insurance and risk management

The insurance and risk management policies adopted by the CSIR are aimed at obtaining sufficient cover at the minimum cost to protect its asset base, earning capacity and legal obligations against unacceptable losses.

All property, plant and equipment are insured at current replacement value. Risks of a possible catastrophic nature are identified and insured while acceptable risks of a non catastrophic nature are self-insured. Self-insurance has been instituted where the cost-to-benefit relationship exceeds the risk and the incidence of losses are of a minor and infrequent nature. Self-insured risks are reviewed on an annual basis to ensure cover is adequate. An amount of R10,75 million (2001: R10,75 million) is held in a self-insurance fund to cover these risks. This amount is disclosed as part of reserves in the balance sheet. No major losses were experienced during the year under review. Claims of a general nature were adequately covered.

Notes to the Annual Financial Statements

31 March 2002

	Group		CSIR	
	2002 R'000	2001 R'000	2002 R'000	2001 R'000
24. Contingent liabilities				
Bank guarantees issued in respect of third party liabilities	23,005	15,605	23,005	15,605
25. Capital commitments				
Authorised but not contracted	11,410	9,550	11,410	9,550

This capital expenditure is to be financed from internal sources.

26. Comparative figures

Where necessary comparative figures have been reclassified to ensure comparability.

27. Financial instruments

27.1 Forward exchange contracts

The Group enters into forward exchange contracts to buy specified amounts of foreign currencies in the future at a predetermined exchange rate.

Forward exchange contracts are entered into mainly to cover import orders. The Group has no policy to enter into forward exchange contracts for anticipated foreign receipts.

The Group does not use derivative financial instruments for speculative purposes.

Accounts receivable and accounts payable at 31 March 2002 include foreign trade receivables of R19,0 million (2001: R22,3 million) and foreign trade payables of R 576 807 (2001: R Nil). The full amounts of foreign trade payables for 2002 were covered by forward exchange contracts at year end.

	Group		CSIR	
	2002 R'000	2001 R'000	2002 R'000	2001 R'000
The following table summarises by major currency the amounts to be paid under forward exchange contracts:				
US Dollars	63,231	34,129	63,231	34,129
3 - 6 months at rates averaging USD 11,5724 (2001: USD 7,8654)	61,940	34,129	61,940	34,129
6 - 12 months at rates averaging USD 12,2968	1,291	-	1,291	-
British Pounds	4,674	247	4,674	247
3 - 6 months at rates averaging GBP 16,5149 (2001: GBP 11,5634)	4,674	61	4,674	61
6 - 12 months at rates averaging GBP 11,84 (2001)	-	186	-	186
Euro	6,934	7,090	6,934	7,090
3 - 6 months at rates averaging EUR 10,1343 (2001: EUR 7,1705)	6,934	3,585	6,934	3,585
6 - 12 months at rates averaging EUR 7,7283 (2001)	-	3,505	-	3,505
	74,839	41,466	74,839	41,466

Notes to the Annual Financial Statements

31 March 2002

27.2 Options

As part of a technology transfer agreement with INTERVID LTD an option agreement was entered into between INTERVID LTD and the CSIR, whereby the CSIR has an option to subscribe for 2 000 000 ordinary shares in the share capital of INTERVID LTD at a price of R3 per share until 30 May 2002. During 2001 the CSIR, in terms of the option agreement, subscribed for and sold 1 000 000 ordinary shares. The share price at the end of March 2002 was R2,60.

27.3 Credit risk

Financial assets that could subject the Group to credit risk consist principally of cash at bank and cash equivalents, deposits, accounts receivable and loans to joint ventures and subsidiaries. The Group's cash equivalents are placed with high credit quality financial institutions. Accounts receivable and loans to joint ventures and subsidiaries are presented net of the allowance for doubtful receivables or loan write-offs. Credit risk with respect to trade receivables is limited due to the large number of customers comprising the Group's customer base and their dispersion across different industries and geographical areas. Accordingly the Group does not have significant concentration of credit risk.

The carrying amounts of financial assets included in the balance sheet represent the Group's exposure to credit risk in relation to these assets.

The group does not have any significant exposure to any individual customer or counter party.

27.4 Fair values

At 31 March 2002 the carrying amount of cash and cash equivalents, deposits, accounts receivable, accounts payable, contracts in progress, advances received and short-term borrowings approximated their fair values due to the short-term maturities of these assets and liabilities.

Long-term loans to joint ventures and subsidiaries are interest free with no fixed repayment terms and therefore the fair value of these loans cannot be calculated.

The fair value of acquisition consideration due cannot be determined due to the uncertainty of the foreign currency exchange rates and the dates of payment of the acquisition consideration.

The fair value of the loans to outside shareholders cannot be determined as the loans are interest free with no fixed terms of repayment.

Annexure A: Interest in Subsidiaries

31 March 2002

Interests of the CSIR

Consolidated subsidiaries	Country of incorporation	Issued capital R'000	Effective holding		Financial year end
			2002 %	2001 %	
DIRECT INVESTMENTS					
South African Inventions Development Corporation (SAIDCOR)	South Africa	27 220	100	100	31 March
Technovent (Pty) Ltd	South Africa	5,000	100	100	31 March
CSIR International Limited*	British Virgin Island	326	100	100	31 March
CSIR North America Inc *	United States of America	5	100	100	31 March
Quotec Limited	United Kingdom	100	100	100	31 March
* No statutory audit was performed					
INDIRECT INVESTMENTS					
Included in SAIDCOR:					
Technology Finance Corporation (Pty) Ltd (TECHNIFIN)	South Africa	5 200	100	100	31 March
Included in TECHNIFIN:					
Quality Electronics Developments (Pty) Ltd	South Africa	1 000	76	76	30 June
Implico BV (Incorporated in the Netherlands) (consolidated as from 1 March 2001)	Netherlands/ South Africa	500	100	100	31 March
Included in Technovent (Pty) Ltd:					
AMP Ceramics (Pty) Ltd *	South Africa	-	100	100	31 March
Brilliant Security Solutions (Pty) Ltd **	South Africa	-	88	75	31 March
Plasmatherm (Pty) Ltd *	South Africa	-	100	100	31 March
Thermaspray (Pty) Ltd ****	South Africa	-	75	100	31 March
Pipeline Performance Technologies (Pty) Ltd****	South Africa	-	75	75	31 March
Agrimage (Pty) Ltd***	South Africa	-	80	80	31 March

* Issued capital R100 and Shares at cost R100

** Issued capital R100 and Shares at cost R88

*** Issued capital R100 and Shares at cost R80

**** Issued capital R100 and Shares at cost R75

The group has interests in nine dormant companies. Details of these interests are available at the company's registered office.



Interests of the CSIR

Shares at cost		Net indebtedness				Net investment		General nature of business
2002	2001	to subsidiaries		by subsidiaries		2002	2001	
R'000	R'000	2002	2001	2002	2001	R'000	R'000	
		R'000	R'000	R'000	R'000			
27,220	27,220	8,428	8,544	-	-	18,792	18,676	Investment in research development and implementation of technology.
5,000	5,000	-	-	599	1,042	5,599	6,042	The company sources technologies and entrepreneurs from the CSIR, other S&T institutions, universities or any developer of technology and develops them into viable businesses with the aim of spinning them off for capital gain.
326	326	-	-	6,293	6,293	6,619	6,619	The company serves as a holding company for certain CSIR international activities.
5	5	-	-	1,063	2,602	1,068	2,607	Supports and consults to the pipeline industry.
4,227	4,227	-	-	302	-	4,529	4,227	The principal activity of the company is that of consultants on technology auditing, technology evaluation and technology transfer on behalf of clients in the public and the private sectors.
36,778	36,778	8,428	8,544	8,257	9,937	36,607	38,171	
4,400	4,400							The acquisition and transfer of technology to industry by licensing new inventions, providing finance to develop technology and venture capital for the exploitation thereof.
-	-							Holder of intellectual property in electronic technologies. This subsidiary is not consolidated because the Board of CSIR is of the opinion that it would be of no real value to the users of the annual financial statements in view of the insignificant amounts involved. The investment was written off during 1997.
118	118							Assist research institutes, companies and individuals to acquire and/or develop and transfer to industry commercially viable technology. Supports the commercialisation of technology by licensing inventions, providing finance to develop technology and selling certain products..
-	-							Designs and supplies high quality ceramic injection moulded products to a variety of end users and equipment manufacturers .
-	-							Commercialises and exploits a range of intrusion alarm systems.
-	-							Provides plasma nitriding surface hardening services to the industry.
-	-							Develops and applies ceramic and metal thermal spray coatings and offers customised solutions to industry.
-	-			1,113	6,084	1,113	6,084	The management of pipelines and water networks using technology solutions.
-	-							Providing satellite images to farmers for precision farming.
		8,428	8,544	9,370	16,021	37,720	44,255	

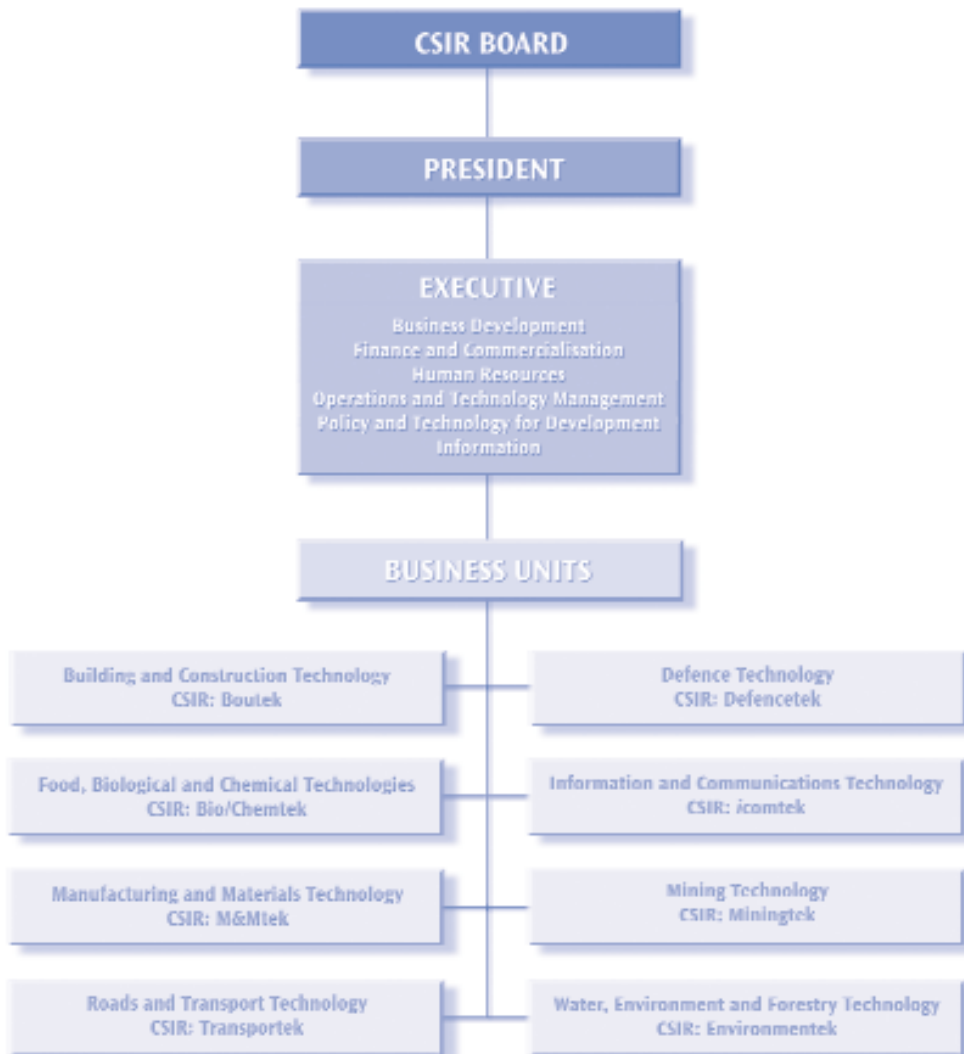
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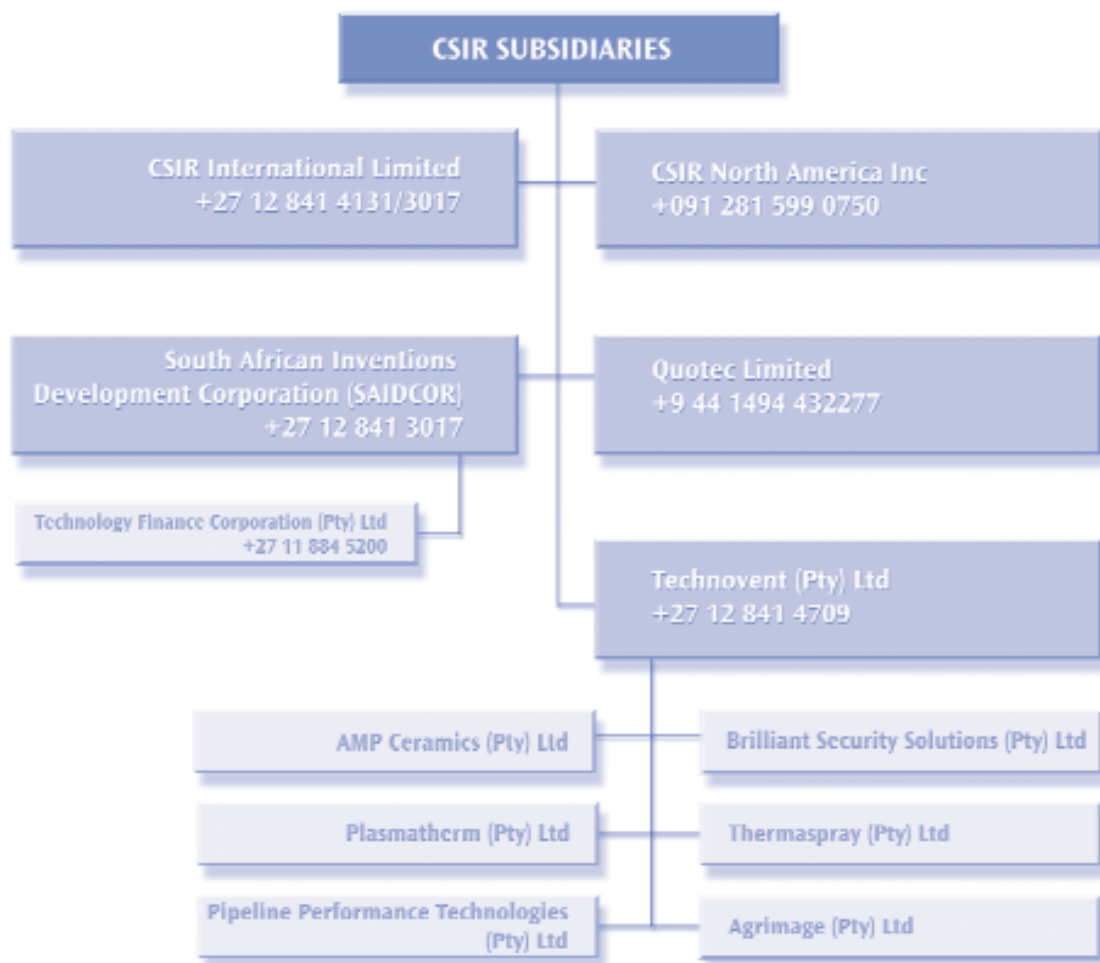
CSIR Structure



The Free State and KwaZulu-Natal Indigenous Food Fairs have had several positive outcomes in terms of economic growth and the emergence of many small, medium and micro enterprises. Officiating at the KZN Food Fair was DACST Deputy Minister Ms BS Mabandla, pictured here with CSIR's Ms Tshidi Moroka, ARC's Ms Sadie Motsuenyane and Mr William Mngoma, Director of the KZN Department of Agriculture.

The CSIR. People with vision, partnerships with purpose, technology with impact.





To learn more about the CSIR and its activities, please visit our website at
<http://www.csir.co.za>

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