

ANNUAL REPORT 2003



CSIR MANDATE

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.

CSIR VALUES

In everything we do, excellence is the hallmark. The solutions we provide are based on the best thinking, unwavering integrity and a culture of innovation fuelled by the inventiveness and initiative of our people. At the CSIR, we resonate with the diversity of this continent, respond to its opportunities and challenges, and serve it with our combined ingenuity, now and into the future.



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CHAIRMAN'S REVIEW

As South Africa's premier science, technology and innovation organisation, the CSIR plays a singular role in the national context. Its mandate clearly identifies the dual focus of its endeavours - to foster industrial and scientific development and to contribute to the improved quality of life of the people of South Africa. As such, the CSIR's responsibilities and contributions straddle the needs of society, government and business. While locating itself in the economic arena, sensitive to global, regional and international trends, it must, at the same time, address those issues, which top our country's social agenda. A clear indication of the urgency attendant on these issues, and specifically on poverty alleviation, came during President Mbeki's State of the Nation address in which he called for 'a detailed and integrated programme of action against poverty, and the building and activation of the broad front for reconstruction and development.'



MR ROGER JARDINE
CHAIRMAN OF THE CSIR BOARD

Contributing to NEPAD objectives

The establishment of the New Partnership for Africa's Development (NEPAD) and its ratification as the strategic programme for the African Union in 2002 is of critical importance to the CSIR. NEPAD is an African plan devised on the continent and aimed at promoting accelerated growth and sustainable development, eradicating widespread and severe poverty and halting the marginalisation of Africa in the globalisation process. These objectives are of immediate relevance to the CSIR in its role as one of the largest science and technology organisations in Africa. The CSIR has responded to this challenge by engaging with the necessary stakeholders, actively cooperating with the Committee of Heads of Research and Technology and aligning its own resources to form several initiatives or thrusts that draw on expertise from its business units. This period under review has been utilised to establish capacity, build networks and ensure policy coherence. The emerging platform offers the CSIR a defined role in contributing towards the achievement of the NEPAD objectives and in the African Renaissance.

Creating value for stakeholders and communities

Meeting the expectations of varied stakeholders and a diverse client base often requires a dichotomous approach from the CSIR. A new paradigm in which potential wealth accrues to partners, communities and the CSIR, has been paved through the landmark benefit-sharing agreement between the CSIR and the South African San Council. This follows close on the signing of a Memorandum of Understanding, which took place last year.

The agreement with the San has placed the spotlight on the successful marrying of traditional knowledge with scientific innovation. While this approach clearly has the potential to boost social and economic upliftment, it also allows the CSIR to leverage its particular skills and technology to address modern-day problems.

Safeguards for sustainability

Various technologies and innovations, supported by dedicated staff and implemented in close cooperation with stakeholders and partners, provide the tools by which the CSIR strives to achieve sustainable, visible and tangible benefits for the people of South Africa. Participation in the World Summit on Sustainable Development in Johannesburg in 2002 proved an ideal opportunity to showcase some of its successes under the themes of the summit: People, Planet and Prosperity.

Supporting sustainability requires that the CSIR's own processes and projects subscribe to stringent requirements to ensure environmental, social and financial integrity. To this end, it adheres strictly to statutory and recognised regulatory requirements in all facets of its operations.

Underpinning national strategies

The release of the Integrated Manufacturing Strategy (IMS), the National Research and Development Strategy and the Biotechnology Strategy during the course of 2002 has had a profound impact on the country's strategic planning and allocation of its resources.

The National Research and Development Strategy identified a number of key strategic priorities, including the need to foster the development of human resources in the areas of science, engineering and technology. The CSIR has a significant role in meeting this challenge, and has set about its own interventions to ensure that young scientists and engineers, particularly women and entrants from disadvantaged communities, are trained to replace the current ageing population of researchers and compete with the best in the world.

A growing global role

Offering competitive products and services of a high standard has once again allowed the CSIR to prosper within the global context. Its international business has continued to grow, with notable successes being achieved in contracts with companies in the United States and Europe, with increased work on the African continent.

However, the role of the CSIR has not been limited to successes in the business field only. Its reputation as a world-class knowledge organisation was key to its success in facilitating the establishment of the Global Research Alliance (GRA), with nine member institutions from five continents. The Nerve Centre of the GRA is based at the CSIR.

Our business environment

Operating within the business community and subject to regulatory stipulations has required the CSIR to take due cognisance of current business debates. In this regard, the King II Report has been diligently studied and corporate governance and reporting practices adjusted accordingly.

The CSIR Board, which served the organisation with great wisdom and distinction over many years, reached the end of its term this year. I would like to take this opportunity to thank them all - Prof Anton Eberhard, Ms Joan Joffe, Mr Eugene van As, Dr Dhiro Gihwala, Ms Nobusi Shikwane, Mr Kymus Ginwala, Dr Zavereh Rustomjee and Dr Anne Letsebe - for the invaluable service which they rendered. Their profound insight and understanding of the environment in which the CSIR operates, and their excellent advice and guidance in assisting the CSIR to meet its commitments, while growing and transforming, will always be remembered. I also wish the incoming Board every success in the task ahead.

In conclusion, I would like to thank the President and CEO of the CSIR, Dr Sibusiso Sibisi, who has been at the helm for some 18 months now and who has brought a renewed commitment within the organisation to science and technology excellence. Under his leadership and through the commitment of the Executive Management Team, the CSIR has continued to prosper and diversify its operations to give full expression to the requirements of its mandate.

To the people of the CSIR - its most valuable asset - I express my thanks and appreciation for their continued efforts over the past year.



P R E S I D E N T ' S R E V I E W

As always, the year under review was a demanding one for all of us at the CSIR. However, it is with a feeling of satisfaction that I look back at my first financial year, since it is evident that we have once again manifested a sound financial performance. We have continued to set high standards in the quest for quality and scientific excellence, and have made great strides in delivering technology that will make a difference to the people of South Africa by responding to our economic and social imperatives.

International initiatives

The past year has offered challenging opportunities for interaction with the world's top minds and big names at occasions such as the World Space Congress and the first meeting of the Global Research Alliance (GRA). Global partnerships for broad public good, such as the GRA, have been forged with the objective of applying a global knowledge pool for global good through global funding. The Alliance will facilitate international R&D cooperation to address the problems facing the world, especially in the areas of water, health, energy, transportation and the digital divide.

It is encouraging to note how well regarded the CSIR is on the international front for the excellence of our science and technology solutions. Our international portfolio includes alliances with leading multinational corporations such as the likes of Shell Global Solutions, Siemens, The Boeing Company, Volvo Aerospace Corporation and the Rolls Royce Corporation, amongst others. We have also been highly successful in our involvement in European Commission projects, which will have a significant impact on Africa.

Our intense involvement in the World Summit for Sustainable Development emphasised our leadership role in bringing together various roleplayers, both nationally and internationally, to debate how we should harness the immense potential of science and technology to contribute to sustainable development. Africa and NEPAD were identified for special attention and support by the international community to focus our efforts more effectively to address the development needs of Africa. The Summit afforded the CSIR an opportunity to investigate how our organisation could best

respond to the outcomes and issues identified as important at this platform and to align relevant projects with the collective objectives that were set to eradicate poverty, and promote social and human development in Africa.

National and regional focus

The CSIR works with various complementary institutions such as government, industry and tertiary education institutions (TEIs) to find solutions to national imperatives, and our efforts also impact on regional issues through NEPAD. A strategic framework has been implemented at the CSIR to coordinate our support for NEPAD. The CSIR also acts as manager of the Africa Regional Focal Point of the World Association of Industrial and Technological Research Organisations (WAITRO), which assists in seeking international funds for regional collaboration projects and implementing innovative project ideas.

Closer to home, our alliance with the San people illustrates the potential of indigenous knowledge to contribute to the social and economic well-being of our nation. It showcases the powerful combination of biological diversity, scientific innovation and indigenous knowledge, all of which is abundant in South Africa. The relationship between the CSIR and the San people has become a strong platform, built on trust and respect, with huge future potential. One of the unique aspects of this initiative was that we had to break new ground. In the absence of national policies and legislation on Indigenous Knowledge Systems (IKS), we had to come to an agreement on benefit-sharing amidst a myriad of complexities.

CSIR Strategy 2008

The CSIR's local and international environment is continually changing. This calls for a regular review of CSIR strategy, to adapt it to the emerging challenges and opportunities. CSIR Strategy 2008 was thus developed to ensure that we continue to have relevance and impact by promoting economic growth and quality of life via sustainable development. The strategy review extended its focus to the role of a South African science-based organisation providing technological innovation in 2014. The organisation's vision, mission and values were also re-evaluated and strategic initiatives were determined to position the CSIR appropriately.

Among the external factors impacting on the CSIR are the far-reaching changes in the knowledge economy, the publication

of the National Research and Development Strategy and South Africa's emerging role in the African Union (AU) as currently expressed in NEPAD. Macro-level factors such as international trade issues, lack of infrastructure, lagging education and low skills levels in South Africa also impact on the CSIR and its ability to deliver to customers and stakeholders within its mandate. I firmly believe that in order for the CSIR to live up to the ideals embodied in its strategy, there should be a renewal of focus on people, scientific excellence and impact on society.

Internal development

Internally, the CSIR is making significant progress in streamlining its business systems through the establishment of a robust IT infrastructure to create a culture of organisational excellence and a means to provide our people with a platform to focus on innovation. The CSIR is also in the throes of implementing value-based performance management that will assist in managing value beyond financial performance within our organisation. This initiative includes alignment of our performance objectives with our overall business strategy to develop a financial management system that will make a positive impact on how we do business. A rich basket of measures has also been introduced to improve CSIR performance measurement, such as the DST's Key Performance Indicators (KPIs).

Developing our people

With regard to the development of our people, the CSIR supports organisational initiatives that enhance employee satisfaction and knowledge creation through internal training and learning. While our focus remains 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 remains informed by the shifts in skills requirements and goals for demographic representivity.

State of Science and Technology

Maintaining and growing the intellectual resource represented by the CSIR continues to be a high priority. After its experimental introduction in 2002, a formal *State of Science and Technology Report* has become part of the Annual Report process. It reveals that the CSIR continues to have one of the largest groups of skilled researchers in Africa. It profiles the CSIR's core professional research resources and indexes the output of intellectual activity.



DR SIBUSISO SIBISI
CSIR PRESIDENT AND CEO

Triple bottom line

We have continuously monitored our performance in terms of economic viability, social equity and environmental stability. Our financial statements are prepared and audited in accordance with the South African Statements of Generally Accepted Accounting Practice. 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 internationally accepted standards and practices.

Conclusion

There is an ongoing focus on business and operational excellence as well as continued growth and development in accordance with the mandate set for us. My thanks go to the people of the CSIR for the level of excellence delivered within the organisation in pursuit of our goals. We will continue to sustain growth and innovation throughout the year through the contribution of our dedicated community of motivated and competent people. I am certain that the new year will bring many new challenges for all of us, which we will meet head-on with renewed vigour.

A handwritten signature in black ink, which appears to read 'Sibusiso Sibisi'.

OUR ACTIVITIES IN THE SPOTLIGHT

PROJECT HIGHLIGHTS



BIOTECHNOLOGY

The CSIR's biotechnology thrust is positioned to provide world-class technology solutions and opportunities to the agrofood, fine chemicals, pharmaceuticals and health care markets. The ultimate vision is to create economic and social benefits for South Africa and Africa through innovation in life sciences.

Production of menthol

→ The CSIR made a breakthrough in the development and scale-up of a process for the production of the aroma compound l-menthol, used in numerous products ranging from toothpastes to cough drops and chocolates. Early commercial production of menthol provided overwhelmingly positive results.

Agreement on anti-obesity drug

→ A landmark benefit-sharing agreement was signed in March 2003 between the CSIR and the South Africa San Council. The agreement relates to the benefits that could arise from the commercial success of a CSIR-patented pharmaceutical formulation for obesity control, which followed research and development of new technology related to the Hoodia plant, dubbed P57. Clinical trials relating to the product continue internationally.

World-class genomics research

→ The African Centre for Gene Technologies, established by the Southern Education and Research Alliance, has made significant advances in equipping itself for a role in gene and genome analysis and their applications. A proteomics facility, a structural modelling facility, and

Dr Sibusiso Sibisi (CSIR President and CEO) and Mr Petrus Vaalbooi (Chairperson of the SA San Council), with Dr Ben Ngubane (Minister of Arts, Culture, Science and Technology) as witness, met in the Kalahari to sign a benefit-sharing agreement whereby the San will share in the potential financial success of P57.

a DNA microarray facility have been established under its auspices.

Repelling mosquitoes

→ A novel natural method for repelling mosquitoes, including species that carry malaria, was successfully developed and patented by the CSIR, utilising the active ingredients of an indigenous plant, which are not found in any of the current commercial repellents on the market. This innovation resulted from the ongoing collaboration between the CSIR and traditional healers, initiated in 1998. The SABS' olfactometer tests show that the CSIR-developed product is significantly more efficient at repelling mosquitoes than current products on the market.

ENVIRONMENT

The environmental competencies in the CSIR are integrated effectively with economic and social considerations to offer innovative solutions for complex issues of sustainable development to provide ongoing benefits for future generations.

Coega Aluminium Smelter EIA

→ An Environmental Impact Assessment (EIA) on a R20 billion aluminium smelter proposed for the Coega Industrial Development Zone by French-based company, Aluminium Pechiney, recommends effective implementation of best practicable environmental options and actions to minimise negative impacts and enhance benefits. Management recommendations have been incorporated into a comprehensive Environmental Management Plan.

Safe drinking water

→ A Household Water Treatment Plant treats water obtained from rivers, streams and springs in individual households. By doubling up as a safe and convenient water storage and dispensing system inside a rural house, the plant prevents sanitation problems associated with storing water in less suitable containers. An Eastern Cape rotational moulding plant established to manufacture the treatment plant has resulted in job creation for unemployed, unskilled workers.

Polyethylene recycling

→ The recently completed Innovation Fund project (in which the CSIR was a consortium member) on *Plastic Waste Utilisation in South Africa* has resulted in an increase in the overall South African polyethylene (PET) recycling rate (from 4% to 10%) and a price increase of over 200% for collected PET bottles. This translates into an annual income of approximately R12 million for collectors, indicating the project's success in wealth creation.

Pyrotechnic technology

→ In collaboration with Metlite Gauteng (Pty) Ltd, the CSIR has patented a new pyrotechnic technology, which consumes previously contentious waste materials to produce useful products at a greatly reduced cost, and minimise the environmental impact of landfill. It represents the first cradle-to-grave technology dealing with the full spectrum of these industrial waste materials.

Integrated waste management

→ The CSIR has developed a manual to assist organisations with the planning and measuring stages of a waste man-

agement programme. The manual contains tips and hands-on advice on how to investigate and characterise waste. The methodology described is applicable to a number of business sectors, but is specifically aimed at offices, restaurants and office services.

INFORMATION AND COMMUNICATIONS TECHNOLOGY

The CSIR's activities in the field of Information and Communications Technology (ICT) are centred around the need to impact on the competitiveness of the industry, together with the drive to maximise the contribution of ICT to the quality of life of our people. The challenge is to ensure that the benefits of ICT are not confined to the privileged, but are spread throughout every sector of society.

Satellite imagery at work in the region

→ The value of the CSIR's applied satellite imagery was evident from a project in which South Africa's electricity provider, Eskom, was provided with information on fast-growing areas to support Eskom in its drive to supply electricity to all the people of South Africa. In addition to the daily use of satellite imagery in, for example, agricultural applications, earth observation satellites also captured the ferocity of a cyclone in the Mozambique channel; the extent of an oil spill alongside the coast of St Lucia, a World Heritage Site; and a severe occurrence of a toxic red algal bloom off the Cape west coast.

Eyes over African skies

→ The CSIR Satellite Applications Centre strengthened its reputation in the international space industry through the completion of a new Ka-band antenna for the tracking, commanding and monitoring of a new constellation of satellites - dubbed Spaceway - under contract to The Boeing Company. The CSIR also established a monitoring ground station to be used in the European EGNOS global satellite navigation system at Hartebeesthoek and provided satellite telecommunications solutions to various African countries, including South Africa, Rwanda and Botswana.

Local simulator technology

→ In collaboration with Electronic Warfare Simulation Technologies, the CSIR has developed and exported the Enigma II Electronic Countermeasure and Radar Target Simulator, which represents a major milestone in the development of Digital Radio Frequency Memory (DRFM) based simulator technology. This system has the capability to operate to world-class specifications in a diverse set of simulation scenarios.

Promoting computer literacy

→ The Digital Doorway project, a joint undertaking by the DST and the CSIR in Cwili Township in Kei Mouth, Eastern Cape, is investigating an alternative concept for promoting wide-scale computer literacy. The first Digital Doorway, a free-standing computer kiosk, available 24 hours a day, was opened by the Minister of Arts, Culture, Science and Technology, Dr Ben Ngubane, and the Mayor of Kei Mouth, Mrs Kema, in December 2002.

TEIs linked world-wide

→ The i-Studio (Internet-Studio) initiative is putting South African TEIs at the forefront of international activities, thanks to the CSIR's role in setting up and facilitating this interaction. Link-ups allow lively debates on various issues, facilitating possible international collaboration amongst students from different continents.

Affordable simulation capability

→ The CSIR-devised Linux-based parallel cluster system, with sixteen stand-alone PCs and two high-power workstations, now offers an affordable alternative to the expensive installations associated with supercomputers. The system is modular and uses cheaper hardware, thus allowing easy and relatively cheap upgrades, redundancy and maintenance. Benchmarks have shown that significant increases in capacity as well as processing speed (approximately 24 times) have been achieved when compared with older stand-alone hardware.

Open source activities

→ Long-term open source research and development activities include the following: affordable custom ICT solutions in the public sector, eg a workflow system developed for the National Department of Health, and a data management system supporting the National Research and Development Audit of the DST; development of commercial ICT systems using open source components; management of collaborative open source projects with internal and external contributors and stakeholders; definition and execution of innovative projects within the e-government space, closely involving the Centre for Public Service Innovation (CPSI); and public sector networking, advocacy and thought leadership, in collaboration with CPSI, SITA and DST.

INFRASTRUCTURE

The CSIR undertakes research and technological innovation in support of infrastructure development to contribute toward a well-functioning built environment and supporting physical infrastructure. Our involvement in infrastructure development focuses on improving the competitive performance of the country's industrial and commercial base, and supporting the welfare and quality of life of the people.

Decision support system to facilitate integrated planning

→ The CSIR, in cooperation with the Gauteng Provincial Government, has developed eLand, a GIS-based, interactive, decision-support system aimed at assisting decision-makers in assessing the availability of land and evaluating the suitability of vacant land for low-income housing development in Gauteng. The system also assists planners and decision-makers by integrating information from diverse government departments for consideration in spatial planning.

Sustainability of human settlements in South Africa

→ Commissioned by the National Department of Housing, the CSIR has completed a report on the sustainability of human settlements in South Africa. Based on an analysis of seven different case study areas, the report highlights a number of tensions, threats and successes pertaining to the sustainability of human settlements in South Africa.

Turning schools into centres for community development

→ An innovative project initiated by the National Department of Education, with funding from the Poverty Alleviation Fund, and managed by the CSIR, investigates how school buildings can be developed to support cost-effective, high-quality school education as well as community development through training and employment creation. Entitled Thuba Makote ('breaking soil clods to prepare for planting'), pilot projects have been initiated in each of South Africa's nine provinces, which actively involve a range of stakeholders, including provincial departments, local communities and businesses.

Environmentally friendly road maintenance

→ A partnership between the CSIR, government, TEIs and industry is making an important contribution to the sustainable and cost-effective rehabilitation of South Africa's roads. Interim guidelines have subsequently been developed for the use of foamed bitumen-treated materials, a cheaper and more environmentally friendly option.

MANUFACTURING

The CSIR strives to apply advanced manufacturing technologies to ensure competitive advantage in global markets as catalysts for growth in our economy. We have aligned our activities to the National Research and Development Strategy, which recognises advanced manufacturing as an innovative mission central to accelerating economic growth, sustainable wealth creation and the improvement of quality of life.

AMTS strategy report

→ The National Advisory Council for Innovation accepted the strategy report prepared by the CSIR for a National Advanced Manufacturing and Logistics Technology Strategy (AMTS). Developed in consultation with stakeholders and roleplayers from government, industry, labour and academia, the strategy identifies key issues facing sectors, and the technology focus areas to be addressed to support the South African manufacturing industry in achieving global competitiveness.

Cleaner production techniques

→ Hosted by the CSIR's Process Technology Centre, the South African National Cleaner Production Centre (NCPC) is the outcome of a UNIDO/dti agreement signed during the World Summit on Sustainable Development. Switzerland and Austria will also supply funding for the NCPC, which will enhance the competitiveness and productive capacity of the national industry through adoption of cleaner production techniques, and the transfer and development of environmentally acceptable technologies.

Tooling industry support initiative

→ In line with government's Integrated Manufacturing Strategy, the South African Tooling Industry Support Initiative is a concerted effort to regulate competencies within and support the development of the industry to compete in international markets. Supported by the AIDC (Pty) Ltd and the DST, it has an initial focus on the automotive sector, and is steered by a CSIR-led forum of stakeholders and roleplayers.

Design unit supports poverty alleviation

→ A Cultural/Craft Industries Design Unit leading cultural industry design nationally and internationally through quality skill and excellence, was formed in line with a directive from government to create a 'uniquely South African' style. It draws on expertise and skills from three CSIR Centres: the Centre for Fibres, Textiles and Clothing, the National Product Development Centre and the Enterprise Development Centre. The Design Unit operates from Port Elizabeth and Pretoria to support implementation of a number of poverty alleviation projects funded by the DST throughout South Africa.

The CSIR Cultural/Craft Industries Design Unit offers a unique design service using traditional crafts in different ways.



Representatives from the CSIR, DST and WAITRO met in Pretoria to endorse the WAITRO Africa Regional Focal Point work plan at executive level to support the implementation of NEPAD activities.



PEACE SUPPORT

CSIR Defence Technology has embarked on a Peace Support Initiative (PSI) in a quest to leverage its competencies, know-how and technologies in support of national peace missions as carried out by the South African National Defence Force and other continental efforts as spearheaded by NEPAD. Existing technologies, such as modelling and simulation, are used in the development of an early warning mechanism. A pyrotechnics-based technology (thermite), used in the destruction of illegal guns and anti-personnel landmines, provides an opportunity to impact immediately on the Peace Support operations.

Regional humanitarian demining

→ CSIR Defence Technology is set to offer platforms and an integration capability to address regional humanitarian initiatives, such as the eradication of anti-personnel mines, an aspect that is vital for peace support in NEPAD. This initiative will support land reclamation for resettling and social integration in a post-conflict mine-free scenario.



INTERNATIONAL INITIATIVES

The year under review has once again demonstrated the importance of international business development to CSIR's growth strategy. Growth in income from this sector has shown a steady increase from a sound base during the previous year. Foreign sales posted reached R107,7 million, which point to an increase of 21.1%.

While international activities remain vital for our growth, at the same time they have proven invaluable in the context of South Africa's quest for innovation and the need for the country to evolve into a world-class technology supplier. The breadth and the range of our activities in this domain confirm that our knowledge and outputs are held in high esteem. Highlights include:

→ The South African/Finnish Bilateral Innovation Policy Seminar, organised on behalf of the DST by the CSIR in South Africa in May 2002, created the opportunity for shared learning about the Finnish system of innovation. Outcomes of this event directly informed the National Research and Development Strategy.

Representatives from nine leading science and technology institutions from around the world met in New Delhi, India to establish the GRA.

- We have continued to build and enhance our relationships with large Multinational Corporations (MNCs). A significant development over the past year has been Boeing's R45 million investment in the first Ka-band Telemetry, Tracking and Command facility worldwide, which will be used to track, command and monitor the Spaceway satellites.

- Dr Claus Weyrich, Senior Vice-President and Member of the Siemens Managing Board, who visited the CSIR in March 2003, was the guest speaker on the topic of innovation at the CSIR's President Lecture Series, an event well attended by local academia and industry representatives.

- Close links with the Volvo Aerospace Corporation have resulted in joint projects with CSIR business units.

- Globalisation of R&D has shaped and directed the CSIR's involvement in the international arena. A significant event in this context was the establishment of the Global Research Alliance (GRA) in January 2003 with the objective of applying a global knowledge pool for global good through global funding. The Alliance will facilitate international R&D cooperation to address the problems facing the world, especially in the areas of water, health, energy, transportation and the digital divide. Member institutions of the GRA are CSIR India, the Danish Technological Institute (DTI), the Fraunhofer Gesellschaft in Germany, SIRIM Berhad in Malaysia, TNO in The Netherlands, VTT in Finland, CSIRO in Australia, Battelle Memorial Institute in the USA and the CSIR in South Africa. A GRA-organised Technology Fusion Workshop on Water at the end of March 2003 marked the first milestone in the GRA's short history, drawing representatives from six member organisations to the CSIRO-hosted event in Australia.

- A parallel development has been the establishment of the Global Mining Research Alliance (GMRA) in February 2003, an initiative which CSIR Mining Technology has been actively promoting over the past three years. By bringing together four of the world's premier mining-related research and development organisations (CANMET-MMSL of Canada; CSIR Mining Technology of South Africa; CSIRO Exploration and Mining of Australia and NIOSH of the USA), the GMRA represents the pooling of the world's best research expertise and laboratories for the benefit of the mining and minerals industry internationally.

AFRICAN HIGHLIGHTS

The CSIR's strategy to position itself as a provider of key technologies to the Southern African Development Community (SADC) and NEPAD continues to gain momentum.

WAITRO Africa work plan endorsed at executive level

The World Association of Industrial and Technological Research Organisations (WAITRO), Africa Regional Focal Point (RFP) presented their 2003/2004 Africa work plan in Pretoria for approval in principle at WAITRO/CSIR/DST executive level. The plan seeks to build and manage capacity in Research and Technology Organisations (RTOs) throughout Africa, improve connectivity in the continent and instill a culture of quality in African organisations. Engagement in NEPAD would be an overarching objective of the work plan, whereby RTOs' competencies are strengthened to support and contribute to the implementation of NEPAD activities. A four-year contract has been signed with the DST to implement the Africa RFP strategic plan. The Africa RFP, made up of 48 research and technology organisations across the continent, is managed by CSIR Africa Business Development with the financial support of the DST.

CSIR contributes to WAITRO incubator workshop in Mauritius

CSIR representatives attended a workshop in February 2003 on Technology-Based Incubators for SADC countries held in Mauritius, under the auspices of the WAITRO RFP. The outcome of the workshop proved WAITRO's effectiveness as a network platform that affords African scientists and technology managers an opportunity to share learning and implement best practices amongst themselves and international partners.

African cooperation framework with PriceWaterhouseCoopers

The CSIR and PricewaterhouseCoopers established an African Cooperation Framework in July 2002 to forge cooperation in areas of mutual interest. The agreement covers technical assistance for the development of projects in line with national and regional priorities as well as those of NEPAD.

CSIR and SABS to develop common vision for technology development

The CSIR and the SABS signed a Memorandum of Understanding, which aims at aligning and enhancing interaction

between the two organisations in support of national goals. Both organisations aim to support the DST and the dti in the development and implementation of the National Research and Development Strategy and Integrated Manufacturing Strategy. The two institutions aim to work together to raise the awareness in industry of the role of technological innovation and knowledge management in improving the competitiveness of the economy. Both organisations will support each other in the expansion of their international alliances and partnerships. This will include developing centres of excellence attached to academic research institutions and industrial organisations. Both organisations will also contribute to the development of the SADC region by identifying potential for regional cooperation through NEPAD in the fields of science and technology.

CSIR support to NEPAD

The CSIR is providing S&T leadership and support to NEPAD as a key knowledge institution in Africa, and interacting on a continental basis with relevant players utilising the WAITRO network as an Africa-wide footprint. The organisation also contributes to NEPAD's market access and diversification leg by providing inputs on metrology, manufacturing, industrialisation and SMMEs. With Africa's recovery heavily resting on value addition and the beneficiation of Africa's natural resources, the CSIR is assisting companies to develop products and services for export, and contributing to the development of the infrastructural base required to make export activities a reality.

The CSIR is also interacting with key players responsible for the leadership and management of the NEPAD ICT process through the e-Africa commission based at the CSIR. Furthermore, competencies will be utilised to contribute to NEPAD's peace, security and reconstruction processes.

NEPAD recognises that the existing large gap in infrastructure constitutes a serious handicap to economic growth, trade, competitiveness and poverty reduction. The CSIR responded to this challenge by aligning resources within its infrastructure core competence to form the CSIR Infrastructure Thrust. The Thrust is drawn from the following CSIR business units: Building and Construction Technology; Roads and Transportation Technology; Water, Environment and Forestry Technology; and Information and Communications Technology. The core of the Thrust's research (towards an Infrastructure Development Agenda) is the establishment of a macro infrastructure development framework methodology (MIDF), to assess where infrastructure development should take place in the context of the broader socio-economic objectives of NEPAD.

NATIONAL CONTRIBUTION

Making an impact on sustainable development and national priorities

The CSIR is involved in addressing national imperatives, ie HIV/AIDS, crime prevention, job creation, rural development, regional integration, NHRD and urban renewal. Job creation and rural development form part of CSIR's Technology for Development (TfD) drive. In order to contribute to these priorities in a sustainable manner, the CSIR supports a collaborative approach through partnerships with all levels of government, other science councils, development agencies, NGOs and community structures for economic empowerment of previously marginalised groups and communities.

Government collaboration

Increased CSIR contribution to the government sector is reflected in the 30.4% five-year compound growth that has been achieved. In the last financial year, growth in sales increased by 7.6% to R175,4 million, mainly due to sales secured from the DST and the dti – making up over 60% of the total.

The CSIR has a dedicated Government Unit which works through multi-disciplinary task teams to position the CSIR with key stakeholders in all three spheres of government to respond as a relevant roleplayer. Current initiatives include:

Education

High-level discussions have taken place between the CSIR and the Department of Education, which have led to strategic meetings and workshops to identify and pursue further areas of cooperation.

Energy

A thrust initiative established in 2001, representing all CSIR business units, seeks to position the CSIR as a key player in the energy arena in South Africa and beyond to contribute effectively in the area. High-level discussions are taking place with relevant stakeholders, including ESKOM, DME, DST and Sasol, to establish a team approach towards energy research and development needs for Africa.

Tourism

The CSIR is currently re-establishing a CSIR tourism task team to formalise a response to the needs of the tourism sector. Discussions have been held with tourism stakeholders, including DEAT, SATOUR, the SA Tourism Council and regional tourism bodies.

Dr Vijay Bhatkar, a leading IT specialist from India, met with Mr Sello Matsabu (Director CSIR icomtek) and Dr Sibusiso Sibisi (CSIR President) at a CSIR President's lecture.



Inland provincial business development

The CSIR Government Unit focuses on building strategic relationships with key officials in Mpumalanga, Free State, North-West and Limpopo provincial governments. Together with their premiers, MECs and DGs, the CSIR seeks to identify how it can contribute to achieving government's goals and objectives.

Collaboration with the DST

Involvement in the DST poverty alleviation projects focuses on the transfer of available technologies to communities to enhance the use of local resources and indigenous knowledge, and to stimulate economic activity.

CSIR and the dti to develop common vision for technology development

The CSIR and the dti signed a bilateral agreement last year to align and enhance their interaction in support of national goals. The agreement was signed as part of a broader cooperation framework between the two organisations. In terms of the agreement, the CSIR and the dti will work together to develop a common vision for technology development. This entails contributing to the competitiveness of the economy; supporting the expansion of its international alliances; providing technological solutions to SMMEs; supporting rural development initiatives and playing a significant role in SADC by providing technological solutions through partnership arrangements.

National projects

Several thematic workshops were organised by the CSIR during the course of the year:

- A Workshop on Platinum-based Industries of the Future at the end of September 2002 in Pretoria identified new industrial applications and collaborative opportunities. The workshop was well attended by a cross-section of the platinum interest group as well as several groups of German and Swedish Platinum Group Metals specialists.
- In October 2002, an Indo-South African Workshop on Advanced Computing, held in Pretoria, was attended by a small delegation from India. Orchestrated by the CSIR on behalf of DST, the workshop attracted a large number of local computer scientists and IT specialists.
- In February 2003 the CSIR hosted a workshop in George, Western Cape, which focused on the establishment of an Advanced Institute for ICT (AIICT), a national initiative and high government priority. CSIR partner organisations from India, Finland and Germany attended the event.



ACHIEVEMENTS OF OUR PEOPLE

- Ms Chrisna du Plessis was awarded the prestigious JD Roberts Award, instituted by Murray and Roberts to promote competitiveness in seeking environmentally sustainable solutions to human dilemmas and to encourage scientific research into technology that enhances the quality of life of all South Africans.
- Mr Hartmut Ilgner received the *Best Technical Paper Award* at the 8th Coal Science and Technology Conference, Coal Indaba, Fossil Fuel Foundation for his paper entitled: *Cost-effective utilisation of fine and coarse ash to maximise underground coal extraction and protect the environment.*
- Excellence in GIS mapping secured an international award for Mr Peter Schmitz. The Fourth Annual Crime Mapping Competition identified him as the winner in the category, *Best Analytic Map Display*, for his mapping of crime and court statistics at magisterial level in South Africa.
- Dr Lindsay Linzer is the winner of the prestigious Rocha medal for her thesis dealing with the application of a relative moment tensor inversion technique to seismicity induced by mining. This award, which is made annually for the best PhD written in the area of rock engineering throughout the world, gives CSIR Mining Technology an unprecedented four Rocha medals, three of which have been awarded in the past 10 years.
- The South African Institute of Mining and Metallurgy (SAIMM) awarded a gold medal to Messrs Arno Daehnke and Mike Roberts, and Ms Melanie van Zyl for a paper on *Review and application of stope support design criteria*. Silver medals were handed to Arno Daehnke for his transaction paper on *Addressing the variability of elongate support performance* and to CSIR Mining Technology for the suite of transaction papers published in a special edition of the SAIMM journal. The seven

papers were based on different aspects of a simulated rock-burst experiment conducted by the CSIR on a deep level mine.

- Director of CSIR Information and Communications Technology, Mr Sello Matsabu, was nominated by the Minister of Communications, Dr Ivy Matsepe-Casaburri, to serve on the Independent Selection Panel that appoints the Board for South Africa's Domain Name Authority, and he will be chairing the panel.
- A joint project by the CSIR and the eThekweni Municipality (formerly Durban Unicity), was awarded the prestigious 2002 National Planning Award of the South African Planning Institute (SAPI) in the category, Best Regional Planning / Policy Planning Project.
- Mr Sunshine Blouw, Acting Manager of the dti-funded National Fibre Centre based at the CSIR's Port Elizabeth site, was the recipient of the Current Achiever Award in the Science and Technology category of the Metropolitan Eastern Cape Awards.
- Dr Bruce Simpson of the CSIR National Metrology Laboratory (NML) has been appointed the chairman of Section II of the Consultative Committee for Ionising Radiation, with participation in the full CCIR executive meetings.
- The NML was voted in as a member of the International Committee for Radionuclide Metrology (ICRM); Dr Simpson of the NML serves as a Vice-President on the Executive Board of the ICRM.
- As finalists in the 2002 World Technology Awards, Dr Wim Richter and the late Dr Michael Thomas of the CSIR's National Product Development Centre received automatic admission to the World Technology Network and full access to its resources.



South Africa's new National Orders.



- Public acknowledgement by President Mbeki was a fitting accolade for the talented industrial designer Mr Gold Mametja, of the CSIR's National Product Development Centre, when the President unveiled the new National Orders at the 2002 Freedom Day rally in Bloemfontein. Mr Mametja was selected among dozens of designers when the new National Orders were commissioned, following the extensive review process of the old system of orders.
- Ms Jaci Barnett of CSIR Food, Biological and Chemical Technologies is the first female executive to receive the Liberty/Femina/Gordon Institute of Business Science MBA Bursary Award, valued at R100,000.00 awarded for the first time in November 2002.

THE STATE OF SCIENCE AND TECHNOLOGY IN THE CSIR

Purpose

The State of Science and Technology (SoST) report evaluates the CSIR's intellectual assets and their performance. Since very few research and development organisations undertake a comparable analysis, the main utility of the SoST report lies in comparing the CSIR with itself, over time. This is the second year for which a formal, quantitative analysis of the research capacity of the CSIR has been performed, and the first time that it will accompany the Annual Report. The time-trend information before year 2001 needs to be treated with caution since the consistency of historical data cannot be guaranteed. External benchmarks¹, selected for the ease with which they can be obtained from other organisations, are included.

Science and Technology Human Resources

Purpose: to show if the qualification level in the CSIR is

adequate, rising or falling. The data are for 31 March 2003, as reflected in the CSIR Human Resources Database. The total number of employees is slightly down from 2561 in year 2002, but has been relatively stable during the past decade. Note that the numbers of young, mid-career and late-career MSc and PhD researchers are almost equal, suggesting that there are sufficient high-qualification individuals to replace those who will retire in the next decade.

Benchmarks - Percentage PhDs: The range among benchmark organisations was 13% to 54%, with a modal value of 27%. The CSIR, at 7.3% (up from 7.2% in March 2002 and 6.8% in March 2000), is far below the benchmark range. Among the benchmark organisations there is a positive association between the percentage PhD staff and the percentage core funding. The CSIR percentage core funding is near the bottom end of the benchmark organisations, but even correcting for this factor, the percentage PhD staff in the CSIR is low.

	QUALIFICATION LEVELS					TOTALS	%
	0-2 year Diplomas, Matriculation or less	3 year BSc, BA, BTech	4 year BEng, BSc Hons	5-6 year Masters degree	> 6 year Doctorate		
<30 Years	198	143	154	63	4	562	22.9
30-39 Years	243	129	154	177	49	752	30.6
40-49 Years	286	82	65	108	63	604	24.6
>49 Years	280	74	42	80	64	540	22.0
All ages	1,007	428	415	428	180	2,458	
% of total employees	41.0	17.4	16.9	17.4	7.3		

¹ The selected benchmarks were: Bio/Chemtek: TNO Nutrition, CSIRO Health and Nutrition; Boutek: CSIRO Building and Construction, Building Res NZ, Canada National Res Council Inst for Construction, VTT Building and Transport, NIST Building and Fire Res; Environmentek: Centre for Ecology and Hydrology, UK; Miningtek: NIOSH Pittsburg Lab, Canada Nat Res Council Mineral Processing and Mining. Investment in equipment was benchmarked against CSIRO (Australia), NERC (UK) and TNO (Netherlands).

The profile of the research team

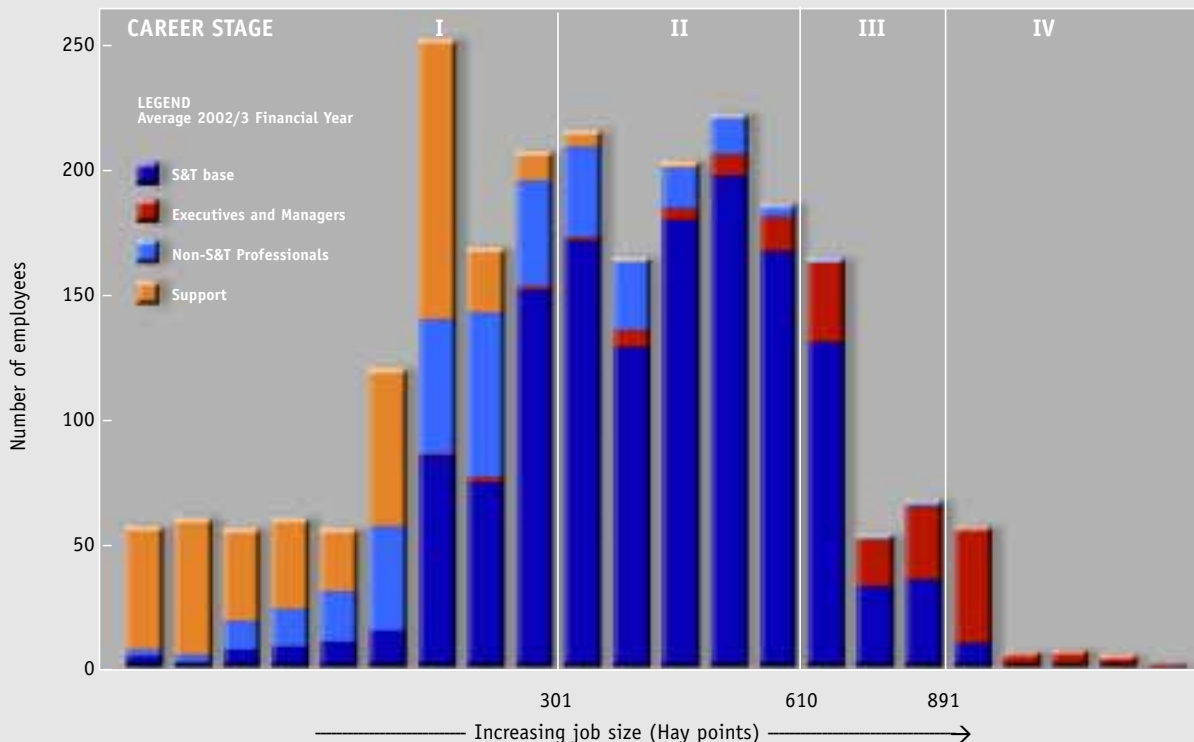
Purpose: This analysis shows the distribution of employees in the CSIR in terms of various functional job categories and job size. The job size is based on employee scores in the widely applied and well-calibrated Hay system, which forms the basis of remuneration in the CSIR. The Hay bands have been further categorized in terms of the CSIR four-stage career model². The data used are the averages for the financial year 2003.

The S&T base consists of the core professional research resource of the CSIR. It excludes people currently predominantly working as managers although trained in research. The asymmetry of the S&T base in terms of job size is notable. A degree of bias towards larger numbers of early career stage researchers is expected, but the CSIR appears to be excessively skewed. The originators of the four-stage career model suggest that a research organisation should have about 13% Stage I (CSIR 27%), 46% Stage II (58%), 29% Stage III (14%) and 11% Stage IV (1%). Shortage of career stage III and IV (supervisors and leaders) reduces the capacity to grow Stage I (interns) into Stage II (independent professionals).

Indicators:

- **Knowledge Base.** This is an indicator of the value of the CSIR knowledge base (intellectual capital), taking into account both the numbers of technical staff and their job sizes. It can be thought of as the equivalent number of top-level researchers in the CSIR. The average for 2003 was 614. The values for the years 2000, 2001 and 2002 were 614, 606 and 607 respectively.
- **Percentage researchers.** The percentage researchers of total staff in the CSIR is 59.4%, unchanged since the previous year. The range among similar organisations is 25% to 91%, with an average of 68%.
- **Management Ratio.** This is a measure of the degree to which high-skill employees are engaged in management rather than research. It is strongly related to the expenditure on executive human resources in relation to the expenditure on research human resources; higher numbers indicate more expenditure on management. In March 2003 the ratio was 0.246. In the years 2000, 2001 and 2002 it was 0.264, 0.271 and 0.263 respectively.

SCIENCE AND TECHNOLOGY PROFILE



² The CSIR follows the scheme proposed by G.W. Dalton & P.H. Thomson (1986) Novations. Stage I consists of researchers who are learning to do the job, and work under supervision. Stage II are competent individual contributors within a field. Stage III are supervisors, mentors and integrators across fields. Stage IV provides direction to the organization and represents it.

Transformation

Purpose: To measure progress towards making the CSIR representative of gender and race diversity, across all employment levels. Data are as at 31 March 2003 (see note d).

		MANAGERS AND EXECUTIVE	S & T BASE CAREER STAGE ^c				NON-S&T PROFESSIONAL	SUPPORT STAFF	TOTALS ^d
			I	II	III	IV			
Female	Black ^a	22	79	63	4	57	107	332	
	White ^b	34	52	201	21	133	127	568	
Male	Black	33	155	136	18	113	175	630	
	White	94	64	430	157	51	8	812	
Totals		183	350	830	200	8	354	417	2,342

Notes:

- 'Black' includes any person who classifies themselves as such, including people whose distant ancestors are from Africa or Asia. It is primarily meant to reflect people who were disadvantaged under the apartheid system.
- 'White' is anyone who classifies themselves as such. It typically includes people whose distant ancestors were from Europe, either directly or indirectly. In principle it includes any person not discriminated against under the apartheid system.
- The CSIR applies a four-stage career model, particularly to its research staff, as described in footnote 2.
- The totals differ slightly from those in the breakdown of employees by age and qualification given on page 15 because the following groups are excluded in this table: CSIR undergraduate bursars, staff on special study leave for more than 6 months; full-time postgraduate students; students undergoing in-service training and interns.

Relative to their proportions in the general population, blacks and females are under-represented in the CSIR, especially in managerial positions and in the later career stages of the research staff. The fraction of female staff members overall increased from 38.2% to 38.5%, and black employees from 39.1% to 41.1% between 2002 and 2003.

Benchmark: The goal is positive change in all under-represented groups in the non S&T professional, S&T base and managerial categories. The fraction of black staff in these categories increased from 33.6% to 35.3% between 2002 and 2003, and the fraction of females decreased marginally from 34.8% to 34.6%. Black female professional staff increased from 10.5% to 11.7%, and black male professional staff from 23.0% to 23.6%.



Technical output theme

Purpose: To index the volume of output of intellectual activity at the CSIR. The data are for outputs with the publication or registration year 2002.

NUMBER OF OUTPUTS	RESEARCH PAPERS ¹	CSIR REPORTS ²	CONFERENCE ³	PATENTS ⁴	DEMONSTRATIONS ⁵
Bio/Chemtek	8	446	0	14	0
Boutek	8	44	12	0	0
Defencetek	46	395	0	17	0
Environmentek	33	250	35	1	0
icomtek	0	52	10	0	0
Miningtek	93	254	36	8	25
Manufacturing and Materials Technology	1	218	0	3	0
Transportek	0	127	0	1	0
Corporate	2	21	4	0	0
All CSIR	191	1,807	97	44	25

Notes:

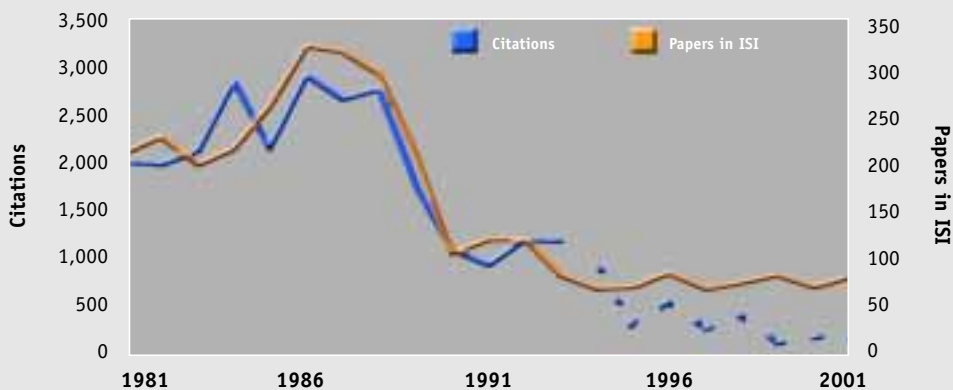
1. All peer-reviewed externally published communications, ie journal articles, proceedings, chapters in books.
2. Internal and client reports, in any medium, provided they are lodged in the library and issued a CSIR number. Most of these are peer-reviewed, and the majority are available in the public domain.
3. Only if a presentation was made, as documented in a published proceeding or abstract.
4. Includes registered designs or any other formal, legally recognised intellectual property, including provisional applications, patents pending and PCT applications in the 2002 calendar year.
5. Including pilot plants, officially demonstrated working prototypes, etc.

Peer-reviewed publications and their impact

ISI, an international organisation devoted to tracking publications, conducted a search of its databases for all publications with at least one author listed as from the CSIR, for the period 1981 to 2001. This database includes most international journals in the natural sciences. The number of publications per year is graphed below. It shows a peak in the early 1980s, followed by a decline to a stable level around 80 publications per year, about one third of the peak level. This decline probably has several causes, including a shift from over 90% core funding to around 35% and an approximate halving of the staff over this period. A similar, but less pronounced, trend is visible in the publication output of South Africa as a whole.

The ISI database also records the number of times given papers have been cited in the literature. This is a widely used index of the impact that research has had within the scientific community. The trend in citations over the same period is shown. CSIR papers have a modal number of citations of 9.8. This mode has been stable over the period 1981 to 1995 (see note to graph). This is high by international standards, suggesting that when the CSIR publishes, the papers have above-average impact.

Trends: There is a downward trend in external publications recorded in the CSIR's own databases, from 418 in 1996, to 191 in 2002. Over the 1990s, published external output as detected by the ISI has been relatively steady at about 80



Note:

The apparent decline in the citations since 1995 (dotted line) reflects the time delay between publication of work and its citation, not a decrease in impact.

per year. The ISI database is thought to detect about half to two thirds of the CSIR's actual external peer-reviewed output, since it includes few South African journals and seldom records chapters in books.

Benchmark: The range among benchmark organizations was 0 to 4 peer-reviewed external publications per researcher per year, with a mean of 1.4 and a mode of 1. The CSIR value is substantially below the mode. A conservative estimate of peer-reviewed, externally published papers and articles per researcher for the CSIR in 2002 is 0.05 using ISI-recorded output divided by the total research staff. A liberal estimate is 0.14, using the CSIR's own output data. This is still well below the benchmark. When the total published output by the CSIR (including CSIR reports and unreviewed or unpublished conference papers) is expressed per research staff member, the annual output is 1.5 outputs per research staff member for the year 2002, well within the benchmark range, but slightly down on the 1.56 recorded in the previous year. The implication is that the publication output productivity in the CSIR is comparable to similar organisations, but more focused on material not in the open literature.

Patents

During the calendar year 2002, the CSIR registered 0.023 patents per research staff member. This is above the benchmark of 0.017 patents per researcher per year (range 0 to 0.07) among comparable organisations.

Investment in scientific infrastructure

Purpose: To indicate whether the investment in research equipment is sufficient to allow CSIR researchers to remain competitive.

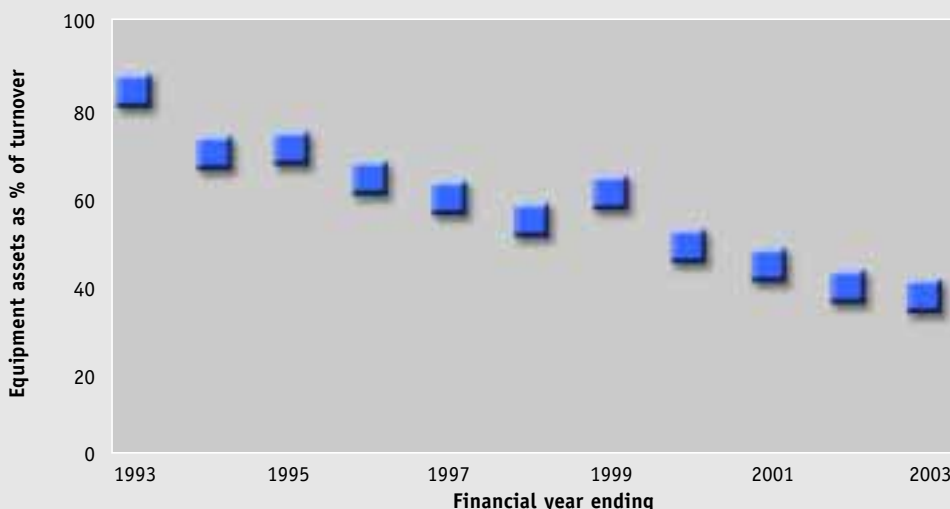
Indicators: Two indicators are used: the value of the equipment assets, expressed as a percentage of the organisation's

financial turnover for the same year; and the investment in equipment during that financial year. 'Equipment' excludes vehicles, building, land and low-value, short-lived items. The data for calculating the indicators are taken from the CSIR Annual Financial Statements. Since these conform to widely applied international accounting practices, it is usually possible to extract benchmark information from the annual reports of organisations with a similar size and mission.

Trends: The CSIR has shown a 4% per year declining trend in equipment assets as a fraction of turnover, over the period 1993-2003. The equipment asset base, which reflects the balance between acquisitions, depreciation and disposals has been almost constant at around R350,000,000 throughout the 1990s, despite the substantial rise in CSIR turnover during this period, and the declining value of the currency. Year-by-year equipment acquisition investment has fluctuated substantially, but the overall trend is slightly downward in absolute terms. The result is that the mean expected lifetime of the equipment (the asset base divided by the annual acquisitions) has lengthened, reaching about 15 years in some cases.

Benchmark: Similar-sized national research and development organisations outside of South Africa report equipment assets per unit turnover in the range 37% to 75%. The CSIR at 40% therefore falls at the bottom end of this range.

The declining equipment asset base partly reflects the changing nature of research in the CSIR and elsewhere, from a strong focus on primary knowledge generation to a greater emphasis on information assembly and transfer. Nevertheless, continued decline in investment in scientific infrastructure will lead to a situation where researchers at the CSIR are unable to remain at the forefront of research, especially in emerging technology areas. Declining investment in scientific infrastructure is a national problem, and a contributor to the loss of scientific skills from the country.





ANNUAL FINANCIAL STATEMENTS

CSIR contributes to our people's quality of life through its involvement in projects ranging from food security to orbital eye implants

CORPORATE GOVERNANCE

GOVERNANCE PRINCIPLES

Framework

Corporate Governance is formally 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 interests of these stakeholders. It is about leadership with integrity, responsibility and transparency.

The CSIR is committed to principles and practices, which will provide our stakeholders with the assurance that the organisation is managed soundly and ethically. We have established a management model that 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 change processes. These processes are supported by systems that 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 CSIR 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 CSIR Executive Board confirm that they are responsible for preparing financial statements that fairly present the state of affairs of the group as at the end of the financial year and the profit or loss and cash flows for that period. The financial statements are prepared in accordance with South African Statements of Generally Accepted Accounting Practice. In addition, the CSIR Board is satisfied that adequate accounting records have been maintained.

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

Risk management

In the case of risk management, the CSIR Board is accountable for the process of risk management and the system of internal control. These are reviewed regularly for effectiveness. Appropriate risk and control policies are established and communicated throughout the organisation. The CSIR Board retains control through the final review of key risk matters affecting the organisation.

Risk management in the CSIR is an ongoing process and is focused on identifying, assessing, managing and monitoring all known forms of significant risk across all business units and group companies. This has been in place for the year under review and up to the date of approval of the annual report and financial statements. 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/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.

There is a documented and tested process in place, which will allow the company to continue its critical business process in the event of a disastrous incident impacting on its activities.

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.

Going concern

The CSIR Board has reviewed the group's financial budgets for the period 1 April 2003 to 31 March 2004 and is satisfied that adequate resources exist to continue business for the foreseeable future. The CSIR Board confirms that there is no reason to believe the business will not be a going concern in the year ahead.

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 personnel, approval of salaries and acquisition and disposal of assets. It also defines authority levels in relations 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 CSIR 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 ensure 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.

Employee participation

The CSIR encourages effective and modern workplace practices and relationships to foster employee participation and involvement 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 CSIR 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 employees 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 those 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 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 four-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. In 2001, the CSIR obtained ISO 14001 certification for all sites and retained it during 2002.

GOVERNANCE STRUCTURE

CSIR Board

The responsibilities of the Board are governed by the Scientific Research Council Act (Act No. 46 of 1988, as amended by Act No. 71 of 1990).

The 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 requirements, meets quarterly. For the year under review, the Board met on 14 June, 29 August and 15 November 2002 and 21 February 2003.

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 pages 24 and 25). 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 reference.

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; Organisational Development and Communications; Technology for Development and Policy; Operations, Business Development and Technology Management, and Science and Technology Strategic Initiatives. The Executive Board meets weekly.

SCHEDULE OF ATTENDANCE AT CSIR BOARD AND CSIR BOARD COMMITTEES MEETINGS:

BOARD MEMBER	BOARD MEETING	AUDIT COMMITTEE	HUMAN RESOURCES AND REMUNERATION COMMITTEE	STRATEGIC REVIEW COMMITTEE
Total meetings conducted	4	2	2	3
Mr R Jardine	4		1	
Prof A A Eberhard	3	2		2
Dr D Gihwala	4	2		3
Mr K Ginwala	3			
Ms J Joffe	3		1	
Dr M A Letsebe	3		1	
Dr Z Rustomjee	4			2
Ms N Shikwane	3	2	2	
Mr E van As	1	1		

CSIR Management Board

The Chief Executive Officer of the CSIR is the President. 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 CSIR's Executive Board, together with the eight business unit directors. The Management Board meets twice a month.

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 its evolution.

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.

Public Finance Management Act

The Public Finance Management Act, Act No. 1 of 1999, as amended by Act No. 29 of 1999, came into effect on 1 April 2000 and has had an impact on governance matters in terms of the regulations of financial management in the public sector. The group complies, in all material aspects, with the Act.

CSIR BOARD MEMBERS

JANUARY 2000 TO 31 MARCH 2003



Mr Roger Jardine
(Chairman of the Board)
Chief Executive
Kagiso Media



Prof Anton Eberhard
IIRR Management
Programme
University of Cape Town



Dr Dhiro Gihwala
Dean: Faculty of Science
Peninsula Technikon



Mr Kymus Ginwala
Northern Research and
Engineering Corporation
USA



Ms Joan Joffe
Group Executive Corporate
Affairs
Vodacom Group (Pty) Ltd

CSIR BOARD COMMITTEES 2002/2003

COMMITTEE:

AUDIT

Members:

Mr Eugène van As (Chairman)
Dr Dhiro Gihwala
Ms Nobusi Shikwane
Prof Anton Eberhard
Dr Sibusiso Sibisi

Meetings:

06.06.2002
21.11.2002

Purpose:

Deals with all matters prescribed by the regulations issued in terms of the Public Finance Management Act No. 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. The Audit Committee has adopted a formal terms of reference and is satisfied that they have complied with their responsibilities as set out in the terms of reference.

COMMITTEE:

HUMAN RESOURCES AND REMUNERATION

Members:

Mr Roger Jardine (Chairman)
Ms Nobusi Shikwane
Ms Joan Joffe
Dr Anne Letsebe
Dr Sibusiso Sibisi

Meetings:

23.05.2002
23.08.2002

Purpose:

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



Dr Anne Letsebe
Deputy Director General
and Head of Cabinet
Office of the Presidency



Dr Zavareh Rustomjee
Director Southern Africa
Energy
bhp billiton



Ms Nobusi Shikwane
CEO
B2B Africa Holdings



Dr Sibusiso Sibisi
President & CEO
CSIR



Mr Eugène van As
Executive Chairman
Sappi Limited

COMMITTEE:

MERGERS, ACQUISITIONS AND COMMERCIALISATION

Members:

- Mr Roger Jardine (Chairman)
- Ms Joan Joffe
- Dr Zavareh Rustomjee
- Mr Kymus Ginwala
- Dr Sibusiso Sibisi

Meetings:

There were no meetings for the period under review

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

Meetings:

- 11.07.2002
- 31.10.2002
- 13.02.2003

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.

REPORT OF THE AUDIT COMMITTEE

Report of the Audit Committee in terms of Regulations 27.1.7 and 27.1.10 (b and c) of the Public Finance Management Act No. 1 of 1999, as amended by Act No. 29 of 1999.

The Audit Committee reports that it has adopted formal terms of reference as its Audit Committee Charter, and that it has discharged all of its responsibilities for the year, in compliance with the charter.

The Audit Committee is satisfied that an adequate system of internal control is in place to reduce significant risks faced by the organisation to an acceptable level, and that these controls have been effective during the period under review. The system is designed to manage, rather than eliminate, the risk of failure and to maximise opportunities to achieve business objectives. This can only provide reasonable, but not absolute, assurance.

The Audit Committee has evaluated the Annual Financial Statements of the CSIR Group for the year ended 31 March 2003 and based on the information provided to the Audit Committee, considers that it complies, in all material respects, with the requirements of the various Acts governing disclosure and reporting in the Annual Financial Statements. The Audit Committee has recommended the adoption of the Annual Financial Statements by the Board of the CSIR at their meeting of 5 June 2003.



Ms N Shikwane
Chairperson

5 June 2003



A U D I T O R - G E N E R A L

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 2003

1. AUDIT ASSIGNMENT

The financial statements and group financial statements as set out on pages 28 to 69 for the year ended 31 March 2003, 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 section 14(1) of the Scientific Research Council 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 2003, as set out on pages 38 to 40 is the responsibility of the accounting authority. My responsibility is to provide an assessment of the fairness and consistency of the performance information of the Council for Scientific and Industrial Research (CSIR) against the predetermined objectives set out in the corporate plan. My role is not to express an opinion on the appropriateness and relevance of the performance measures themselves, nor to evaluate or comment on the CSIR'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 CSIR has reported its performance information on page 38 to 40 of its financial statements, under the title "Performance against our Goals: Goals, Targets and Performance Results in Overview". My assessment covers only that section.

I have assessed the performance information against the CSIR's predetermined objectives as set out in the corporate plan.

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 2003 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) (PFMA).

3.2 Audit of performance information

In my opinion, the performance information furnished in terms of section 55(2)(a) of the PFMA fairly presents, in all material respects, the performance of the CSIR for the year ended 31 March 2003 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

19/06/2003

CSIR Executive Team: Back left to right: Dr Anthos Yannakou: Executive Vice-President Operations, Ms Tina Eboka: Executive Vice President Organisational Development and Human Resources, Mr Neo Moikangoa: Executive Vice-President Policy and Technology for Development, Mr Albert Jordaan: Executive Vice-President Finance and Commercialisation
Front left to right: Dr Hoffman Maree: Acting Vice-President Science and Technology Strategic Initiatives and Dr Sibusiso Sibisi: CSIR President and CEO



EXECUTIVE REPORT

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 2003.

In the opinion of the CSIR Board, which fulfils the role of directors as envisaged by the Companies Act No. 61 of 1973, the financial statements fairly reflect the financial position of the CSIR group as at 31 March 2003 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 direct and multi-disciplinary research and technology innovation' to compete globally while helping to build a better world at home. Nevertheless, NEPAD underscores 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. One of its key challenges is 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 subsidiaries, joint ventures and associated

companies are referred to under the headings: Key initiatives, Commercialisation and Our subsidiaries (pages 41 and 42).

ACTS AND LEGISLATION

As a statutory research council, established by the Government, the CSIR is governed by the Scientific Research Council Act (Act No. 46 of 1988, as amended by Act No. 71 of 1990). We are listed as a Public Business Enterprise in terms of the Public Finance Management Act No. 1 of 1999, as amended by Act No. 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 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 mandate provides us with a solid foundation for the years ahead. We acknowledge 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.

The CSIR's strategy focuses on national priorities as an integral part of the National System of Innovation; it needs to accelerate its evolution to a knowledge intensive technology organisation (KITO), which contributes to the African Renaissance and NEPAD, and is 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 identified five strategic priorities, which were 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.

The CSIR's strategy for 2003 translates into organisational priorities, informed by the DST Key Performance Indicators, against which our performance, both quantitatively and qualitatively, is measured. These priorities in turn provide our business goals.

OUR GOALS

For this reporting period our specific business goals have been:

- Business growth with strategic management of innovation
- Strategic relationship management
- Excellence in organisational processes
- Innovation and learning coupled to transformation
- Making an impact on sustainable development

The CSIR's performance is summarised in the tables on pages 38 to 40 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

Strategic priority

South Africa must become internationally competitive and regionally relevant to provide quality of life for its people. This will require S&T excellence, appropriate competences and strategic management of innovation focused on national priorities.

The CSIR requires sustainable real growth in income, dividends and royalties to compensate for the potential continued decline of the Parliamentary Grant. It must meet the S&T requirements of South Africa and the African region, and allow for international business development. By aligning with the National System of Innovation and developing and transferring market-led offerings, the CSIR contributes to increasing relevance and impact. Business growth for the CSIR also means increased financial sustainability, adapting to the emerging globalising economy and accelerating the evolution to a KITO.

During a year in which conditions remained competitive, the CSIR exceeded its targeted external operating revenue of R593,9 million by R43,8 million, reflecting a year-on-year growth of 13.0%. The most significant year-on-year growth (21.1%) was achieved in the international sector, itself an indicator of quality performance and delivery.

In addition, good growth has occurred in the private sector (16.9%) and the public sector (7.6%). Declining defence spending in real terms over the past five years in safety and security is indicative of the low growth of 4.1% in this sector.

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.

CSIR		ACTUAL	TARGET	2002	2001	2000	1999
EXTERNAL CONTRACT	5 YEAR	2003	2003				
INCOME PER SECTOR	COMPOUND	R'000	R'000	R'000	R'000	R'000	R'000
31 MARCH 2003	GROWTH						
External contract income	13.8%	637,645	593,854	564,117	490,020	426,601	356,339
Annual growth		13.0%	5.3%	15.1%	14.9%	19.7%	2.4%
Private sector	8.3%	268,949	243,565	229,974	244,811	214,445	183,983
Annual growth		16.9%	5.9%	(6.1%)	14.2%	16.6%	6.0%
Public sector	30.4%	175,351	170,467	162,891	109,982	91,628	74,965
Annual growth		7.6%	4.7%	48.1%	20.0%	22.2%	(1.7%)
National safety and security sector	1.8%	85,659	85,449	82,293	71,976	64,213	56,729
Annual growth		4.1%	3.8%	14.3%	12.1%	13.2%	(12.7%)
International sector (including Africa)	30.2%	107,686	94,373	88,959	63,251	56,315	40,662
Annual growth		21.1%	6.1%	40.6%	12.3%	38.5%	22.4%

Financial performance overview

The total operating revenue for the year of R938,0 million exceeded our targeted income of R891,6 million. The Parliamentary Grant was 1.7% lower than in 2002; this included R1,0 million for the National Crime Research Resources Centre and R4,0 million for the National Product Development Centre.

The results show a deficit of R153,2 million (2002: deficit of R7,9 million) against a targeted net margin of R18,1 million. The deficit is as a result of the post-retirement medical benefit expense of R170,6 million (see note 21.4 to the financial statements). The net margin excluding the post-retirement medical benefit expense amounts to R17,5 million.

Cash flow generated from operating activities for the year being reported on was R70,3 million (2002: R18,9 million). The cash and cash equivalent holdings increased to R105,7 million (2002: R79,2 million).

Internationally active

The CSIR's international income has grown to R107,7 million in 2003 (2002: R89,0 million) or 16.9% (2002: 15.8%) 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 R13,3 million, reflecting an increase of 21.1% over the previous year (2002: 40.6%) with a five-year compound growth of 30.2%. Our international strategy is to position the CSIR as a reputable provider of technology solutions, through establishing long-term relationships with multinational corporations 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 an 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.

CSIR FINANCIAL INDICATORS	ACTUAL 2003 R'000	TARGET 2003 R'000	ACTUAL 2002 R'000
31 MARCH 2003			
Total operating revenue (excl investment income)	938,019	891,605	876,996
Growth	7.0%	1.7%	10.8%
Parliamentary grant	295,429	297,751	296,883
Parliamentary grant received	297,751	297,751	302,877
Less:			
Grant received for projects started before year end but not completed	(17,576)		(15,254)
Add:			
Grant received in the prior year and projects completed in this year	15,254		9,260
Growth	(1.7%)	(1.7%)	0.2%
External Operating revenue (incl Contract income, royalties & other income)	642,590	593,854	580,113
Growth	10.8%	2.7%	17.2%
Expenditure (excl post-retirement medical benefits)	934,368	888,378	899,661
Growth	3.9%	(1.3%)	12.6%
Net Margin (excl post-retirement medical benefits)	17,486	18,060	(7,887)
Growth	321.7%	329.0%	(246.4%)

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 DST, a variety of dti funding schemes 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, the CSIR participated as a partner in 19 Innovation Fund projects.

The group revenue increased by R62,0 million (2002: R64,2 million) to R970,9 million (2002: R908,9 million) reflecting growth of 6.8% (2002: 7.6%). The group revenue increased by R274,1 million since 31 March 1999.

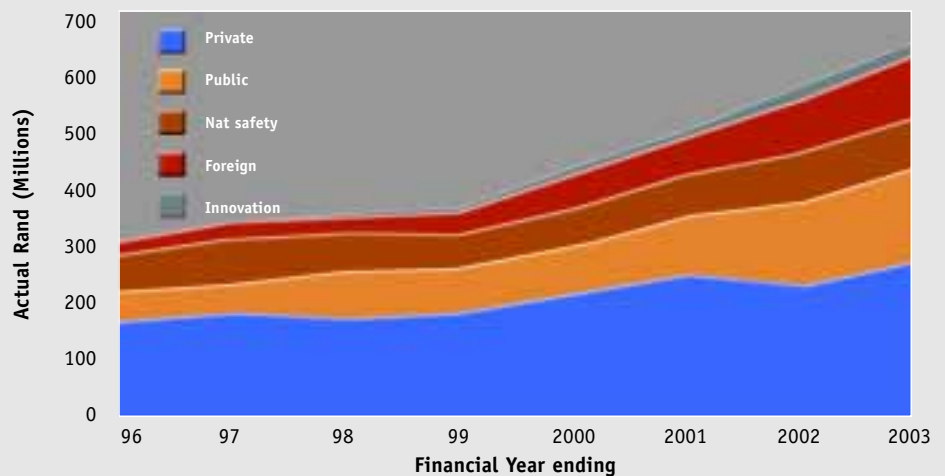
The group's net surplus, excluding the post-retirement benefit expense, increased by R3,5 million (2002: R0,6 million) to R11,8 million, reflecting growth of 41.6% (2002: 0.8%). The group's net surplus, excluding the post-retirement benefit expense, increased by R0,9 million since 31 March 1999.

SUMMARY OF GROUP RESULTS	2003 R'000	2002 R'000	2001 R'000	2000 R'000	1999 R'000
Revenue	970,878	908,891	844,683	775,902	696,783
Total operating revenue	986,273	923,770	848,012	777,826	697,460
Total revenue	996,860	939,266	860,154	789,058	712,123
Total expenses	1,155,754	930,965	851,916	785,144	701,285
Net surplus excl post-retirement benefit expense	11,753	8,301	8,238	3,914	10,838
Net cash flow from operating activities	73,744	29,359	72,743	46,881	87,028
Cash and cash equivalents at year end	114,253	93,815	87,907	58,151	49,527
Total assets	578,088	564,839	546,590	540,859	539,115
Total liabilities	429,307	253,393	244,484	184,645	181,066

CSIR PARLIAMENTARY GRANT AND EXTERNAL CONTRACT INCOME



SOURCES OF EXTERNAL CONTRACT INCOME



GOAL 2: STRATEGIC RELATIONSHIP MANAGEMENT

Strategic priority

The need for the CSIR to evolve to a KITO in a complex environment requires excellent management of key stakeholder relationships and the development of world-class and strategic alliances. A key strategic alliance with the UP, which largely focuses on creating critical mass through projects and people, will allow the CSIR to compete globally. The alliance has also created a number of joint venture companies to protect and exploit intellectual property, implement the Innovation Hub project, and establish incubators.

The CSIR will continue to target, enhance and expand collaborative projects with other Tertiary Education Institutions (TEIs) as part of the porous boundaries initiative, and will strive to develop enhanced collaboration with international KITOs through the Global Research Alliance.

Positioning the CSIR as a leading knowledge and technology solutions provider will create a critical mass to compete globally in S&T, 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. The CSIR makes use of networks, partnerships and alliances to create competitive opportunities

Strategic Alliances

The Southern Education and Research Alliance (SERA) is the embodiment of the strategic partnership between the University of Pretoria (UP) and the CSIR. As a non-exclusive partnership, the alliance seeks to add value to and complement the partner organisations through maximising synergies and reducing overlaps.

With its abundant collective resources of human skills and science and technology, SERA can help to address poverty and underdevelopment in Africa, and place our continent on a path of sustainable growth and development. Working across disciplines and across boundaries allows holistic

solutions to a variety of these challenges. SERA is a prime example of the kind of innovation that is necessary to catapult South Africa into the competitive economic position which is required to survive and prosper. Task teams have been active in the following areas: mining; African Centre for Gene Technology; forestry and forestry products; food and food technology; water; a bio-artificial project; academic information services; sports and sustainable rural development.

Government

The CSIR's Government Unit works through multi-disciplinary task teams to position the CSIR with key stakeholders in all three spheres of government to respond as a relevant roleplayer. The DST and the dti are involved in well over 60% of the projects undertaken with government partnership, but other initiatives include strategic discussions with the Department of Education; a thrust initiative to position the CSIR as a key player in the energy arena and strategic relationship building and business development with the Department of Environmental Affairs and Tourism.

The CSIR and the dti have a bilateral agreement in place to align and enhance their interaction in support of national goals, as part of a broader cooperation framework between the two organisations. In terms of the bilateral agreement, and through the Institutional Framework for Cooperation, the CSIR will provide technological solutions in support of the dti's role as facilitator of sustainable economic development for all South Africans. A project-specific signing ceremony led to the establishment of a UNIDO-sponsored National Cleaner Production Centre at the CSIR, which will assist in designing more efficient plant processes, implementing measures to reduce water usage, better utilise products and reduce the effluent load of factories. This initiative will assist production centres in accessing major world markets in the chemical, textile, metalworking and food processing industries, amongst others. Further project motivations are currently under development. These include projects in the areas of tourism, agro-processing, intellectual property, and nanotechnology.

International collaboration

In January 2003, the CSIR became part of the Global Research Alliance (GRA) as one of nine representatives from leading science and technology institutions around the world. The GRA was established with the objective of applying a global knowledge pool for global good through global funding. The Alliance will facilitate international R&D cooperation to address the problems facing the world, especially in the areas of water, health, energy, transportation and the digital divide. Institutions participating in the discussions which led to the agreement were CSIR India, the Danish Technological Institute (DTI), the Fraunhofer Gesellschaft in Germany, SIRIM Berhad

in Malaysia, TNO in The Netherlands, VTT in Finland, CSIRO in Australia, Battelle Memorial Institute in the USA and the CSIR in South Africa. Between them, these organisations have a formidable array of over 50,000 scientists and technologists.

The Nerve Centre of the Alliance is based at the CSIR and it is expected that the Alliance will forge close ties with institutions such as the World Bank, European Union and other international funding agencies.

GOAL 3: EXCELLENCE IN ORGANISATIONAL PROCESSES

Strategic priority

Customer satisfaction: Using its customer satisfaction surveys, the CSIR aims to revitalise and effectively refocus on the customer as part of the ongoing goal of achieving sustainable growth. The objective is to develop ongoing constructive partnerships with individual customers, which will then lead to improved quantity and quality of sales; higher customer retention; improved customer selection, acquisition, and conversion rate; and improved customer satisfaction, loyalty and referrals.

Safety, Health and Environment: All the CSIR's business units are certified in accordance with the international SABS ISO 14001 standard and we strive to retain the certification in a quest to promote excellence in this area, which is vital to our operations.

Harnessing IT: The CSIR needs to use the power of ICT to source intellectual, capital and knowledge resources to continuously develop our contribution and performance. In order to do so we continue to implement our IT architecture trajectories, ERP and e-business systems. We strive to coordinate our information and knowledge management strategies in a manner that supports the CSIR's accelerated evolution to a KITO.

Customer Satisfaction

In the year under review, the CSIR undertook a benchmark study amongst its clients. A total of 317 interviews were conducted representing clients from all the eight business units and action plans have been compiled to address the findings. Implementation of these plans will be monitored at regular intervals during the year.

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 878 clients returned satisfaction forms and an overall satisfaction level of 81% was achieved.

Being Environmentally Sustainable

Safety, health and environmental (SHE) audits were conducted by an accredited external auditor (Health and Safety) and South African Bureau of Standards (SABS Environmental Management), simultaneously. The aggregate for CSIR during the year reported was 92% (2001: 90.6%)

The disabling injury frequency rate for 2002 was 0.5 (2001: 0.4) against the aim of achieving a rate of less or equal to 1 per annum, to comply with our five-star standard. New claims to the Compensation Commissioner numbered 62 (2001: 63).

All the CSIR's business units (on-site and off-site) were certified in accordance with the international SABS ISO 14001 standard for an Environmental Management System. Our objective is to retain this certification in the future.

Harnessing the Information Revolution

Implementing the CSIR's e-business systems

Significant progress has been made in the implementation of the PeopleSoft ERP system. The new PeopleSoft Asset Management modules, and the first phase of the PeopleSoft Human Resource Management suite, were successfully deployed at the end of March 2003. Further modules will be deployed during the latter part of 2003 to 2004 along with the other financial applications. A procurement system (e-Procure to Pay) was also activated at the end of March 2003, enabling CSIR staff to procure from CSIR-preferred vendors and settle creditors via the Internet.

IT Governance supporting CSIR's accelerated evolution to a KITO

The IT Governance Committee, comprising certain members of CSIR Executive, business unit directors and other IT representatives, meets at least once a month to coordinate all IT-related initiatives at the CSIR. Areas of focus during the period under review include an ongoing review of the organisation's IT strategic focus, trajectories and initiatives, paying particular attention to the progress on the implementation of the PeopleSoft Enterprise System.

Improving efficiency and effectiveness of the CSIR's Information Services

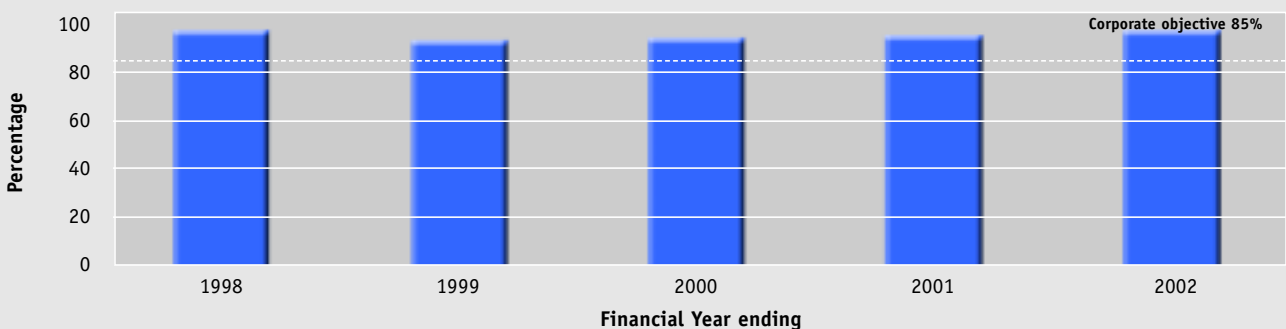
The new National Research and Development Strategy affords an opportunity for a new coordinated approach to procure access to online journals for all researchers in the country. We are working with the DST and other science councils to identify alternative approaches to this issue.

Improved knowledge management

The World Bank Africa group ran a workshop to familiarise CSIR staff with their post-project debriefing approach, which the CSIR will be using as an aid to organisational learning.

A web-based survey of knowledge management practices in the CSIR was conducted during February and March 2003. This survey looked at aspects of knowledge management, which will be analysed to ascertain areas of improvement and best practice. A separate study seeking to understand what expenditure takes place in the CSIR on knowledge management practices and processes revealed that knowledge management is well integrated into other organisational processes – although it suggested that there is significant room for improvement.

CSIR SHE AUDIT RESULTS FOR 1998 - 2002



GOAL 4: INNOVATION AND LEARNING COUPLED TO TRANSFORMATION

Strategic priority

The CSIR's human resource management and development strategy continues to adapt to changing internal and external demands such as transformation and the evolution of the CSIR to a KITO, which requires a learning and diverse culture. Transformation, with the imperative to grow the pool of black professionals, especially in the more senior levels, is coupled with empowerment of blacks externally, through, for example, the use of black enterprises in CSIR projects.

HR management and development within a KITO include recruitment and retention of knowledge workers, training and development within a learning organisation and a reward system to facilitate appropriate behaviour consistency. The CSIR supports organisational development that enhances employee satisfaction and knowledge creation through internal learning.

For the first time, a formal report on the state of science and technology in the CSIR has been included in the Annual Report (page 15-19), revealing that the CSIR continues to support one of the largest groups of skilled researchers in Africa. The report profiles the CSIR's core professional research resources and indexes the output of intellectual activity.

The CSIR's Human Resource Development and Transformation strategies are orientated towards improving individual and organisational performance while aiming to enhance demographic targets. 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.

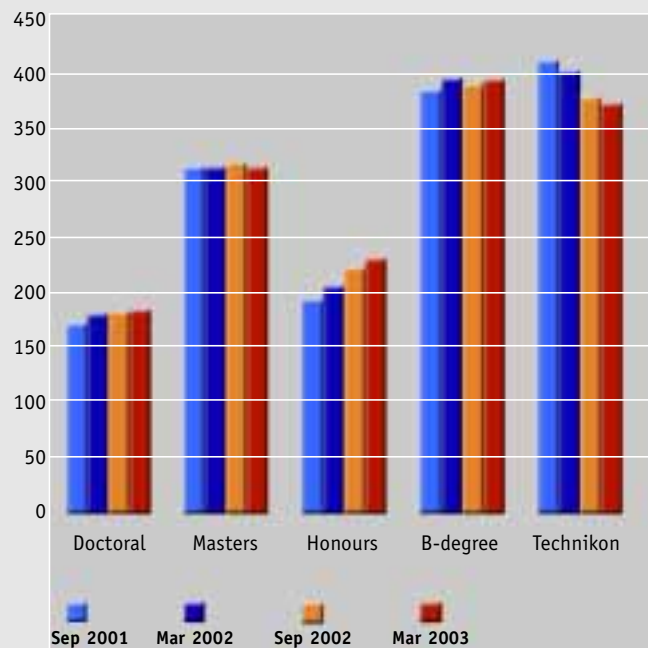
Our human capital endowment reflects an increase in higher level skills as we improve levels of demographic representivity, with an improvement in the number of professional staff across business units. The percentage of doctorates increased from 7.3% in 2002 to 7.6% in 2003. People with

Honours degrees increased from 8.3% in 2002 to 9.6% in 2003 and, similarly, people with B-degrees moved from 15.8% to 16.4%. People with Masters degrees increased from 12.5% to 13.0%.

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.

CSIR QUALIFICATION BREAKDOWN SEPTEMBER 2002 TO MARCH 2003



Employment Equity

The Employment Equity Report, covering the period 2002 to 2003, was submitted to the Department of Labour. Each business unit has an Employment Equity Plan in place to address challenges relating to demographic representivity, skills development, succession planning, fast-tracking, mentorship diversity management and organisational culture assessment.

The total staff complement of the CSIR as at 31 March 2002 was 2,551 and as at 31 March 2003 it was 2,458. This reflects a decrease in staff of 93. The CSIR is therefore 175 short in staff for it to reach the 2,633 March 2004 target.

Black staff complement as at 31 March 2002 comprised 41.4% and as at 31 March 2003 it was 42.9%. This indicates a slight increase in black staff. The CSIR has reached its 2004 target of 42.9%.

The total professional staff was 1,237 as at 31 March 2002 and as at 31 March 2003 it was 1,206. A growth of 193 staff is required to meet the 2004 target of 1,399.

Black professionals as at 31 March 2003 comprised 29.2% of the total staff complement. This is a slight increase of 2% from 31 March 2002. A growth of 5.8% is needed to meet the March 2004 target of 35%.

As at 31 March 2002, female professionals comprised 33.7%. There was a 0.1% decrease in female professionals as at 31 March 2003, which was 33.6%. A growth of 1.6% is needed to meet the March 2004 target. Female professionals amount to 405 employees, of which 138 are black and 267 are white. Disabled staff for the same period comprise 16 employees, of which one is a black female, four are black males, six are white males and five are white females.

Learnership Schemes

CSIR learnership schemes and study funding practices are aimed at remaining relevant in the knowledge intensive technology environment. Investment in science, engineering and technology learnerships was an estimated R17,3 million for 2003. Funding allocations included those in the CSIR's under- and postgraduate bursary scheme, an internship scheme, the SERA Bursary Scheme and various joint sponsorship schemes.

There is a positive potential for human capital acquisition and development in science, engineering and technology fields through joint stakeholder sponsorships, and the CSIR is planning to broaden the scope of learnerships in this particular area.

Skills Development

Each of the CSIR business units is affiliated to an appropriate Skills Education and Training Authority (SETA). CSIR has a SETA task team that coordinates its skills development efforts across the CSIR and each business unit has a registered Skills Development Facilitator with the respective SETAs.

Training for Excellence

CSIR Innovation, Leadership and Learning Academy (CiLLA) continues to support the CSIR's human resource development initiatives. Training and development solutions are jointly specified and developed, sourced or customised with our staff to address skills requirements in the context of unique challenges and strategic direction. Activities last year included:

- The CiLLA support base continued to grow with 589 participants attending 54 regular events. This excludes facilitation of workshops, customised refresher events, strategy sessions and various task team activities.

- The base suite of learning events was expanded to address at least 50% of personal development needs, articulated in individual development plans and business unit reviews.
- Fourteen new courses were introduced to meet newly expressed and strategic needs.
- External domain experts were introduced as learning event facilitators.
- The CiLLA LAB (Leadership Advisory Board) was established as a governance mechanism.
- The CSIR featured in learning events and forums of local business schools and executive development programmes.

Labour relations

Over the past year, CSIR employees have been represented by unions other than NEHAWU, which is a new development in the internal labour relations field. A sound relationship with NEHAWU has been maintained.

Remuneration

The CSIR's highly competitive and dynamic business environment, coupled with fierce external competition for the limited numbers of science and technology professionals in South Africa, has required the organisation to introduce and maintain remuneration systems which focus on rewarding value addition by employees to the organisation. This enables the CSIR to attract and retain the required employment levels.

HIV/AIDS awareness

The CSIR's involvement in the area of health and social sciences, specifically in HIV/AIDS awareness, continues to grow. Work in this field is driven by CSIR Mining Technology, servicing clients within the mining industry, specifically the platinum and coal mining industry. The HIV/AIDS awareness programmes established are multi-stakeholder managed with businesses and government playing crucial roles. Community involvement and social upliftment programmes are key aspects underlying these projects.

Several initiatives are underway, which include the coordination of all the HIV/AIDS work that is being conducted within the CSIR. This is done through the AIDS Working Group, which aims to maximise the skills base in the HIV/AIDS field within the CSIR and market comprehensive packages to our clients. The work in this field is diverse, ranging from research on vaccines and ART, to providing education to the communities.

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 the principle of co-responsibility between fund and member.

The Fund is administered by Discovery Health and governed by a Board of Trustees consisting of Mr Albert Jordaan (Chairman), Ms Suzette Harmse, Mr Gert Mostert (resigned January 2003), Mr Louis Vorster, Mr Roy Page-Shipp (appointed January 2003) and Mr Daniel Mosito.

Pension Fund

Globally, during the last three years and particularly over the last 12 months in South Africa, investment markets have been depressed due to a slow-down in international trade, the war in Iraq and local economic factors.

The result has been an average reduction in South African fund asset values of 12%, over the year ended 31 March 2003. The CSIR Pension Fund declined in asset value by approximately 6.8%, up to 31 March 2003.

The fund managers are required to beat the CPIX inflation rate by 3 percentage points each year. The Board of Trustees has initiated discussions with the fund managers to improve the results for the following year.

The present board of trustees consists of Mr Albert Jordaan (Chairperson), Ms Suzette Harmse, Ms Helena Heystek, Mr Daniel Mosito, Mr Thabo Pooe, Mr Gerhard Smith, Ms Tina Eboka and Ms Esther Johnson.

GOAL 5: MAKING AN IMPACT ON SUSTAINABLE DEVELOPMENT

Strategic priority:

The CSIR has developed competence, capacity and a track record over a number of years as a relevant and effective contributor to national sustainable development. Our main function is to develop and transfer technology solutions to partners who can replicate for appropriate impact. We also contribute to the priorities of the continent and support NEPAD.

Our sustainable development priorities include implementing poverty alleviation projects for government resulting in job creation; contributing technology to government's integrated development strategy; developing SMMEs, involvement in IKS projects and contribution to NEPAD, particularly in the field of infrastructure and ICT.

Technology for Development

The National R&D Strategy calls for dedicated technology interventions to exert a direct impact on the national programme of innovation-led socio-economic development. The CSIR has been involved in sustainable development for nearly a decade through its Technology for Development (TfD) initiative. In this time, it has promoted sustainable economic activities in the subsistence and informal sectors. The objectives of this initiative are to help enable the previously disadvantaged to acquire the ability to meet basic needs, combat poverty on a sustainable basis and empower people to become effective players in the mainstream of the economy. This has been pursued through the mobilisation of the appropriate CSIR resources into carefully selected projects in partner-communities. The premium has been on generating and capturing learning which can then be made available to other parties with the ability to replicate on the requisite scale for necessary impact.

Development projects

Providing technology for small business creation and support, job creation and rural development forms part of the CSIR's TfD drive and impacts directly on poverty alleviation through involvement in more than seventy projects. Craft-based projects have been implemented in the Eastern Cape, Free State, North West and the Limpopo Province on behalf of the DAC. In addition, ten science and technology projects have been implemented on a nation-wide basis on behalf of the DST. The CSIR has also been involved in implementing poverty alleviation projects for the DoT, the DEAT and the DSD. These projects are focused on the transfer of available technologies to communities to enhance the use of local resources, indigenous knowledge and to stimulate economic activity.

More than sixty other rural development projects have also been implemented by the CSIR over the past year. Many of these projects have been implemented in poverty nodes as identified by cabinet. The alliance between the University of Pretoria and the CSIR has resulted in the formation of the Sustainable Rural Development Task Team, and the Greater Giyani Natural Resource Development Programme in the Limpopo province.

SMME support

The CSIR, as one of the key role players in SMME development, has been contributing to national support programmes for small business, spearheaded by the dti. Through the network of partners, we have provided support in design, implementation and capturing of the learning in national pilot programmes such as the SMME Franchising Referral and Information Network programme (FRAIN), the

One Stop Shop SMME pilot programme and the Intensive Hand Holding programme. The CSIR has also been supporting some of the recent national SMME initiatives such as Technology Transfer Centres for dti and the GODISA programme for the DST. The experience gained by the CSIR in this domain has also contributed to the South African Global Entrepreneurship Monitor (GEM), the revision of the SMME strategy for South Africa and number of conference proceedings, both locally and internationally. The CSIR is involved in National Human Resources Development (NHRD) through Technology for Women in Business, a dti programme.

Crime prevention

The CSIR Crime Prevention Centre leads the crime prevention national imperative by providing technological solutions and support for crime combating and information-based approaches to social crime prevention. The Centre facilitates essential integration across disciplines and has built capacity in strategic planning as well as monitoring and evaluation of interventions in this arena. The Centre maintains partnerships with a broad range of local and international partners and is a member of the board of the International Crime Prevention Centre in Canada. Key clients of the Centre

include the Department of Justice and Constitutional Development, the Scorpions, the UNDP, Limpopo Provincial Government and Johannesburg Metro.

HIV/AIDS initiatives

In addressing the HIV/AIDS pandemic, the CSIR has become involved in the implementation of peer education, behavioural change education and preventative presumptive treatment for the management of sexually transmitted infection. Specific projects include the Carletonville Mothusimpilo Project, the PowerBelt Aids Project and the Anglo Platinum Circle of Hope community project.

Regional impact

Until recently, the CSIR's involvement in regional integration was mainly through contract research for African clients and through our role as the WAITRO Africa Regional Focal Point. The CSIR's response is such that our plans of action are geared towards growth and impact, with a very strong bias towards regional linkages, internationally financed projects, and developmental challenges. The advent of NEPAD has opened up new possibilities and provided a strategic framework for our activities on the African continent.

PERFORMANCE AGAINST OUR GOALS

GOALS, TARGETS AND PERFORMANCE RESULTS IN OVERVIEW

GOAL	KEY PERFORMANCE INDICATORS	TARGET	PERFORMANCE RESULTS
GOAL 1: Growing our business	Increase total external contract income (excl investment income)	5.0%	Exceeded (7.0%)
	Increase total revenue	9%	Exceeded (13.0%)
	- private sector growth	2%	Exceeded (16.9%)
	- public sector growth	23%	Not met (7,6%)
	- national safety & security	7%	Not met (4.1%)
	- international sector growth	10%	Exceeded (21.1%)
	Net margin	R18.1m	Not met (R17.5m) (excluding post-retirement benefit expense)
	Net margin (% external income)	5,6%	Not met (2.74%)
	Ratio of external revenue to total revenue (excluding investment income)	66.8%	Exceeded (68.5%)
GOAL 2: Strategic relationship management	Implementation of joint strategy between UP/CSIR	Accessing knowledge workers through joint projects and bursary/intern schemes	The African Centre for Gene Technology (ACGT) was formally constituted and projects were allocated to the CSIR and UP, with relevant research equipment also being purchased. Joint bursary undergraduate scheme with UP has 13 students, with 35 CSIR employees doing post-graduate studies under the staff study rebate scheme.

		Managing and developing joint venture schemes	The water task group is making progress with MSc students and projects have been started (after seed funding) - a rural development joint project and first contract secured in the Limpopo project.
	Continued expansion of collaborative partnerships with other TEIs	Creating and developing joint S&T platforms and projects	Forestry Centre with Natal University is growing with over 15 post-graduate students involved.
	Establishing international collaboration	Establish international R&D alliance to address world problems	GRA and GMRA formally launched. Nine leading S&T organisations agreed to establish the Global Research Alliance (GRA) in January 2003.
	Strategic management of key stakeholders	Establish platforms in support of national priorities	WAITRO Executive expressed satisfaction with CSIR's management of the Africa focal point and DST have committed funding to this initiative. The bilateral with dti is progressing satisfactorily, a similar arrangement has now been instituted with SABS. Good progress on Advanced Manufacturing and Logistics Technology Strategy Initiative
GOAL 3: Excellence in organisational processes	Customer satisfaction	CSIR objective 75%	Exceeded (81%)
	Safety, Health and Environment -Safety, Health and Environment (SHE) audits -Disabling Injury Frequency Rate (IFR)	Rate of 85% Less than 1% of CSIR workforce	Exceeded (92%) Achieved (0.5%)
	ISO 14001	Obtain and retain certification for all CSIR business and corporate units	Achieved (obtained multi-site listing)
	Harnessing IT: Development of strategic framework for IR activities	E-Business Exco to guide strategy	Achieved – IT Governance Committee meets fortnightly to discuss IT strategy and monitors progress on Enterprise system implementation.
	Managing of strategic IT initiatives	Revisit IT structures to improve alignment	Achieved – various fora restructured: mandates and performance objectives clarified
		Lowering of total cost of ownership of internal IT platforms	Strong compliance in standardisation of hardware and software resulted in faster response time to problem solving and lower overall cost of LAN support
		Implementation of IT architecture and enterprise systems decisions	Good progress – implementation of PeopleSoft Enterprise System underway Organisation-wide document management system mandated
		Merging of UP and CSIR library information services	Progress delayed – co-operation model being rethought
	Effective deployment of web technology as commercial vehicle and key management communication tool	Ongoing improvement of CSIR management model	Achieved – also collaboration with SAEF to demonstrate potential value to external organisations
		Coordinate web initiatives in domains of portals, intranet, internet, architecture	Achieved – significant progress with portals to stakeholders, customers, vendors and employees Workflow system deployed throughout organisation New enterprise system fully web-enabled
IT competency development	Enhancement of e-commerce offerings and channels	Achieved – increased number of products and services via e-commerce Upgraded dynamic database-driven internet web site	
	Ongoing training of users	Achieved – classroom and CBT-based courses are offered; and user needs regularly revisited	

GOAL 4:
Innovation and learning coupled to transformation

Staff satisfaction	75%	69.9% (target not achieved)
Staff diversity		
- Total staff complement	2,588	2,458 (decrease in staff of 93)
- Professional staff (% of total staff)	52.5%	49.1% (growth of 194 staff required to meet 2004 target)
- Black professional staff (% of total professional staff)	33.8%	29.2% (slight decrease of 3%)
- Female professional staff (% of total professional staff)	34.5%	33.6% (almost 1% decrease)
- Total black staff (% of total)	41.8%	42.9% (reached 2004 target)
- Total female staff (% of total)	39.3%	38.9% (almost 1% decrease)
Bursaries and internships		
- Black bursars (% of total)	75%	77% (increase of 2%)
- Female bursars (% of total)	40%	30% (decrease in numbers)
- Interns (% of total)	80% Black 50% Female	81% Black 54% Female (increase)
Training		
- Staff development	Enhance rapid skills and competence development	Ongoing
- Adult Basic Education	Five year target set in 1996 to equip 140 less educated employees with basic reading, writing and arithmetic skills	Achieved five-year target in 2001. New targets to be set for the next five years

GOAL 5:
Making an impact on sustainable development

Active and relevant involvement in national priorities	Reducing poverty	Good progress in providing technology transfer services directly to poor communities. Market linkages key to progress.
	Invest strategically in rural development	Good progress through SERA Sustainable Rural Development
	Small business development and support	Good progress in policy support SMME strategy; programme support to NAMAC, GODISA and Technology Transfer Stations
	Support and contribute to the public understanding of science and technology	Ongoing participation in National/Provincial SET weeks
	Support the protection and application of Indigenous Knowledge Systems	Key agreement with SAN Community on formal IKS rights. Ongoing awareness creation and interaction with communities.
	Addressing HIV/AIDS	Good progress in implementation of peer education, behavioural change education and Preventative Presumptive Treatment for the management of sexually transmitted infection.
Active and relevant involvement in National Imperatives (NI) programme	Actively lead, participate in and support the Science Councils' activities in the National Imperatives	Good progress in crime prevention; poverty alleviation; and rural development

MANAGING OUR FUNDING AND KEY INITIATIVES

Managing our Parliamentary Grant

The Parliamentary Grant allocated to the CSIR for the 2003 financial year amounted to R297,8 million (2002: R302,9 million), which represented a decrease of 1.7%. 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.

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 2003 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, the Technology Impact, profiles a number of scientific and technological developments supported through the Parliamentary Grant investment.

Board and Executive Management Remuneration

Details of the CSIR Board are set out on page 22 of the Corporate Governance Report. The membership and terms of reference of each Board Committee are further described on pages 24 and 25 of the Corporate Governance Report.

Remuneration to Board Members and Executive Management is set out in Note 22 to the Annual Financial Statements

The CSIR is involved in investigating the incorporation of soya into indigenous foods to improve nutrition and introduce business opportunities.

Acquisitions

There were no business acquisitions during the 2003 financial year.

Key Initiatives

The Innovation Hub

The Innovation Hub is the first Science Park in southern Africa, which is being established according to international best practice of modern Science Parks, while responding to local business needs. As a world-class, knowledge-based development, the Hub will house a variety of technology-related businesses across a range of disciplines, including information and communications technology, biosciences, electronics, aerospace and technology for advanced design, and value-added materials.

Through SERA, the CSIR and its alliance partner, the University of Pretoria, are supporting the Gauteng Provincial Government's Blue IQ initiative to invest in economic infrastructure development in the province.

Automotive Industry Development Centre (AIDC)

The automotive industry is one of the success stories of the South African economy and the Automotive Industry Development Centre (AIDC) (Pty) Ltd has actively contributed within its mandate to this achievement. The CSIR and the Gauteng Provincial Government, through its Blue IQ initiative, are the shareholders in the AIDC. The successes of the South African automotive industry have been based on consistent export growth. In a highly competitive international market, the AIDC's mandate is to assist the industry to become globally more competitive. To this end, the AIDC has successfully pursued, through a portfolio of projects, its triple bottom line of industry impact, social and environmental impact and financial sustainability. This has been met and exceeded in many cases.



Commercialisation

The CSIR has made good progress in establishing a refined model for the successful transfer of CSIR technology to industry. Most of the activities centred around the establishment of SERA (Pty) Ltd as intellectual property management and commercialisation vehicle for the CSIR, in partnership with the University of Pretoria (UP), and developments pertaining to venture companies utilising CSIR technology in companies owned through Technovent (Pty) Ltd, the entity which holds CSIR interests in technologies that have been spun out of the organisation.

SERA (Pty) Ltd's core responsibilities, exercised in close concert with the CSIR's business units, include the screening of inventions and advice on strategic management of intellectual property and commercialisation strategies. Over the last two years, its patent portfolio has grown to 29 new provisional patents, 12 new Patent Cooperation Treaty (PCT) applications and seven new national phase applications in various domains.

In the Technovent stable, Thermaspray (Pty) Ltd was involved in a successful management buy-out, which will ensure the sustainability of the company into the future. AMP Ceramics (Pty) Ltd was wound down and the activities merged with an existing ceramics company in industry. With the assistance of SERA (Pty) Ltd, a deal was structured and funding sourced for the imminent spinning-off of pipeline company Pipeline Performance Technologies (Pty) Ltd into a further phase of development.

Flagship commercialisation projects, which SERA (Pty) Ltd supported, include BreatheTex Corporation (Pty) Ltd, a successful SMME (with a small CSIR shareholding) employing CSIR-developed textile technology. BreatheTex earned the Jürgen Schrempp Award for Excellence in 2002 (the top South African Excellence Award) at the South African Excellence Foundation *Innovative Strategies for Competitiveness Conference* during the past year. On another front, the joint UP/CSIR bio-artificial liver project was awarded an Innovation Fund grant of R6,12m.

The CSIR's licensing vehicle, Technology Finance Corporation (Pty) Ltd, remains active in securing international interest in South African-owned patents as its main income sources.

Our Subsidiaries

The activities of the CSIR's subsidiaries, as set out in Addendum A to the financial statements, are, respectively, to invest in developing research, transfer technology to industry, provide finance for development technology and

venture capital to exploit it. The aggregated deficit of the subsidiaries, before dividends paid, amounted to R4,0 million (2002: R0,8 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 this report, which affect the financial position of the organisation, as reflected in these financial statements.

Changes to our Management Board

Ms Tina Eboka, formerly Director of CSIR Water, Environment and Forestry Technology was appointed Executive Vice-President: Organisational Development and Communications. Dr Hoffman Maree, Director of CSIR Manufacturing and Materials Technology was appointed as Acting Vice-President: S&T Strategic Initiatives, tasked with assisting the CSIR President and CEO Dr Sibisi in driving strategic initiatives relating to scientific and technological excellence.

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 before 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 2003, as set out on pages 43 to 69 of this report, have been approved by the CSIR Board at its meeting on 10 June 2003. The Board is of the opinion that the CSIR is financially sound and operates a going concern.



Mr Roger Jardine
CSIR Board Chairman



Dr Sibusiso Sibisi
CSIR President

CSIR FIVE-YEAR FINANCIAL REVIEW

31 MARCH 2003

S T A T I S T I C S

	2003	2002	2001	2000	1999
	R'000	R'000	R'000	R'000	R'000

FINANCIAL INDICATORS

The post-retirement medical benefit expense and liability in respect of 2003 have been excluded for comparison of financial indicators.

Total reserves	155,825	308,986	376,253	365,217	353,555
Long-term liabilities	-	-	4,000	9,000	14,350
Total assets	576,479	551,001	550,853	550,886	542,583
Net assets	326,472	310,360	322,429	385,253	379,567

INCOME AND EXPENSE INDICATORS

Parliamentary grant recognised as income	295,429	296,883	296,332	317,334	325,469
External operating revenue	642,590	580,113	495,056	433,215	361,194
Expenditure	934,368	899,661	798,752	750,040	688,098
Investment income	13,835	14,778	12,753	10,550	13,097
Net surplus/(deficit)	17,486	(7,887)	5,389	11,036	11,662

CASH FLOW

Net cash inflow from operating activities	70,278	18,937	84,227	53,540	83,755
Net cash outflow from investing activities	(42,358)	(15,114)	(56,632)	(36,600)	(108,643)
Net cash outflow from financing activities	(1,374)	(4,182)	(3,444)	(5,350)	14,350
Cash and cash equivalents beginning of year	79,166	79,525	55,374	43,784	54,322
Cash and cash equivalents end of year	105,712	79,166	79,525	55,374	43,784

RATIO ANALYSIS

Asset management

Net asset turn	2,9	2,9	2,5	2,0	1,8
Return on net assets	5,4%	(2,5%)	1,7%	2,9%	3,1%
Current ratio	1,3	1,3	1,2	1,7	1,2

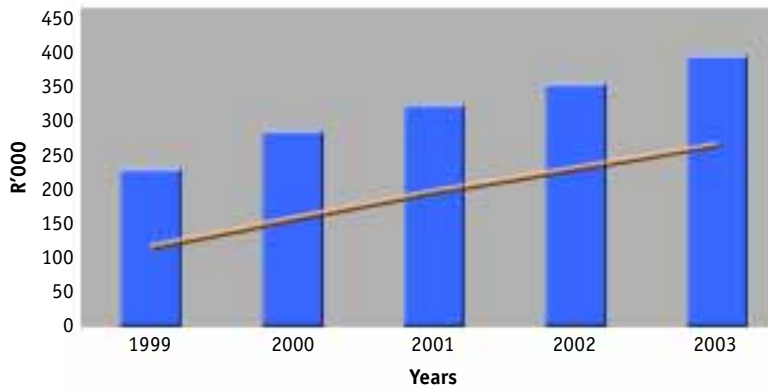
Performance

Total revenue (excl. investment income) per employee	381,6	343,8	312,3	274,9	222,8
Total external operating revenue per employee	261,4	227,4	195,4	158,7	117,2
Total revenue (excl. investment income) per R1 operating expenditure	2,2	2,1	2,3	2,4	2,6
Remuneration as a % of total expenditure	51,7%	49,2%	51,7%	53,5%	55,5%
Net cash generated from operating activities per employee	28,6	33,2	19,6	27,2	19,0
Independence ratio	69,0%	66,7%	63,1%	58,3%	53,5%

DEFINITIONS

Net asset turn - Total revenue (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.

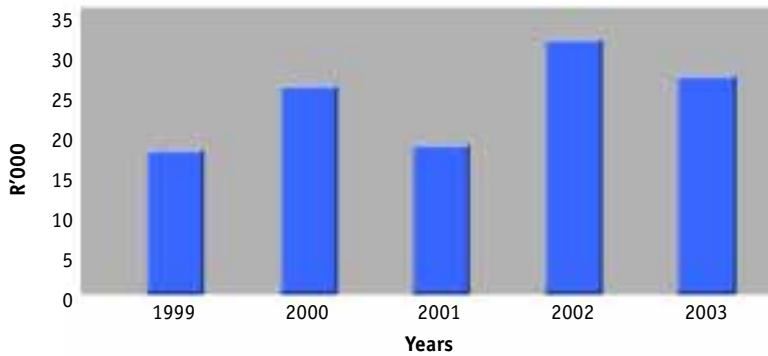
REVENUE PER CAPITA



■ Total revenue (excl. investment income) per employee
— Total external operating revenue per employee

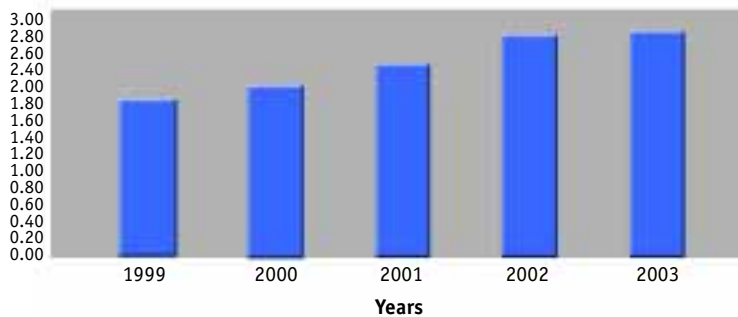
The improvement in revenue per employee is due to the increase in external income as well as the decrease in number of employees.

NET CASH GENERATED FROM OPERATING ACTIVITIES PER EMPLOYEE



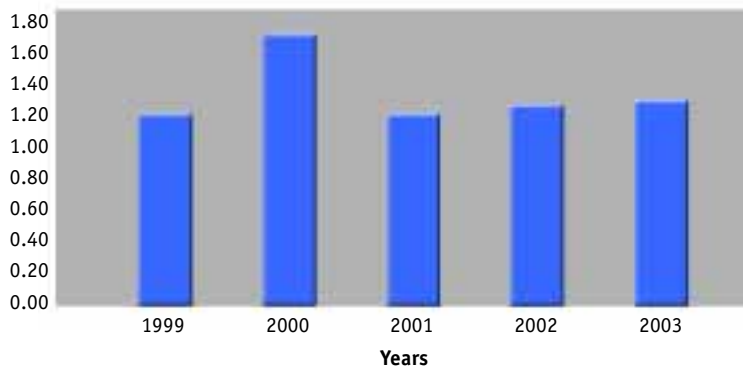
The net cash generated per employee decreased due to a substantial increase in inventory and contracts in progress.

NET ASSET TURN



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

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 2003

	Notes	GROUP		CSIR	
		2003 R'000	2002 R'000	2003 R'000	2002 R'000
Revenue	2	970,878	908,891	936,079	863,104
Other income		14,682	13,831	1,940	12,747
Profit on disposal of property, plant and equipment		713	1,048	-	1,145
Total operating revenue		986,273	923,770	938,019	876,996
Expenditure					
Employees' remuneration		498,987	465,194	482,723	442,525
Depreciation and amortisation	6 & 7	34,411	38,688	31,804	35,063
Operating expenses		449,250	425,528	418,594	422,073
Loss on disposal of property, plant and equipment		1,191	-	1,006	-
Loss on disposal of business		22	-	-	-
Loss on disposal of interest in joint venture		99	-	241	-
Loss on disposal of subsidiary		-	211	-	-
Post-retirement medical benefits	21	170,647	-	170,647	-
Total expenditure		1,154,607	929,621	1,105,015	899,661
Net operating deficit for the year before investment income	3	(168,334)	(5,851)	(166,996)	(22,665)
Income from investments	4	14,067	14,822	13,835	14,778
Net post acquisition (deficit)/surplus of joint ventures and associates		(3,479)	674	-	-
Net operating (deficit)/surplus for the year before taxation		(157,746)	9,645	(153,161)	(7,887)
Taxation	5	(836)	(1,062)	-	-
Profit attributable to outside shareholders	13	(1,049)	(282)	-	-
Net (deficit)/surplus for the year		(159,631)	8,301	(153,161)	(7,887)

BALANCE SHEET

31 MARCH 2003

	Notes	GROUP		CSIR	
		2003 R'000	2002 R'000	2003 R'000	2002 R'000
ASSETS					
Non-current assets		240,021	234,475	256,256	249,499
Property, plant and equipment	6	208,041	198,369	205,241	193,394
Intangible assets	7	4,044	4,853	392	749
Interest in joint ventures and associates	8	17,931	19,248	4,966	5,636
Interest in subsidiaries	9	-	-	35,657	37,720
Investments	10	10,005	12,005	10,000	12,000
Current assets		338,067	330,364	320,223	301,502
Accounts receivable	11	171,053	156,564	164,456	145,887
Inventory and contracts in progress	12	52,761	79,985	50,055	76,449
Cash and cash equivalents		114,253	93,815	105,712	79,166
TOTAL ASSETS		578,088	564,839	576,479	551,001
EQUITY AND LIABILITIES					
Reserves		147,899	310,797	155,825	308,986
Accumulated funds		136,689	296,320	145,075	298,236
Self insurance reserve		10,750	10,750	10,750	10,750
Non-distributable reserve:					
Foreign currency translation reserve		460	3,727	-	-
Outside shareholders interest	13	883	649	-	-
Non-current liabilities		170,733	2,018	170,647	1,374
Long-term liabilities	14	85	624	-	-
Acquisition consideration due	15	-	1,374	-	1,374
Retirement benefit obligation	21	170,647	-	170,647	-
Deferred taxation	16	1	20	-	-
Current liabilities		258,573	251,375	250,007	240,641
Advances received	17	56,450	73,629	56,450	73,620
Accounts payable and accruals	18	135,533	106,522	127,652	97,539
Taxation		396	1,210	-	-
Provisions	19	66,194	70,014	65,905	69,482
TOTAL EQUITY AND LIABILITIES		578,088	564,839	576,479	551,001

STATEMENT OF CHANGES IN EQUITY

31 MARCH 2003

	ACCUMULATED FUNDS	SELF INSURANCE RESERVE	NON DISTRIBUTABLE RESERVE
GROUP			
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	-	-	867
Restated balance at 31 March 2002	296,320	10,750	3,727
Net deficit for the year	(159,631)	-	-
Exchange differences arising on translations of overseas operations	-	-	(3,267)
Balance at 31 March 2003	136,689	10,750	460
CSIR			
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	-
Net deficit for the year	(153,161)	-	-
Balance at 31 March 2003	145,075	10,750	-

CASH FLOW STATEMENT

FOR THE YEAR ENDED 31 MARCH 2003

	Notes	GROUP		CSIR	
		2003 R'000	2002 R'000	2003 R'000	2002 R'000
Cash flow from operating activities					
Cash receipts from external customers		678,229	585,891	625,390	549,386
Parliamentary grant received		297,751	302,877	297,751	302,877
Cash paid to suppliers and employees		(914,637)	(874,181)	(866,698)	(848,104)
Cash generated from operating activities					
	A	61,343	14,587	56,443	4,159
Investment income received		14,067	14,822	13,835	14,778
Taxation paid		(1,669)	(50)	-	-
Net cash inflow from operating activities		73,741	29,359	70,278	18,937
Cash flow from investing activities					
Property, plant and equipment acquired		(46,778)	(37,079)	(44,614)	(34,391)
Proceeds from the disposal of property, plant and equipment		2,862	6,629	314	6,329
Decrease/(increase) in net interest in subsidiaries		-	-	2,063	(5,305)
Proceeds on disposal of interest in joint ventures		259	-	259	-
Disposal of subsidiary	B	-	-	-	-
Disposal of business	C	212	-	-	-
(Increase)/decrease in interest in joint ventures and associates		(2,520)	(10,212)	670	(1,229)
(Increase)/decrease in investments		(1,050)	20,000	(1,050)	20,000
Net acquisition of long-term patents		(398)	(1,673)	-	(518)
Net cash outflow from investing activities		(47,413)	(22,335)	(42,358)	(15,114)
Cash flows from financing activities					
Decrease in long-term liabilities		(1,830)	(6,985)	(1,374)	(4,182)
(Decrease)/increase in outside shareholders interest		(815)	137	-	-
Net cash outflow from financing activities		(2,645)	(6,848)	(1,374)	(4,182)
NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS					
		23,683	176	26,546	(359)
Cash and cash equivalents at beginning of the year		93,815	87,907	79,166	79,525
Effect of foreign exchange rate changes		(3,245)	5,732	-	-
CASH AND CASH EQUIVALENTS AT END OF THE YEAR		114,253	93,815	105,712	79,166

NOTES TO THE CASH FLOW STATEMENT

FOR THE YEAR ENDED 31 MARCH 2003

	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
A. RECONCILIATION OF NET OPERATING DEFICIT FOR THE YEAR BEFORE INVESTMENT INCOME TO CASH GENERATED FROM OPERATING ACTIVITIES				
Net operating deficit for the year before investment income	(168,334)	(5,851)	(166,996)	(22,665)
Adjusted for:				
Depreciation	33,204	36,668	31,447	34,712
Post-retirement medical benefits	170,647	-	170,647	-
Permanent diminution of assets	-	1,826	-	-
Loss on disposal of property, plant and equipment	1,191	-	1,006	-
Profit on disposal of property, plant and equipment	(713)	(1,048)	-	(1,145)
Unrealised (gain)/loss on forward exchange contracts	(2,187)	2,400	(2,187)	2,400
Loss on disposal of joint venture	99	-	241	-
Loss on disposal of business	22	-	-	-
Provision against investment in joint venture written back	-	-	(500)	-
Provision for share write-off	3,050	-	3,050	-
Profit on disposal of subsidiary	-	211	-	-
Subsidiary not previously consolidated	-	(578)	-	-
Provision against loans to subsidiaries	-	-	-	11,840
Amortisation of investment in technology	1,207	2,020	357	351
Operating surplus before changes in working capital	38,186	35,648	37,065	25,493
Increase in accounts receivable	(16,577)	(1,256)	(18,569)	(18)
Decrease/(increase) in inventory and contracts in progress	26,630	(32,330)	26,394	(31,133)
(Decrease)/increase in advances received	(17,179)	4,119	(17,170)	2,502
Increase in accounts payable and provisions	30,283	8,406	28,723	7,315
Net working capital changes	23,157	(21,061)	19,378	(21,334)
Cash generated from operating activities	61,343	14,587	56,443	4,159

NOTES TO THE CASH FLOW STATEMENT

FOR THE YEAR ENDED 31 MARCH 2003

GROUP

2003
R'000

2002
R'000

B. 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 / bank overdraft	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

C. DISPOSAL OF BUSINESS

The group holds 75% of the share capital in Thermaspray (Pty) Ltd. The business of Thermaspray (Pty) Ltd was sold to management effective from 1 November 2002.

The aggregated fair value of the assets and liabilities disposed were as follows:

Bank balance and cash	3,121
Trade and other receivables	2,088
Inventories	594
Property, plant and equipment	540
Long-term liabilities	(83)
Trade and other payables	(1,798)
Provisions	(77)
Amount due to group companies	(1,030)

Net asset value disposed

3,355

Loss from sale of business

(22)

Total consideration

3,333

Satisfied by :

Cash

3,333

Net cash inflow arising on disposal

Cash consideration

3,333

Bank balance and cash disposed

(3,121)

212

* The shares were disposed of for R1.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

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.

The financial statements are expressed in South African rand (R).

The following are approximate values in rand at 31 March for selected currencies:

	2003	2002
Pound Sterling	12.6220	16.1603
US dollar	8.0145	11.3350
Australian dollar	4.8191	6.0518
Canadian dollar	5.4472	7.1079

1.1 Basis of consolidation

The annual consolidated financial statements incorporate the annual financial statements of the CSIR and its subsidiaries. On acquisition the assets and liabilities of the relevant subsidiaries are measured at their fair values at the date of acquisition. The interest of minority shareholders is stated at the minority's proportion of the fair value of the assets and liabilities recognised. 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 financial year end. The carrying amount of such investments is reduced to recognise any decline, other than temporary decline, in the value of individual investments.

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

1.3 Joint ventures

A joint venture is a contractual arrangement whereby the CSIR and other parties undertake economic activity, which is subject to joint control.

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 financial year end. 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.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

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 Forward exchange contracts

Gains and losses from forward exchange contracts are dealt with in the income statement. Unrealised gains and losses arising on currency forward contracts designated as hedges of identified exposures are deferred and matched against gains and losses arising on the specific transactions. 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.

1.7.2 Plant, equipment and vehicles

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

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 | - 3 to 10 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.

The gain or loss arising on the disposal of an asset is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognised in income.

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).

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

1.8.3 Goodwill

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

Goodwill arising on the acquisition of a joint venture or an associate company is included within the carrying amount of the joint venture or associated company. Goodwill arising on a subsidiary is presented separately in the balance sheet. On disposal of a subsidiary, joint venture or associated company, the attributable amount of unamortised goodwill is included in determination of the profit or loss on disposal.

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.

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.

The CSIR provides post-retirement medical benefits to qualifying employees. The expected costs of these benefits are determined using the projected unit credit method, with actuarial valuations being carried out at each balance sheet date. Contributions are made to the relevant funds over the expected service lives of the employees entitled to those funds. The estimated cost of providing such benefits is charged to the income statement on a systematic basis over the employees' working lives within the CSIR.

Actuarial gains and losses that exceed 10% of the greater of the present value of the post-retirement medical obligation and fair value of the plan assets are recognised in the income statement in the year when actuarially determined. The amount recognised in the balance sheet represents the present value of the post-retirement medical aid contribution as adjusted for unrecognised actuarial gains and losses and reduced by the fair value of the plan assets. Any asset resulting from this calculation is limited to unrecognised actuarial losses and the present value of available refunds and reductions in future contributions to the plan.

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 inventory is determined by the weighted average method. Net realisable value represents the estimated selling price less all estimated costs to completion and costs to be incurred in selling. 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 bases used in the computation of the taxable profit.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

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.

Deferred tax assets and liabilities are offset when they relate to income taxes levied by the same taxation authority and the group intends to settle its current tax assets and liabilities on a net basis.

The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities using tax rates enacted or substantively enacted at the balance sheet date. Deferred tax is charged to the income statement except to the extent that it relates to a transaction that is recognised directly in equity, or a business combination that is an acquisition. The effect on deferred tax of any changes in tax rates is recognised in the income statement except to the extent that it relates to items previously charged or credited directly to equity.

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 are 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
- Interest income is accrued on a time basis, by reference to the principal outstanding and at the interest rate applicable.
- Dividend income from investments is recognised when the shareholders' rights to receive payment have been established.

1.15 Borrowing costs

Borrowing costs are charged against income as and when incurred.

1.16 Financial instruments

1.16.1 Financial assets

Accounts receivable

Accounts and other receivables are stated at their nominal values as reduced by appropriate allowances for estimated irrecoverable amounts.

Contracts in progress

Contracts in progress are stated at cost less any provision for diminution in value.

Investments

Investments are stated at cost less any provisions for diminution in value.

Cash and cash equivalents

Cash and cash equivalents are stated at fair value.

1.16.2 Financial liabilities and equity instruments

Accounts payable, accruals and advances received

Accounts payable, accruals and advances received are stated at their nominal value.

Equity instruments

Equity instruments are recorded at the proceeds received, net of direct issue costs.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

	GROUP				CSIR			
	2003 R'000	%	2002 R'000	%	2003 R'000	%	2002 R'000	%
2. REVENUE								
Parliamentary grant	295,429	31	296,883	32	295,429	32	296,883	34
Parliamentary grant received	297,751	31	302,877	33	297,751	32	302,877	35
Less:								
Grant received for projects started before year end but not completed	(17,576)	(2)	(15,254)	(2)	(17,576)	(2)	(15,254)	(2)
Add:								
Grant received in prior year for projects completed in this year	15,254	2	9,260	1	15,254	2	9,260	1
Contract income	669,559	68	603,843	67	637,645	67	564,117	65
Private sector	286,201	29	250,441	28	268,949	29	229,974	27
Public sector	175,351	18	162,891	18	175,351	19	162,891	19
National Safety & Security sector	85,659	9	82,293	9	85,659	9	82,293	9
International sector (including Africa)	122,348	12	108,218	12	107,686	10	88,959	10
Royalties	5,890	1	8,165	1	3,005	1	2,104	1
	970,878	100	908,891	100	936,079	100	863,104	100

3. 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:

Auditors' remuneration	1,778		1,939		1,445		1,780
Audit fees	1,689		1,842		1,373		1,691
Expenses	89		97		72		89
Net foreign exchange (losses)/gains	(13,939)		11,720		(14,035)		11,825
Fees for services	105,573		109,648		99,891		105,944
Patent costs	2,163		1,560		2,163		1,560
Legal costs	1,194		4,823		1,058		4,602
Consultants	102,216		103,265		96,670		99,782
Operating leases	26,311		22,659		25,615		19,216
Buildings	3,631		3,985		3,223		799
Equipment	18,620		15,687		18,332		15,430
Vehicles	4,060		2,987		4,060		2,987
Board members', directors' and Executive management's emoluments	12,493		12,622		5,166		5,609
For services on the Board	51		50		51		50
For managerial services	12,442		12,572		5,115		5,559
Details disclosed in note 22							
Permanent diminution of assets	-		1,826		-		-
Lost and/or stolen equipment	321		255		321		255
Damaged equipment	1,400		290		1,400		290
Theft and/or damage to hired vehicles	262		452		262		452

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
4. INCOME FROM INVESTMENTS				
Interest	14,067	14,819	13,025	13,927
- Earned	14,787	14,847	13,037	13,953
- Paid	(720)	(28)	(12)	(26)
Dividends received	-	3	810	851
	14,067	14,822	13,835	14,778
5. TAXATION				
South African normal taxation ¹	719	701		
- Current taxation: current year	719	651		
- Deferred taxation: current year	-	50		
Foreign taxation	117	361		
- Current taxation	136	355		
- Deferred taxation	(19)	6		
	836	1,062		
The CSIR and its subsidiary, South African Inventions Development Corporation (SAIDCOR), are exempt from South African normal taxation.				
(Deficit)/surplus attributable to exempt income	(154,682)	8,746		
Deficit attributable to subsidiaries with assessed losses	(6,223)	(5,800)		
Surplus attributable to foreign subsidiaries	582	4,661		
Surplus attributable to subsidiaries liable for income tax ¹	2,577	2,038		
Net operating (deficit)/surplus for the year before taxation	(157,746)	9,645		
¹ The tax reconciliation is based on the taxable income and taxation charges of the subsidiary companies liable for South African income tax.				
South African normal rate of taxation	30.00%	30.00%		
Capital gains taxation	1.80%	-		
Expenses not allowed	20.90%	3.33%		
Permanent differences	(24.80%)	-		
Previous year assessment revised	-	1.07%		
Current and deferred taxation - effective rate	27.90%	34.40%		

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

6. PROPERTY, PLANT AND EQUIPMENT

	Depreciation for the year R'000	2003			2002		
		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	3,833	179,411	75,541	103,870	172,635	71,708	100,927
Equipment	28,944	379,710	285,362	94,348	368,528	281,085	87,443
Vehicles	427	4,305	3,277	1,028	4,260	3,056	1,204
	33,204	572,221	364,180	208,041	554,218	355,849	198,369
CSIR							
Land	-	8,795	-	8,795	8,795	-	8,795
Buildings	3,832	179,400	75,540	103,860	172,635	71,708	100,927
Equipment	27,397	372,731	280,953	91,778	357,316	274,332	82,984
Vehicles	218	3,538	2,730	808	3,228	2,540	688
	31,447	564,464	359,223	205,241	541,974	348,580	193,394

	2003				
	Land R'000	Buildings R'000	Equipment R'000	Vehicles R'000	Total R'000
GROUP					
Opening balance	8,795	100,927	87,443	1,204	198,369
Additions	-	6,776	39,572	430	46,778
Disposals	-	-	(3,700)	(180)	(3,880)
Depreciation	-	(3,833)	(28,944)	(427)	(33,204)
Exchange differences	-	-	(23)	1	(22)
	8,795	103,870	94,348	1,028	208,041
CSIR					
Opening balance	8,795	100,927	82,984	688	193,394
Additions	-	6,765	37,511	338	44,614
Disposals	-	-	(1,320)	-	(1,320)
Depreciation	-	(3,832)	(27,397)	(218)	(31,447)
	8,795	103,860	91,778	808	205,241

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 R147,846 (2002: R660,785) are encumbered (see note 14). This represents the total net book value of all equipment and vehicles encumbered.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

7. INTANGIBLE ASSETS

	Amortisation for the year R'000	Cost R'000	2003 Accumulated amortisation R'000	Net book value R'000	Cost R'000	2002 Accumulated amortisation R'000	Net book value R'000
GROUP							
Investments in technology	1,207	10,215	6,171	4,044	10,605	5,752	4,853
CSIR							
Investments in technology	357	1,398	1,006	392	1,398	649	749

	2003 Net book value	
	GROUP	CSIR
Opening balance	4,853	749
Additions	398	-
Amortisation	(1,207)	(357)
	4,044	392

	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
Cost of investments ¹	6,294	6,793	-	-
Loans to joint ventures and associates	14,676	13,661	4,966	5,636
Share of post-acquisition losses	(3,039)	(1,206)	-	-
	17,931	19,248	4,966	5,636

8. INTEREST IN JOINT VENTURES AND ASSOCIATES

Cost of investments ¹	6,294	6,793	-	-
Loans to joint ventures and associates	14,676	13,661	4,966	5,636
Share of post-acquisition losses	(3,039)	(1,206)	-	-
	17,931	19,248	4,966	5,636

¹ Included in the cost of the investments is an amount of R6,3 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.

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31 MARCH 2003

Details of the joint ventures at 31 March 2003 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
					2003	2002	
Biosys SA Investment sold during the year	South Africa	-	-	Development of botanical extracts	-	320	31 March
Miningtek Consultants & Services Ltd	British Virgin Islands	50%	50%	Mining industry consultancy	13,982	14,111	31 March
Aeroflo (Pty) Ltd Company liquidated during the year	South Africa	-	-	Development of helicopter filters	-	(254)	31 March
SERA (Pty) Ltd	South Africa	50%	50%	Commercialisation and licensing of patents	2,720	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	933	-	31 March

Where financial statements were not available unaudited management accounts as at 31 March 2003 were used to account for joint ventures.

GROUP

2003 R'000	2002 R'000
---------------	---------------

The following are details of the significant joint ventures' assets, liabilities and income:

Current assets	35,710	52,598
Long-term assets	11,468	11,504
Current liabilities	16,993	17,359
Long-term liabilities	34,839	51,338
Income	48,645	77,779
Expenses	52,532	74,268

Details of the associates at 31 March 2003 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
					2003	2002	
AIDC Development Centre (Pty) Ltd	South Africa	40%	40%	Automotive industry development and support services	294	-	31 March

The following are details of the associate's assets, liabilities and income:

Current assets	16,679	21,296
Long-term assets	2,043	1,000
Current liabilities	7,441	23,215
Long-term liabilities	1,367	-
Income	48,961	16,822
Expenses	49,526	17,740

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
9. INTEREST IN SUBSIDIARIES				
Shares at cost			36,778	36,778
Indebtedness			(1,121)	942
- by subsidiaries ¹			31,059	32,448
- provision against loans			(23,078)	(23,078)
- to subsidiaries			(9,102)	(8,428)
			35,657	37,720

Details disclosed in Addendum A

¹ Included in loans to subsidiaries is an amount of R6,3 million for convertible unsecured debenture stock in CSIR International Limited. The loan will not be repaid but converted into share capital in future and was therefore converted at the rate of exchange on acquisition of the subsidiary.

Agreements have been entered into between the CSIR and certain subsidiaries to subordinate the loans made to those subsidiaries.

10. INVESTMENTS

	Number of shares held		Class of shares				
	% held	2003		2002			
Unlisted Shares				5	2,005	-	2,000
- Breathetex (Pty) Ltd	18.75	13,050	12,000	Ordinary	6,850	5,800	6,850
Provision for share write off					(6,850)	(3,800)	(6,850)
- Virus Protection Systems (Pty) Ltd	15	25	25	Ordinary	-	-	-
- Aluminum Squeeze Castors (Pty) Ltd	5	10,000	10,000	Ordinary	5	5	-
- Naledi Ya Africa (Pty) Ltd	25	250	250	Ordinary	-	-	-
- Pan-A-Cam (Pty) Ltd	15	18	18	Ordinary	-	-	-
<i>Executive's valuation of shares R'000</i>		5	2,005				
Deposits (funds on call)					10,000	10,000	10,000
					10,005	12,005	10,000

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

11. ACCOUNTS RECEIVABLE

Trade receivables	143,455	126,965	137,568	117,477
Prepaid expenditure	6,064	8,039	6,064	7,925
Other receivables	21,534	21,560	20,824	20,485
	171,053	156,564	164,456	145,887

12. INVENTORY AND CONTRACTS IN PROGRESS

Inventory	4,877	7,500	2,171	5,276
Contracts in progress less provision for losses	47,884	72,485	47,884	71,173
	52,761	79,985	50,055	76,449

13. OUTSIDE SHAREHOLDERS INTEREST

Shareholders loans	78	156		
Profit attributable to outside shareholders	805	493		
Prior years	493	211		
Current year	1,049	282		
Dividends declared and paid	(737)	-		
	883	649		

The loans are interest free, unsecured and there are no fixed terms of repayment.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
14. LONG-TERM LIABILITIES				
Unsecured and interest free				
IDC	-	-	-	-
The loan was repayable annually commencing on 30 June 1996 in amounts equal to 45% of the net royalty income and/or the net deemed royalty income from specific projects. From 30 September 1999 the annual payment was equal to 70% of the net royalty income. The loan was terminated on 30 November 2002.	-	1,207	-	-
Less: Portion repayable within one year included in current liabilities (note 18)	-	(1,207)	-	-
AECI	-	-	-	-
The loan was repayable from 30 April 2000	-	4,000	-	4,000
Less: Portion repayable within one year included in current liabilities (note 18)	-	(4,000)	-	(4,000)
Secured and interest bearing				
Capitalised finance leases	85	624	-	-
Total leases	270	708	-	-
Less: Portion repayable within one year included in current liabilities (note 18)	(185)	(84)	-	-
The leases are repayable in monthly instalments at interest rates that vary between 17.091% to 17.324%.				
The current finance leases are secured over motor vehicles and machinery with a net book value of R147,846 (2002: R660,785) (see note 6).				
	85	624	-	-
15. ACQUISITION CONSIDERATION DUE				
Unsecured and interest free				
Shares bought in Quotec Limited	802	2,419	802	2,419
Less: Portion repayable within one year included in current liabilities (note 18)	(802)	(1,045)	(802)	(1,045)
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 in foreign currency on the fulfilment of profit warranties.				
	-	1,374	-	1,374
16. DEFERRED TAXATION				
Balance at the beginning of the year	20	(44)		
Tax loss	-	134		
Provisions	-	36		
Prepayments	-	(120)		
Accelerated capital allowances	(19)	14		
	1	20		

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31 MARCH 2003

	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
17. ADVANCES RECEIVED				
Advances on contracts received from clients	56,450	73,629	56,450	73,620
18. ACCOUNTS PAYABLE AND ACCRUALS				
Accounts payable and accruals	134,333	97,786	126,637	90,094
Forward exchange contracts	213	2,400	213	2,400
Short-term portion of long-term liabilities (note 14 & 15)	987	6,336	802	5,045
	135,533	106,522	127,652	97,539
	Opening balance	Additional provisions	Utilised and reversed	Closing balance
19. PROVISIONS				
GROUP				
Provision for salary and related expenses	65,149	65,443	(64,939)	65,653
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	2,965	1,313	(3,866)	412
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 future warranty expenses	1,900	-	(1,771)	129
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.				
	70,014	66,756	(70,576)	66,194
CSIR				
Provision for salary and related expenses	64,617	65,364	(64,617)	65,364
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	2,965	1,313	(3,866)	412
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 future warranty expenses	1,900	-	(1,771)	129
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.				
	69,482	66,677	(70,254)	65,905

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
20. OPERATING LEASE COMMITMENTS				
Financial commitments under non-cancellable operating leases will result in the following payments falling due:				
Within one year:	19,606	6,732	19,213	6,660
Land and buildings	3,320	-	3,056	-
Equipment	14,266	4,935	14,137	4,906
Vehicles	2,020	1,797	2,020	1,754
Within two to five years:	28,611	7,032	27,967	6,379
Land and buildings	12,178	614	11,946	-
Equipment	14,113	3,989	13,701	3,954
Vehicles	2,320	2,429	2,320	2,425

21. RETIREMENT BENEFITS OF EMPLOYEES

21.1 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. All the CSIR's permanent employees are members of the fund.

Employer contributions of R35,5 million (2002: R26,3 million) and employee contributions of R18,4 million (2002: R15,7 million) were paid over during the year. Employer contributions are charged against income when incurred.

21.2 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) (5). 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 R240,609 (2002: R294,926) and employee contributions of R131,838 (2002: R161,189) were paid over during the year. Employer contributions are charged against income when incurred.

21.3 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 5 (2002: 6) employees who are members of the AIPF and 1 (2002: 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 R63,123 (2002: R64,090) and employee contributions of R37,407 (2002: R37,868) were paid over during the year to the AIPF and TEPF.

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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21.4 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 the fund and its members. 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. Due to changes in the Medical Schemes Act of 1998 the scheme can no longer accept the liability for retirement benefits of qualifying members of the scheme. The CSIR has accepted this liability and has recognised the full obligation in the current financial year.

The accumulated benefit obligation and the annual cost of accrual of benefits are assessed by independent qualified actuaries using the projected unit method. The estimated present value of the anticipated expenditure, for both in-service and continuation members, was recalculated by the actuaries as at 31 March 2003.

	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
The amount included in the balance sheet arising from the CSIR's obligation in respect of post-retirement medical benefits is as follows:				
Present value of obligations	345,346	-	345,346	-
Fair value of plan assets	(174,699)	-	(174,699)	-
Net obligation	170,647	-	170,647	-
Key assumptions:				
Expected long-term rate of return on plan assets	13%		13%	
Expected increase in health care costs	11%		11%	

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

31 MARCH 2003

22. BOARD MEMBERS, DIRECTORS AND EXECUTIVE MANAGERMENTS' REMUNERATION

Company	Fees for services as director R'000	Basic salary R'000	Managerial services		Total R'000	
			Bonuses and performance related payments R'000	Retirement fund & medical aid contributions R'000		
Board members and executive directors						
Dr S Sibisi	CSIR	-	985	61	217	1,263
Mr SR van der Walt	Technovent (Pty) Ltd	-	453	30	68	551
Mr HJ Howse (up to 23 Dec 2002)	Thermaspray (Pty) Ltd	-	253	31	32	316
Mr P Harms (up to 23 Dec 2002)	Thermaspray (Pty) Ltd	-	186	28	24	238
Mr J Schiller	Agrimage (Pty) Ltd	-	332	15	44	391
Mr N Badenhorst	Agrimage (Pty) Ltd	-	309	15	44	368
Dr CE Ringas	Pipeline Performance Technologies (Pty) Ltd	-	482	-	-	482
Mr MS Sherratt	Pipeline Performance Technologies (Pty) Ltd	-	365	-	-	365
Mr Z Masilela	Pipeline Performance Technologies (Pty) Ltd	-	365	-	-	365
Mr GJ Turner	Pipeline Performance Technologies (Pty) Ltd	-	372	-	-	372
Mr EN Peralta	Pipeline Performance Technologies (Pty) Ltd	-	129	-	-	129
Dr O Safriel	Technology Finance Corporation (Pty) Ltd	-	629	90	85	804
Foreign subsidiaries						
Ms A Loots	Quotec Limited (UK)	-	1,128	300	-	1,428
Dr NA Waterman	Quotec Limited (UK)	-	977	-	-	977
Dr A Hickman (from 15 Sept 2002)	Quotec Limited (UK)	-	489	52	-	541
Remunerated in Pound sterling						
Non-Executive board members						
Prof AA Eberhard	CSIR	12	-	-	-	12
Dr D Gihwala	CSIR	12	-	-	-	12
Mr K Ginwala	CSIR	12	-	-	-	12
Dr Z Rustomjee	CSIR	12	-	-	-	12
Ms J Joffe	CSIR	3	-	-	-	3
Executive Management						
Dr A Yannakou	CSIR	-	780	164	161	1,105
Mr AJ Jordaan	CSIR	-	815	174	176	1,165
Mr N Moikangoa	CSIR	-	741	112	137	990
Ms T Eboka (from 1 Sept 2002)	CSIR	-	502	-	90	592
		51	10,292	1,072	1,078	12,493

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 (2002: 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

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	GROUP		CSIR	
	2003 R'000	2002 R'000	2003 R'000	2002 R'000
24. CONTINGENT LIABILITIES				
Bank guarantees issued in respect of third party liabilities	27,371	23,005	27,371	23,005

Legal costs and litigation:

In the nature of CSIR's business, agreements with complex deliverables may be entered into. All necessary steps are taken to manage the risks inherent to these transactions. If and when it is evident that there is a reasonable probability that a dispute on a transaction could lead to costs against the CSIR, such costs will be disclosed.

Management is of the opinion that none of the pending legal action and litigation against the CSIR on 31 March 2003 will result in any material losses to the CSIR.

Management's best estimate of all liabilities for legal costs are provided for and included in accounts payable and accruals (note 18).

25. CAPITAL COMMITMENTS				
Authorised but not contracted	5,045	11,410	5,045	11,410
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 2003 include foreign trade receivables of R30,0 million (2002: R19,0 million) and foreign trade payables of R163,980 (2002: R576,807). The full amounts of foreign trade payables for 2003 were covered by forward exchange contracts at year end.

The following table summarises by major currency the amounts to be paid under forward exchange contracts:

US Dollars	2,733	63,231	2,733	63,231
3 - 6 months at rates averaging USD 8.2347 (2002: USD11.5724)	2,733	61,940	2,733	61,940
6 - 12 months at rates averaging USD NIL (2002:12,2968)	-	1,291	-	1,291
Pound sterling				
3 - 6 months at rates averaging GBP 13.2880 (2002: GBP 16.5149)	1,993	4,674	1,993	4,674
Euro				
3 - 6 months at rates averaging EUR 9.3513 (2001: EUR 10.1343)	1,407	6,934	1,407	6,934
	6,133	74,839	6,133	74,839

NOTES TO THE ANNUAL FINANCIAL STATEMENTS

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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 had 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 CSIR did not exercise its rights to take up the remaining share options.

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 a 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 2003 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 can not 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 can not be determined as the loans are interest free with no fixed terms of repayment.

ADDENDUM A: INTEREST IN SUBSIDIARIES 31 MARCH 2003

INTERESTS OF THE CSIR

Consolidated subsidiaries	Country of incorporation	Issued capital R'000	Effective holding		Financial year end	Shares at cost	
			2003 %	2002 %		2003 R'000	2002 R'000
DIRECT INVESTMENTS							
South African Inventions Development Corporation (SAIDCOR)	South Africa	27 220	100	100	31 March	27,220	27,220
Technovent (Pty) Ltd	South Africa	5,000	100	100	31 March	5,000	5,000
CSIR International Limited*	British Virgin Island	326	100	100	31 March	326	326
CSIR North America Inc *	United States of America	5	100	100	31 March	5	5
Quotec Limited	United Kingdom	100	100	100	31 March	4,227	4,227
* No statutory audit was performed							
						36,778	36,778
INDIRECT INVESTMENTS							
Included in SAIDCOR:							
Technology Finance Corporation (Pty) Ltd (TECHNIFIN)	South Africa	5 200	100	100	31 March	4,400	4,400
Included in Technifin carrying value:							
Quality Electronics Developments (Pty) Ltd	South Africa	1 000	76	76	30 June	-	-
Implico BV (Incorporated in the Netherlands)	Netherlands/ South Africa	500	100	100	31 March	118	118
Included in Technovent (Pty) Ltd							
Mbuyu Biotech (Pty) Ltd * (formerly 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							

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

INTERESTS OF THE CSIR

Net indebtedness		Net investment		General nature of business		
to subsidiaries	by subsidiaries					
2003	2002	2003	2002	2003	2002	
R'000	R'000	R'000	R'000	R'000	R'000	
9,097	8,428	-	-	18,123	18,792	Investment in research, development and implementation of technology.
-	-	-	599	5,000	5,599	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.
-	-	6,928	6,293	7,254	6,619	The company serves as a holding company for certain CSIR international activities.
5	-	-	1,063	-	1,068	Supports and consults to the pipeline industry. Operations discontinued during the year.
-	-	1,053	302	5,280	4,529	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.
9,102	8,428	7,981	8,257	35,657	36,607	
						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.
						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..
						The nature of the business changed during the year to the development of and trading in biotechnology property and expertise.
						Commercialises and exploits a range of intrusion alarm systems.
						Provides plasma nitrating surface hardening services to the industry.
						Develops and applies ceramic and metal thermal spray coatings and offers customised solutions to industry.
-	-	-	1,113	-	1,113	The management of pipelines and water networks using technology solutions.
						Providing satellite images to farmers for precision farming.
9,102	8,428	7,981	9,370	35,657	37,720	

LIST OF ACRONYMS ABBREVIATIONS

ACGT	African Centre for Gene Technology
AIDC	Automotive Industry Development Centre
AMTS	Advanced Manufacturing and Logistics Technology Strategy
ART	Anti-Retroviral Therapy
CCIR	Consultative Committee for Ionising Radiation
CEO	Chief Executive Officer
CiLLA	CSIR Innovation, Leadership and Learning Academy
COHORT	Committee of Heads of Research and Technology
CSIRIS	CSIR Information Services
DAC	Department of Arts and Culture
DEAT	Department of Environmental Affairs and Tourism
DFA	Development Facilitation Act
DoT	Department of Tourism
DRFM	Digital Radio Frequency Memory
DSD	Department of Social Development
DST	Department of Science and Technology
dti	Department of Trade and Industry
EHS	Environment, Health and Safety
ERP	Enterprise Resource Planning
FRAIN	Franchising Referral and Information Network programme
GEM	Global Entrepreneurship Monitor
GRA	Global Research Alliance
HR	Human Resources
ICRM	International Committee for Radionuclide Metrology
ICT	Information and Communications Technology
IFR	Injury Frequency Rate
IKS	Indigenous Knowledge Systems
IT	Information Technology
KITO	Knowledge Intensive Technology Organisation
LAB	Leadership Advisory Board
NHRD	National Human Resources Development
NI	National Imperatives
NEHAWU	National Education, Health and Allied Workers Union
NEPAD	New Partnership for Africa's Development
NOSA	National Occupational Safety Association
NRF	National Research Foundation
PCT	Patent Cooperation Treaty
PSI	Peace Support Initiatives
R&D	Research and Development
SABS	South African Bureau of Standards
SADC	Southern African Development Community
SAIMM	South African Institute of Mining and Metallurgy
SAPI	South African Planning Institute
SERA	Southern Education and Research Alliance
SET	Science, Engineering and Technology
SETA	Skills Education and Training Authority
SHE	Safety, Health and Environment
SMME	Small, Medium and Micro Enterprise
S&T	Science and Technology
TEI	Tertiary Education Institution
TfD	Technology for Development
THRIP	Technology and Human Resources for Industry Programme
UNDP	United Nations Development Programme
UP	University of Pretoria
WAITRO	World Association of Industrial and Technological Research Organisations

CSIR STRUCTURE



CSIR Management Team

Back left to right:
 Mr Phil Hendricks,
 Director Roads and Transport
 Technology
 Dr Petro Terblanche,
 Director Food, Biological and Chemical
 Technologies
 Mr Gerhard Smith,
 Acting Director Water, Environment and
 Forestry Technology
 Ms Tina Eboka,
 Executive Vice-President
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 Mr Neo Moikgangoa,
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 Technology for Development
 Dr Anthos Yannakou,
 Executive Vice-President Operations

Front left to right:
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 Director Information and
 Communications Technology
 Dr Sibusiso Sibisi,
 CSIR President and
 Chief Executive Officer
 Mr Albert Jordaan,
 Executive Vice-President
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