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Department of Science and Technology

Human Sciences Research Council

CeSTII SURVEY OF RESEARCH & EXPERIMENTAL DEVELOPMENT INPUTS SCIENCE COUNCILS: 2003/4 FINANCIAL YEAR

Organisation	Please modify address label if necessary

PURPOSE OF SURVEY

This survey collects information on the inputs into R&D activities of all research organisations in South Africa including Science Councils. This information is needed to shape policy and programmes in support of research and development. The time period of interest is Financial Year 1 April 2003 to 31 March 2004.

CONFIDENTIALITY

The Centre for Science, Technology and Innovation Indicators (CeSTII) within the Knowledge Management research programme of the Human Sciences Research Council (HSRC) conducts this Survey for the Department of Science and Technology (DST). All data gathered for this Survey will be held in the strictest confidence. The HSRC, DST or any organisation associated with this Survey will not publish, release, or disclose any information on, or identifiable with, individual companies, business units or R&D units to unauthorised parties, unless written permission is granted by the organisation concerned.

DUE DATE

Please complete and return this form as soon as possible, but no later than **30 September 2004**.

ASSISTANCE

If you have any problems in completing this form and/or in meeting the due date, please do not hesitate to contact the survey managers for assistance:

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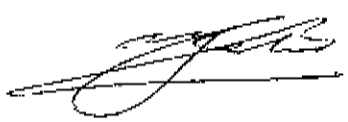

Prof. Michael Kahn
Executive Director: CeSTII / Knowledge Management
Human Sciences Research Council

Person completing this form:

Name (please print)	
Designation	
Signature	
Date	

Tel:	( )
Fax:	( )
Cell:	
E-mail	

THE FOLLOWING DEFINITIONS ARE IMPORTANT IN THE COMPLETION OF THE SURVEY QUESTIONNAIRE: WHAT IS R&D?

Definition

This survey follows the approach of the Organisation for Economic Co-operation and Development (OECD), which defines Research and Experimental Development (R&D) as creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of humanity, culture and society, and the use of this stock of knowledge to devise new applications.

The basic criterion for distinguishing R&D from related activities is the presence in R&D of an appreciable element of novelty and the resolution of scientific and/or technological uncertainty, i.e. when the solution to a problem is not readily apparent to someone familiar with the basic stock of commonly used knowledge and techniques in the area concerned.

R&D Includes – but is not limited to:

Activities of personnel who are obviously engaged in R&D. In addition, R&D activity includes:

- The provision of professional, technical, administrative or clerical support and/or assistance to personnel directly engaged in R&D
- Management of personnel who are either directly engaged in R&D or are providing professional, technical or clerical support to R&D staff
- Software development where the aim of the project is the systematic resolution of a scientific or technological uncertainty.
- Research work in the biological, physical and social sciences, and the humanities
- Social science research includes economic, cultural, educational, psychological and sociological research.
- Research work in engineering and the medical sciences
- R&D carried out as a participant in any unincorporated joint venture
- R&D projects performed on contract for other legal entities, such as businesses
- "Feedback R&D" directed at solving problems occurring beyond the original R&D phase, for example technical problems arising during initial production runs.

R&D in the Science Councils

- Any activity classified as R&D is characterised by originality; it should have investigation as a primary objective and should have the potential to produce results that are sufficiently general for humanity's stock of knowledge (theoretical and/or practical) to be recognisably increased.

Scope of survey

- The survey requests data performed IN-HOUSE by your organisation on the National territory of South Africa.
- Part five asks some questions on "out-sourced R&D"

R&D Excludes:

The following specific activities are excluded, except where they are used primarily for the support of, or as part of, R&D activities performed by your organisation:

- Scientific and technical information services
- Engineering and technical services
- General purpose or routine data collection
- Standardisation and routine testing
- Feasibility studies (except into R&D projects)
- Specialised routine medical care, for example routine pathology services
- The commercial, legal and administrative aspects of patenting, copyrighting or licensing activities
- Routine computer programming, systems work or software maintenance where there are no technological uncertainties to be resolved.

PART 1: GENERAL INFORMATION

1. **Science Council**

2. **Division (if applicable)**

3. **Total number of employees working for your organisation in the financial year surveyed** (average number on payroll including full time and temporary personnel)

4. **Did the Organization perform any IN-HOUSE R&D during 2003/4?**

- In-house R&D refers to R&D performed at this business on its own behalf or on behalf of others.
- Only R&D performed **on the national territory of South Africa** should be recorded.

(please tick)

Yes ☐ **Please proceed to Part 2: Question 5**

No ☐ **Please proceed to Part 5: Question 12 on Outsourced R&D**

If your organisation does *not* do any In-House and/or Outsourced R&D, please indicate and return the questionnaire as a NIL response.

☐

PART 2: R&D PERSONNEL

Please report for all personnel for whom the Organisation pays payroll tax.

Researchers

- Professionals engaged in the conception or creation of new knowledge, products, processes methods and systems and also in the management of the projects concerned.
- Managers and administrators engaged in the planning and management of the scientific and technical aspects of researcher's work also fall into this category. Their rank is usually equal or superior to that of persons directly employed as researchers and they are often former or part-time researchers.

Excluding

- Managers and directors concerned primarily with budgets and human resources, rather than project content.

Technicians directly supporting R&D

- Persons doing technical tasks in support of R&D, normally under the direction and supervision of a researcher.

Other personnel directly supporting R&D

- Skilled and unskilled crafts workers.
- Secretarial, administrative and clerical personnel working on, or directly associated with, R&D activity.
- Executives and directors concerned primarily with budgets and human resources, rather than project content.
- Personnel working in, or supporting, library and information services.

5. Please provide the Headcount of all R&D personnel and an estimate of Person Years of effort on R&D (or Full-Time Equivalents), according to the categories below.

Note: For the purpose of this survey, an employee can only work one person year per year. For example, a full time employee spending 40% of his/her time on R&D during half of the survey year would contribute 0.4 persons x 0.5 years = 0.2 person years to the R&D effort, even if his/her average time per week was, for example 60 hours. A part-time employee working 40% of a full time year doing only R&D would contribute 0.4 person years to the R&D effort.

Personnel Categories	Head-count		Head-count	Person Years on R&D (FTE)
	M	F	Total	
Researchers				
Technicians directly supporting R&D				
Other personnel directly supporting R&D				
TOTALS				

6. Provide or calculate (using question 5) the total labour cost of R&D for your Organisation.

Personnel Categories	Person Years on R&D (FTE) (A)	Average annual labour cost per person R'000 e.g record R3 million as 3000 (B)	Calculated labour cost of R&D (A x B)
Researchers			
Technicians directly supporting R&D			
Other personnel directly supporting R&D			
TOTAL LABOUR COST OF R&D (R' 000 Excluding VAT)			

(Total to be carried over to Q 7C)

PART 3: IN-HOUSE R&D EXPENDITURE

PLEASE REPORT ANY OUTSOURCED R&D IN PART 5

7. Compile expenditure on IN-HOUSE R&D during Financial Year 2003/4. Include expenditure funded from all sources: internal and external (contracts and grants) undertaken by the Organisation on its own behalf or for other parties.

CAPITAL EXPENDITURE ON R&D

- The full price of capital expenses must be reported in the year of purchase (Do not depreciate).
- If the asset has been/will be used for more than one activity, include only an estimate of the portion used for R&D.

Including - but not limited to:

- Expenditure on fixed assets used in the R&D projects of this dept/unit
- Acquisition of software, including fees, expected to be used for more than one year
- Purchase of databases expected to be used for more than one year
- Major repairs, improvements and modifications on land and building.

Excluding:

- Other repairs and maintenance expenses
- Depreciation provisions
- Proceeds from the sale of R&D assets.

		R'000 Excluding VAT
Vehicles, plant, machinery and equipment	A	
Land, buildings and other structures	B	

LABOUR COST OF R&D – TOTAL COST TO INSTITUTION

- If the costs have been incurred for more than one activity, include only an estimate of the portion used for R&D.

		R'000 Excluding VAT
Labour Costs (carried over from Question 6)	C	

OTHER CURRENT EXPENDITURE ON R&D

Including - but not limited to:

- Materials, fuels and other inputs
- Water electricity and other overhead expenses
- Rent, leasing and hiring expenses
- Repair and maintenance expenses
- Payments to outside organisations for use of specialised testing facilities
- Payments to outside organisations for analytical work, engineering or other specialised services in support of R&D projects carried out by this department/unit
- Commission/consultant expenses for research projects carried out by this department / unit
- Other R&D expenses and indirect costs.

Excluding:

- Contract R&D expenses where the research project is carried out elsewhere by others on behalf of this department
- Payments for purchases of technical know-how
- Payments for patent searches
- Depreciation provisions.

		R'000 Excluding VAT
Other Current Expenditure	D	

	R'000 Excluding VAT
TOTAL R&D EXPENDITURE (A + B + C + D)	

8. Please provide a breakdown of the total R&D expenditure (as reported in question 7) according to sources of funds.

- Sources refers to the original sources providing funds.
- Funds received from other intermediary sources that are funded from several sources should be reported under "Other domestic sources" as applicable.

Including - but not limited to:
Funding from grants, contracts, commissions, donations, etc.

	R'000 Excluding VAT					
Science Councils						
Own Funds (internally generated funds)						
Government						
National and provincial government						
Science Councils & Agency Funding (e.g. THRIP, Innovation Fund)						
TOTAL						
Business						
Business (domestic only)						
Higher Education						
Universities, Technikons, Colleges						
Domestic						
Other domestic sources						
Foreign						
All sources (all sources including foreign business)						

	R'000 Excluding VAT						
TOTAL R&D EXPENDITURE (to correspond with Question 7)							

PART 4: CATEGORIES OF R&D EXPENDITURE

9. Please specify the percentage of total IN-HOUSE R&D expenditure by type of R&D (as applicable).

Pure Basic Research

- Work undertaken primarily to acquire new knowledge of the underlying foundations of phenomena and observable facts, without a specific application in view.
- Analyses of properties, structures, and relationships with a view to formulating and testing hypotheses, theories or laws.
- The results of basic research are not generally sold but are usually published in scientific journals or circulated to interested colleagues.
- Work carried out without looking for long-term economic or social benefits other than the advancement of knowledge.

Percentage		

Strategic Basic Research

- Basic research directed into specific broad areas in expectation of useful discoveries.
- Basic research providing the broad base of knowledge necessary for the solution of recognised practical problems

Percentage		

Applied Research

- Original investigation to acquire new knowledge with a specific application in view.
- To determine the possible uses for the findings of basic research.
- To determine new methods or ways of achieving specific and pre-determined objectives.
- The results of applied research are intended primarily to be valid for a single or limited number of products, operations, methods, or systems.
- Applied research develops ideas into operational form.
- The knowledge or information derived from it is often patented but may also be kept secret.

Percentage		

Experimental Development

- Systematic work using existing knowledge gained from research and/or practical experience for the purpose of creating new or improved materials, products, processes or services, or improving substantially those already produced or installed.

Percentage		

TOTAL	1	0	0

10. Please classify your R&D activities according to the most appropriate Research Fields (RF) code (see Codes book) and indicate the percentage of R&D expenditure associated with each RF.

- The RF Codes are based on recognised academic disciplines and emerging areas of study.
- The classification of R&D using RF codes is a generally accepted international convention.
- More than one RF code may be provided, together with an associated percentage split.

RF Codes						Percentage		
RF								
RF								
RF								
RF								
RF								

RF Codes						Percentage	
RF							
RF							
RF							
RF							
RF							

TOTAL	1	0	0

11. Please classify your R&D expenditure according to the most appropriate group code of Socio-Economic Objective (SEO) (see Codes book) and indicate the percentage of R&D expenditure associated with each SEO.

- The SEO classification provides an indication of the sector of the national economy, which will be the main beneficiary of the R&D you are practising.
- The classification of R&D using SEO codes is a generally accepted international convention.
- More than one SEO code may be provided, together with an associated percentage split.

	SEO Codes	Percentage	SEO Codes	Percentage
S				
S				
S				
S				
S				
TOTAL		**1 0 0**		

PART 5: R&D OUTSOURCED / CONTRACTED OUT

Outsourced R&D refers to:

- Extramural expenditures paid or committed to another unit, organisation or sector for the performance of R&D
- This includes acquisition of R&D performed by other units and grants given to others for performing R&D

12. Please state the amount spent on R&D outsourced outside South Africa.

R'000 (Excluding VAT)

13. Please state the amount spent on R&D outsourced inside South Africa.

R'000 (Excluding VAT)

14. If applicable, it would assist our survey if you could advise of some/all organisations that performed your Outsourced R&D in South Africa and possibly indicate your approximate expenditure at each organisation.

Outsourced to:	Approximate Value R'000 (Excluding VAT)

THANK YOU FOR YOUR TIME AND EFFORT