



Research & Development survey 2008 for CRIs

For Help and Information:

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Are the address details above correct? If not, use the boxes below to correct any errors.

Contact name		0001
Organisation name		0002
PO Box number or street number and name		0003
Suburb		0004
City		0005

Please complete, sign and return this questionnaire in the envelope supplied.
Return date:

Purpose of this survey

The purpose of this survey is to collect data which will be used to produce summarised statistics of research and development activities for release to Government, business and other users in the community. The statistics will be used in the development of science policy areas.

Compulsory requirement

The taking of this survey has been approved by the Minister of Statistics and the return of this questionnaire, duly filled in and signed, is a compulsory requirement under the Statistics Act 1975.

Confidentiality of information supplied

Only people authorised by the Statistics Act 1975 are allowed to see your individual information, and they must use it only for statistical purposes. Your information will be combined with similar information to prepare summary statistics.

This is a joint collection by Statistics New Zealand and the Ministry of Research, Science & Technology under section 9 of the Statistics Act 1975. For detailed confidentiality information read page 15.

As Government Statistician I thank you for completing this survey. Your information contributes to statistics available for business decision-making. To find out how Statistics New Zealand can help your business grow, contact our information centre on 0508 525 525.



Geoff Bascand
Government Statistician

Instructions

1 How to answer:

- This form will be scanned and recognised by electronic equipment. Therefore please:
 - mark answers like this
 - print answers in **CAPITAL** letters and
 - keep each letter or number **within** the spaces provided
 - for example **J O N E S** or
- Please use a blue or black pen.
- Where actual figures are not available, please give careful estimates.
- Where there is no response, leave blank unless instructed to write **0**
- Supply whole dollar values only.
- Supply GST EXCLUSIVE values if possible.

2 Only include information for the business named on the front page. Do not provide consolidated data.

Don't include:

- subsidiary or associated businesses
- accounting divisions that operate entirely outside New Zealand

3 Please keep a record of the time it takes you to complete this questionnaire. You are asked to record this at the end of the questionnaire.

Include:

- the time spent reading the instructions, working on the questions and obtaining information
- the time spent by all employees in collecting and providing this information



Financial year

4 If possible, in the questions that follow, please provide information for the last financial year.

Note:

- if your balance date is between 1 Jan - 30 Sep, use financial data for the year ending 2008
- if your balance date is between 1 Oct - 31 Dec, use financial data for the year ending 2007

What is the balance date of the financial accounts which you will use for this questionnaire?

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	0401
Day	Month	Year						

5 Is the financial year information for a 12 month period?

1 yes → go to **6**

0501

0502

2 no → the period covered is to

0500

Day Month Year to Day Month Year

Please mark a reason why it is not a 12 month period.

0503

- 1 new business
- 2 ceased during the year
- 3 other → please specify:

0504

Definition of R&D

6 What is Research and Development?

Research and experimental development comprises creative work undertaken on a systematic basis in order to increase the stock of knowledge. Any activity classified as R&D is characterised by originality. Investigation is a primary objective.

CRI R&D:

All activities which involve the creation of new scientific knowledge or the development of existing scientific knowledge.

Include:

- All FRST, HRC and Marsden fund work
- Supporting and maintaining research databases
- Developing research skill-bases with a national benefit (eg food safety, public safety and public health)
- Technical and “commercial” work which has strong research or development component (eg TBG and other TechnZ schemes)

Don't include:

- Contract work which simply involves the use of standard methods and equipment (eg chemical analysis, mechanical testing, X-ray analysis)
- Contract work which simply involves the application of a standard test (eg British standard, ANSI, DOT etc)

Further definitions of R&D are provided on page 14.

R&D carried out

7 Did the organisation named on the front page carry out any R&D in 2007/2008?

0700

Include: Subcontractors working on R&D projects carried out by this organisation

Don't include: R&D projects funded by this organisation, but totally carried out by other organisations, or a subsidiary of this organisation

1 yes → go to **8**

2 no → go to **54**



Personnel by occupation

8 Please show both how many personnel were working on R&D as at 30 June 2008, and show the number of full-time equivalents working on R&D during the year ended 30 June 2008.

Include:

- Contract staff on the payroll
- Full-time and part-time employees
- Permanent, temporary and casual employees

Don't include:

- Postgraduate research students not on the payroll
- Self-employed persons, such as contractors, not on the payroll

Full-Time Equivalent (FTE)

R&D may be carried out by persons who work solely on R&D projects or by persons who devote only part of their time to R&D, and the balance to other activities; such as testing, quality control and production engineering. To arrive at the total effort devoted to R&D in terms of hours worked, it is necessary to estimate FTEs of these people working part-time in R&D.

FTE = Number of persons who work solely on R&D projects + the estimate of time spent by persons working part-time on R&D.

Example calculation: If out of five scientists engaged in R&D work, one works solely on R&D projects and the remaining four devote only one quarter of their working time, the FTE equals $1 + 1/4 + 1/4 + 1/4 + 1/4 = 2$ scientists.

Personnel	Headcount as at 30 June 2008	Full-time equivalents during the year ended 30 June 2008
<p>Researchers Staff engaged in the conception and / or creation of new knowledge / products. Personnel involved in the planning or management of scientific and technical aspects of R&D projects, and software developers.</p>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
<p>Technicians Staff engaged in technical tasks in support of R&D, normally under the direction and supervision of a researcher.</p>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
<p>Other supporting staff Include: Administrative and managerial staff working on, or directly associated with, R&D activity. Don't include: Staff outside the R&D performing unit providing indirect support. For example:</p> <ul style="list-style-type: none"> • Central finance or personnel services • Central support services, eg information services and cleaning 	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
Total	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	This is total A	This is total B
	0804	0808



Personnel by qualification

9 Please show both the highest qualification levels of personnel working on R&D as at 30 June 2008, and show the corresponding number of full-time equivalents working on R&D tasks during the year ended 30 June 2008.

Note: The total headcount should agree with total A. The total number of full-time equivalents should agree with total B.

Qualification	Headcount as at 30 June 2008	Full-time equivalents during the year ended 30 June 2008
PhD	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	and <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	0901	0906
Bachelor degrees or equivalent, and post graduate qualifications other than PhD For example: Masters degrees and post graduate diplomas.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	and <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	0902	0907
Technical and Trade qualifications For example: NZ Certificate of Engineering or Science and NZ Trade Certificate.	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	and <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	0903	0908
Other qualifications	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	and <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	0904	0909
Total	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	and <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
	0905	0910
	Headcount to agree with total A	FTE to agree with total B



Current and capital expenditure

10 Please allocate the total expenditure on R&D carried out by this organisation during the financial year in questions **11** to **16**.

Don't include: R&D funded by this organisation, but carried out by other organisations. See **54**

Note:

- If the figures are not specified in your accounts please give a careful estimate
- Subcontractors are included in **13**
- Include a proportion of all overheads in **13**. If necessary, estimate from your total overheads in proportion to the full-time equivalents engaged in R&D

11 Wages and salaries for full-time equivalent personnel

Include: Other employment related costs (eg overtime, ACC and fringe benefits)

Don't include:

- Redundancy and severance payments (to be included in **12**)
- Wages and salaries of personnel indirectly supporting R&D

\$

1101

12 Redundancy and severance payments

\$

1201

13 Other current R&D expenditure

Include:

- All consumables and overheads incurred by direct and indirect support activities (eg materials, rent, and travel)
- Wages and salaries of personnel indirectly supporting R&D. Include only that part of their wages and salaries that is attributable to the indirect support of R&D (eg central finance, personnel services and cleaning)
- On site consultants and contact staff costs
- Operating leasing

Don't include:

- Depreciation
- Wages and salaries etc (included in **11** above)

\$

1301

14 Capital expenditure - land and buildings.

Note: If the land and buildings purchased are also used for production, please include only the portion used for R&D.

\$

1401

15 Capital expenditure - plant, equipment, machinery, vehicles, capitalised software and other assets

Note: If the assets purchased are also used for production, please include only the portion used for R&D.

\$

1501

16 Total expenditure

\$

This is total C

1601



Source of funds for R&D

17 What were the sources of funds for the R&D expenditure reported in total C?

Note:

- Sources should be the original sources providing funds
- Funds received as levies or subscription fees from member associations, or associated industry organisations should be treated as payments from other organisations, and not included in **18**

18 Own funds

Include:

- Equity, reserves, borrowing and retained earnings
- Funds from NZ organisations in the same group

\$ or %

1801

1802

19 NZ private sector

Include:

- Private and publicly listed organisations
- State-owned enterprises
- Producer boards
- Research associations

\$ or %

1901

1902

20 NZ government funding agencies

Include:

- Foundation for Research, Science and Technology (FRST) **For example:** Tech NZ and NERF
- Royal Society of New Zealand (RSNZ)
- Health Research Council (HRC)

\$ or %

2001

2002

21 Other NZ government departments, ministries, crown entities or crown-owned companies

For example: Ministry for the Environment and AgResearch.

Don't include: State-owned enterprises (included in **19**)

\$ or %

2101

2102

22 NZ local government sector

For example: District councils, city councils and regional councils.

\$ or %

2201

2202

23 NZ Tertiary education sector

For example: Universities and polytechnics.

\$ or %

2301

2302

24 Overseas funds

Include: Funds from overseas organisations in the same group.

\$ or %

2401

2402

25 Other funding sources

For example: Lottery Board, Cancer society and charities.

\$ or %

2501

2502

Please specify:

2503

26 Total R&D funds

To agree with total C

\$ or 1 0 0 %

2601



Purpose of research

- 27** Which of the following sectors benefit from the R&D projects carried out? Please allocate to each of the following sectors the relevant percentage of R&D expenditure in the financial year.

Note: This should relate to the sector that will ultimately benefit from the results, not the nature of the R&D itself. For example, software specifically developed for a food processing factory should be classified to manufacturing.

Primary industries

- 28** Plant production and plant primary products

Includes: Forestry; horticultural and industrial crops; grains and oil seeds; harvesting and packaging of plant products; environmentally sustainable plant production

%

2801

- 29** Animal production and animal primary products

Includes: Fisheries (aquaculture and wild caught); livestock raising; pasture, browse and fodder crops; primary animal products (including raw wool and unprocessed or minimally processed fish and milk); environmentally sustainable animal production

%

2901

- 30** Mineral resources (excluding energy)

Includes: Mineral exploration; primary mining and extraction of minerals; first-stage treatment of ores and minerals; environmentally sustainable mineral-resource activities

%

3001

Industrial and infrastructure development

- 31** Energy

Includes: Energy exploration; mining and extraction of minerals; preparation and production of energy; energy transformation; renewable energy; storage, distribution and supply; energy conservation and efficiency; environmentally sustainable energy activities

%

3101

- 32** Manufacturing

Includes: Processed food products and beverages (including dairy products); wood and paper products; leather, fibre and textiles; chemical products; pharmaceuticals; ceramics, glass; metal products; machinery and equipment; electronic and communication equipment; environmentally sustainable manufacturing

%

3201

- 33** Construction

Includes: Construction materials, planning, design and processes; building management and services; environmentally sustainable construction

%

3301

- 34** Transport

Includes: Land, water and aerospace transport; environmentally sustainable transport

%

3401

- 35** Information and communication services

Includes: Communication networks and services; computer software and services; information and media services; management of environmental impacts from information and communication services

%

3501

- 36** Commercial services and Tourism

Includes: Financial services; property and business support services and trade; tourism, water and waste services; environmentally sustainable commercial services and tourism

%

3601



Society

37	Health <i>Includes:</i> Clinical health (organs, diseases and abnormal conditions); health and support services; public health	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	3701
38	Education and training <i>Includes:</i> Learner and learning; teaching and instruction; curriculum; school / institution; education and training systems	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	3801
39	Law, politics and community services <i>Includes:</i> Community service; government and politics; international relations; justice and law; work and institutional development	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	3901
40	Cultural understanding <i>Includes:</i> Arts and leisure; communication, heritage, religion and ethics, understanding past societies	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4001
Other purposes			
41	Economic framework <i>Includes:</i> Macroeconomics and microeconomics; international trade; management and productivity, measurement standards and calibration services	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4101
42	Environment <i>Includes:</i> Air, atmosphere, weather, climate change; biosecurity; ecosystems; natural resource evaluation; policy, legislation and standards; biodiversity, land and water management; natural hazards; environmental rehabilitation; conservation areas; soils	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4201
43	Defence <i>Includes:</i> Navy or maritime; army or land, air force or aeronautics; logistics; intelligence; national security (non-military); emerging defence technologies	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4301
44	Other	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> %	4401
45	Total	1 0 0 %	



Definition of biotechnology

46 What is biotechnology?

The OECD defines biotechnology as the application of science and technology to living organisms as well as parts, products and models thereof, to alter living or non-living materials for the production of knowledge, goods and services.

The following is an OECD indicative guide to biotechnology:

- **DNA - the coding:** Geonomics, pharmaco-genetics, gene probes, DNA sequencing / synthesis / amplification, genetic modification.
- **Proteins and Molecules - the functional blocks:** Protein / peptide sequencing / synthesis, lipid / protein glycoengineering, proteomics, hormones and growth factors, cell receptors / signalling / pheromones.
- **Cell and tissue culture and engineering:** Cell / tissue culture, tissue engineering, hybridisation, cellular fusion, vaccine / immune stimulants, embryo manipulation.
- **Process biotechnologies:** Bioreactors, fermentation, bioprocessing, bioleaching, bio-pulping, bio-bleaching, biodesulphurisation, bioremediation and biofiltration.
- **Sub-cellular organisms:** Gene therapy, viral vectors.
- **Other:** Bioinformatics, nanobiotechnology etc.

47 Did the R&D reported in total C include any biotechnology?

- ₁ yes → please provide an estimate of the share of R&D expenditure that is attributable to biotechnology.
- ₂ no

%

4700

4701



Type of research carried out

48 Which of the following types of research were carried out?
Please allocate to each type the relevant percentage of R&D expenditure in the financial year.

49 **Pure basic research**
Research to pursue new knowledge without any particular application in view. %
4901

50 **Targeted basic research**
Research to produce a broad base of new knowledge likely to underpin solutions to current or future applications. %
5001

51 **Applied research**

- New work undertaken to acquire knowledge for a specific practical aim
- Work to determine possible uses of basic research
- Work to determine new ways of achieving a predetermined objective

%
5101

52 **Experimental development**
Systematic work undertaken using existing knowledge for the purpose of creating new or improved materials, products, processes and / or services. %
5201

53 **Total** %
1 0 0 %

SAMPLE



External R&D funded during the financial year

54 In the last financial year, did this organisation fund any R&D carried out at other organisations?

Include: Funding to a subsidiary of this organisation

Don't include: Subcontractors working on R&D projects carried out by this organisation (Subcontractors are included in **13**)

₁ yes → go to **55**

₂ no → go to **64**

5401

55 If this organisation paid for R&D but did not do the work itself, where did this organisation spend the money?

56 NZ private sector

Include:

- Private and publicly listed organisations
- State-owned enterprises
- Producer boards
- Research associations

\$

5601

57 NZ central government sector

For example: Departments, ministries and crown entities.

Don't include:

- Crown research institutes
- State-owned enterprises

\$

5701

58 Crown research institutes

For example: NIWA, Landcare Research, Crop & Food Research and AgResearch.

\$

5801

59 NZ local government sector

For example: District councils, city councils and regional councils.

\$

5901

60 NZ tertiary education sector

For example: Universities and polytechnics.

\$

6001

61 Overseas organisations

Include: Funds overseas organisations in the same group.

\$

6101

62 Other (please specify):

\$

6202

6201

63 Total

Do not include this amount in Total C

\$

6301



Other Details

64 The figures given in this questionnaire:

₁ Exclude GST

₂ Include GST

7000

65 How long did it take you to complete this questionnaire?

Include:

- The time spent reading the instructions, working on the questions and obtaining information
- The time spent by all employees in collecting and providing this information

hrs mins

7101

66 Please make any comments that would help Statistics New Zealand to interpret the information that you have given

Large empty text box for comments.

7201

67 The main results of this survey are expected to be released in April 2009. If you would like a link to the results sent to the email address in question **68**, please mark below.

yes, I would like to be emailed the main results of this survey

7301

68 Who should we contact if we have any queries about the information you have given? If necessary, please correct errors or provide details in the white boxes below each item.

Name
↓

7401

Position
↓

7402

Email
↓

7403

Phone →

7404

Fax →

7405

Cellphone →

7406

I declare that this questionnaire has been completed to the best of my knowledge.

Signature

Date
Day Month Year

7407

Office use: **A B C**

07/2008



Further definitions of R&D

R&D includes:

- Design, construction and operation of prototypes where the main objective is technical testing or to make further improvements
- Construction and operation of pilot plants not operated or intended to be operated as commercial units
- Research into, and original development (or substantial modification) of computer software such as new programming languages and new operating systems
- “Feedback R&D” directed at solving problems occurring beyond the R&D phase, for example technical problems arising during the initial production runs
- Research work in the biological, physical and social sciences, and the humanities
- Social science research includes economic, cultural, educational and sociological research

R&D excludes (except where used primarily for the support of, or as part of, R&D projects):

- General purpose or routine data collection
- Policy related studies, management studies, efficiency studies
- Routine quality control and testing
- Pre-production activities such as demonstration of commercial viability, tooling up and trial production runs
- Prospecting, exploring or drilling for minerals, petroleum or natural gas
- Cosmetic modifications or style changes to existing products
- Scientific and technical information services
- Routine computer programming, systems maintenance or software development and application
- Operational research and mathematical or statistical analysis
- Commercial, legal and administrative aspects of patenting, copyrighting or licensing activities
- Activities associated with standards compliance
- Specialised routine medical care, e.g. routine pathology services

Where does R&D end?

R&D ends when work is no longer experimental and pre-production begins.

If the primary objective is to make further technical improvements, then the work comes within the definition of R&D.

However, if the material, product etc. is substantially developed and the primary objective is to develop markets (i.e. market research), to do pre-production planning or to get production or control systems running smoothly, then the work is no longer R&D.

Borderline between research and studies

Research activities are usually performed in scientific units. Their aim is to produce innovative results which can be generalised or be generally utilised. The activities are often connected to other research, and financed from research funds; the results have a considerable novelty value and they are widely published.

Studies involve collecting, processing and analysing data for decision making and planning. The studies are often made by enterprises as an integral part of planning activities. The results are mainly descriptive, they are not widely published and they cannot easily be generalised or utilised for any other purpose. Income and expenditure on studies should not be included in this questionnaire.



Confidentiality of information supplied

This is a joint collection by Statistics New Zealand and the Ministry of Research, Science & Technology under section 9 of the Statistics Act 1975. You have the right to object in writing to the Government Statistician, to the release of your individual information to the Ministry of Research, Science & Technology. Any data released to the Ministry of Research, Science and Technology continues to be protected by the Statistics Act (section 37) and must only be used for statistical purposes. It must not be related in any way which identifies your individual information.

Thank you for your time and effort.

The main results of all our surveys are available at www.stats.govt.nz

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