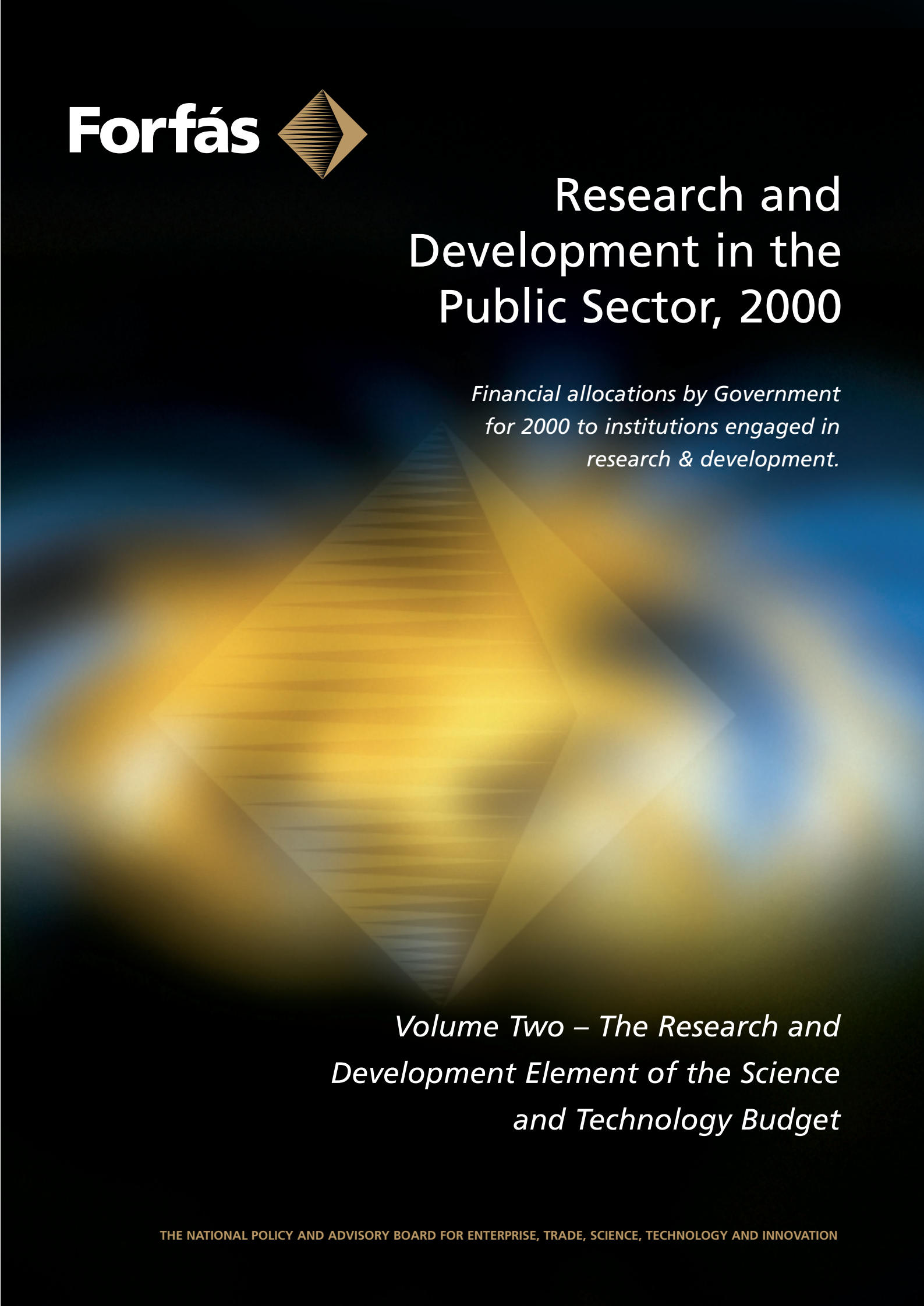
Forfás

# Research and Development in the Public Sector, 2000

*Financial allocations by Government for 2000 to institutions engaged in research & development.*



## *Volume Two – The Research and Development Element of the Science and Technology Budget*

THE NATIONAL POLICY AND ADVISORY BOARD FOR ENTERPRISE, TRADE, SCIENCE, TECHNOLOGY AND INNOVATION

# Functions of Forfás

Is é Forfás an bord náisiúnta um polasaí agus comhairle le haghaidh fiontraíochta, trádála, eolaíochta, teicneolaíochta agus nuála. Is é an comhlacht é a bhfuil comhactaí dlíthiúla an stáit maidir le cur-chun-cinn tionscail agus forbairt teicneolaíochta dílsithe ann. Is é an comhlacht é freisin trína dciomnaítear cumhachtaí ar Fhiontraíocht Éireann le tionscail dúchais a chur chus cinn agus ar ghníomhaireacht Forbartha Tionscail na hÉireann (GFT Éireann) le hinfheistíocht isteach sa tir a chur chun tosaight. Is iad feighmeanna Fhorfáis:

- *comhairle a chur ar an Aire ó thaobh cúrsaí a bhaineann le forbairt tionscail sa Stát*
- *comhairle maidir le forbairt agus comhordú polasaithe a chur ar fáil d'Fhiontraíocht Éireann, d'GFT Éireann agus d'aon fhoras eile dá leithéid (a bunaíodh go reachtúil) a d'fhéadfadh an tAire a ainmniú trí ordú*
- *forbairt na tionsclaíochta, na teicneolaíochta, na margaíochta agus acmhainní daonna a spreagadh sa Stát*
- *bunú agus forbairt gnóthas tionsclaíoch ón iasacht a spreagadh sa Stát, agus*
- *Fiontraíocht Éireann agus GFT Éireann a chomhairliú agus a chomhordú ó thaobh a gcuid feidhmeanna.*

Forfás is the national policy and advisory board for enterprise, trade, science, technology and innovation. It is the body in which the State's legal powers for industrial promotion and technology development have been vested. It is also the body through which powers are delegated to Enterprise Ireland for the promotion of indigenous industry and to IDA Ireland for the promotion of inward investment. The broad functions of Forfás are to:

- *advise the Minister on matters relating to the development of industry in the State*
- *to advise on the development and co-ordination of policy for Enterprise Ireland, IDA Ireland and such other bodies (established by or under statute) as the Minister may by order designate*
- *encourage the development of industry, technology, marketing and human resources in the State*
- *encourage the establishment and development in the State of industrial undertakings from outside the State, and*
- *advise and co-ordinate Enterprise Ireland and IDA Ireland in relation to their functions.*

# Board Members

| | |
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## *Volume Two – The Research and Development Element of the Science and Technology Budget*

# Contents

# Executive Summary

For the first time this year's 'State Expenditure on Science and Technology' includes a separate volume on research and development. Altogether R&D represents about a quarter of public science and technology expenditure, and the 2000 budget allocation amounts to £232.9m (€295.7m). This represents a very significant increase over the actual expenditure in 1999 of £147.7m (€187.5m).

The levels of R&D performed in the various Government Departments and their agencies is not the same as the total amounts they fund. An individual Department or its agencies might perform little or no R&D themselves while providing funding to other performers in either the public or private sectors.

In terms of public funding, the Departments and their agencies are allocating £232.9m (€295.7m) to R&D in 2000, up from £147.7m (€187.5m) in 1999. The major increases in allocations relate to additional allocations by the Department of Education and Science via the Higher Education Authority (£31m (€39.4m)) for research in the third level institutions, to the new Technology Foresight Fund (£25m, €31.7m) introduced by the Department of Enterprise, Trade and Employment (DETE) to establish Ireland as a leading research player in biotechnology and information and communications technologies, and to extra funding by DETE via Enterprise Ireland (£14m (€17.8m)) for R&D grants to industry.

The allocation for performance of R&D in 2000 is £53.8m (€68.3m), up from £50.2m (€63.7m) last year. This figure includes £11.4m (€14.5m) which is earned income so that the public funds invested in R&D performed in the public sector amount to £42.4m (€53.8m) in 2000.

# Commentary

For the first time this year's 'State Expenditure on Science and Technology' includes a separate volume on research and development. Altogether R&D represents about a quarter of public science and technology expenditure, and the 2000 budget allocation amounts to £232.9m (€295.7m). This represents a very significant increase over the actual expenditure in 1999 of £147.7m (€187.5m). This additional investment alone justifies the need for a separate analysis of the funding and performance of R&D within the state sector.

## Public Funding of Research and Development

On the expenditure side, £85.2m (€108.2m) extra has been allocated to R&D funding by the State in 2000. This represents an increase of 57.7% over 1999. The major increases relate to additional allocations by the Department of Education and Science via the Higher Education Authority (£31m (€39.4m)) for research in the third level institutions, to the new Technology Foresight Fund (£25m, €31.7m) introduced by the Department of Enterprise, Trade and Employment (DETE) to establish Ireland as a leading research player in biotechnology and information and communications technologies, and to extra funding by DETE via Enterprise Ireland (£14m (€17.8m)) for R&D grants to industry.

These additional allocations are to be welcomed, particularly the increased support for strategic research in the third level sector, an area where Ireland has long experienced significant under-investment compared to other developed countries. It should be noted, however, that the need to put in place a new organisation, Science Foundation Ireland, and completely new mechanisms to ensure that expenditures under the new Foresight Fund (over £500m (€634.9m) for the period 2000 – 2006) are distributed in line with best international practice for the funding of research will mean that not all of the £25m (€31.7m) allocated for 2000 will be spent by the end of the year.

Another welcome trend is the decreasing reliance, in percentage terms, on EU structural funds to support R&D in Ireland. Almost all of the increased allocations in 2000 are from exchequer sources, with the result that exchequer funds account for 68.0% of total allocations this year compared with 62.4% in 1999. The EU CSF (Community Support Framework) contribution is still significant in absolute terms and indeed is expected to increase substantially from £56m (€71.1m) in 1999 to £75m (€95.2m) in 2000, although these are provisional estimates by Departments which will only be confirmed when the various Operational Programmes are finalised with the European Commission.

## Performance of R&D in the Government Sector

Irish public sector research performance is dominated by the agriculture and food sectors, with Teagasc and the research laboratories of the Department of Agriculture and Food accounting for 55% of the total expenditure of about £54m (€68.6m). Seven organisations spending over £1m (€1.27m) per year on the performance of R&D account for 30% of the balance, with the Economic and Social Research Institute (£3.8m, €4.8m) being the largest of them. Research performance in the only industry focused organisation, Enterprise Ireland, at £1.8m (€2.3m) accounts for about 3% of the total.

The two major productive sector Government Departments – Agriculture and Food, and Enterprise, Trade and Employment – have adopted different approaches to the development of their respective sectors. For agriculture and food there is a policy to support the sector by significant levels of research performed in public sector institutes. For the manufacturing and service industries supported by the Department of Enterprise, Trade and Employment there is a policy to encourage and fund the performance of R&D within the individual firm; at the same time, considerable efforts have been devoted to strengthening the third level colleges' performance of industry-relevant research and to improving interaction and collaboration between the business sector and the colleges.

This report shows that Ireland relies less on research in public research institutes than many other countries. This is reflected in the overall balance of research performance in Ireland. Taking Finland as a comparison, Table 1 shows the different composition of total research performance between the two countries. The comparison is useful because Finland also has a national strategy to develop a high technology business sector based on the generation and application of new knowledge.

### Table 1

| Performers (%) | Ireland | Finland |
|---|---|---|
| Business Sector | 74 | 68 |
| Higher Education Sector | 19 | 19 |
| Public Sector | 7 | 13 |
| **Total** | **100** | **100** |

The level of R&D performed in the business sector in Ireland is still below the EU average, at 1.02% of GDP. Other economies which also rely on high technology industries have a much higher level – Sweden 2.9%, Japan and Korea 2.1%, US and Finland 2.0%. Much of the innovation underlying the performance of multinational enterprises located here is based on research and development performed elsewhere. It could be argued, therefore, that Ireland is not generating the level of innovation appropriate to its industrial structure.

This year the Department of Enterprise, Trade and Employment put in place the most significant development ever in the history of support for science and technology. This was the establishment of Science Foundation Ireland and the allocation of over £500m (€634.9m) to it to fund research in niche areas of biotechnology and information and communications technologies.

The strategic rationale behind this initiative is the need to stimulate a greater level of top class research in the economy in support of high-technology sectors and to ensure that a sufficient supply of good researchers become available to drive a more sophisticated research performance in the business sector. This new investment, together with complementary initiatives from the Department of Education and Science, will contribute to a more balanced national research portfolio, where research performed in the business sector is supported by a significant and high quality research effort in the wider public sector, including the third level colleges.

Ireland is now committed to an industrial strategy heavily dependent on high technology industries. Amongst these can be included sectors such as pharmaceuticals, which have a history of over twenty years experience of manufacturing in Ireland. The rapid increases in living standards in recent years is continuing to make Ireland less competitive as a location for basic manufacturing activities. The emphasis in industrial policy is shifting to higher value-added activities, to industries based on the exploitation of new knowledge and brain-power. Ireland's relatively low performance in R&D in all sectors of the economy – business, third level colleges and public research institutes – is a cause for some concern in this regard. There is good reason to expect that recent research initiatives will lead towards a more balanced national research strategy.

# 1 Introduction

The role of research has become increasingly relevant in modern society where the complexity and technology-content of most activities offers significant opportunities for innovation based solutions to complex problems. The R&D element of the government's STI expenditure is important because it is the most discretionary component when compared to other Government expenditures in support of regulatory and statutory functions.

Research and development (R&D) in all countries is performed in three distinct sectors of the economy – the business sector, the universities and technological institutes of the third level sector, and the government sector. The State both funds R&D activities performed in all three sectors and also arranges for R&D to be performed within the state sector in order to promote its own strategic objectives. This section examines both performance and funding of R&D by the State.

# 2 Funding of R&D by the State

Table 2 shows the Government funding of R&D, which can be performed either in the Government sector itself (as discussed in the previous sections), in the business sector or in third level education colleges. The total allocation is £232.9m (€295.7m), up from £147.7m (€187.5m) in 1999 (an increase of 57.7%).

**Table 2:** *Public Funding of Research and Development*

| | | 1999 | | | 2000 | | |
|---|---|---|---|---|---|---|---|
| **Funding Dept./Agency** | **Allocating Organisation** | **Exchequer £'000** | **CSF £'000** | **Public Funding £'000** | **Exchequer £'000** | **CSF £'000** | **Public Funding £'000** |
| Enterprise, Trade | Enterprise Ireland | 2,775 | 20,081 | 22,856 | 5,320 | 31,290 | 36,610 |
| & Employment | Forfás | | | | 25,000 | | 25,000 |
| | PAT's | 1,928 | 5,787 | 7,715 | 3,028 | 7,533 | 10,561 |
| | Higher Education Authority | 1,791 | 5,374 | 7,165 | 1,900 | 5,700 | 7,600 |
| | Shannon Development | 1,403 | 4,008 | 5,411 | 1,560 | 4,000 | 5,560 |
| | IDA Ireland | 42 | 3,878 | 3,920 | 50 | 4,000 | 4,050 |
| | NMRC | 684 | 2,052 | 2,736 | 659 | 1,978 | 2,637 |
| | FÁS | 567 | 599 | 1,166 | 640 | 494 | 1,134 |
| | Údarás na Gaeltachta | | 766 | 766 | | 800 | 800 |
| | Dept. of Enterprise, T&E | 149 | 375 | 524 | 21 | 375 | 396 |
| | Innovation Centre | 162 | 83 | 245 | 129 | 71 | 200 |
| | ESRI | 200 | | 200 | 58 | | 58 |
| | DIAS | 5 | 18 | 23 | 12 | 28 | 40 |
| | NMAC | 19 | 57 | 76 | | | |
| **Sub-total** | | **9,725** | **43,079** | **52,803** | **38,377** | **56,269** | **94,645** |

## Table 2: *Public Funding of Research and Development*

| Funding Dept./Agency | Allocating Organisation | 1999 Exchequer £'000 | 1999 CSF £'000 | 1999 Public Funding £'000 | 2000 Exchequer £'000 | 2000 CSF £'000 | 2000 Public Funding £'000 |
|---|---|---|---|---|---|---|---|
| Education & Science | Higher Education Authority | 23,436 | 2,089 | 25,525 | 56,873 | | 56,873 |
| | Education & Science | 19,288 | 47 | 19,335 | 8,204 | 8,570 | 16,774 |
| | DIAS | 1,256 | | 1,256 | 1,285 | | 1,285 |
| | ESRI | 76 | | 76 | 97 | | 97 |
| **Sub-total** | | **44,056** | **2,136** | **46,192** | **66,459** | **8,570** | **75,029** |
| Agriculture & Food | Teagasc | 14,040 | 5,064 | 19,104 | 17,761 | 2,509 | 20,270 |
| | Higher Education Authority | 900 | 2,702 | 3,602 | 1,148 | 3,445 | 4,593 |
| | Department of Agri & Food | 4,214 | 179 | 4,393 | 4,154 | 238 | 4,392 |
| | Enterprise Ireland | 5 | 14 | 19 | | | |
| | ESRI | 11 | | 11 | | | |
| **Sub-total** | | **19,170** | **7,959** | **27,129** | **23,063** | **6,192** | **29,255** |
| Marine & Natural Resources | COFORD | 73 | 787 | 860 | 273 | 554 | 827 |
| | Marine Institute | 995 | 346 | 1,341 | 164 | 496 | 660 |
| | Higher Education Authority | 107 | 322 | 429 | 156 | 470 | 626 |
| | Marine & Natural Resources | 436 | | 436 | 396 | | 396 |
| | Enterprise Ireland | 64 | 193 | 257 | 70 | 131 | 201 |
| | Teagasc | 25 | 75 | 100 | 16 | 47 | 63 |
| | DIAS | 10 | 28 | 38 | 28 | 10 | 38 |
| | ESRI | 10 | | 10 | 9 | | 9 |
| **Sub-total** | | **1,720** | **1,751** | **3,471** | **1,112** | **1,708** | **2,820** |
| Health & Children | Health Research Board | 5,512 | | 5,512 | 9,152 | | 9,152 |
| | Health & Children | 553 | | 553 | 634 | | 634 |
| | ESRI | 334 | | 334 | 398 | | 398 |
| **Sub-total** | | **6,399** | | **6,399** | **10,184** | | **10,184** |
| Environment & Local Government | Environmental Protection Agency | 608 | 362 | 970 | 589 | 650 | 1,239 |
| | Higher Education Authority | | 219 | 219 | | 1,200 | 1,200 |
| | National Roads Authority | 534 | | 534 | 570 | | 570 |
| | Environment & Local Gov | 186 | | 186 | 173 | | 173 |
| | ESRI | 11 | | 11 | 165 | | 165 |
| | Teagasc | | 7 | 7 | | 50 | 50 |
| | Met Éireann | 10 | | 10 | 20 | | 20 |
| **Sub-total** | | **1,349** | **588** | **1,937** | **1,518** | **1,900** | **3,418** |

## Table 2: *Public Funding of Research and Development*

| Funding Dept./Agency | Allocating Organisation | 1999 Exchequer £'000 | 1999 CSF £'000 | 1999 Public Funding £'000 | 2000 Exchequer £'000 | 2000 CSF £'000 | 2000 Public Funding £'000 |
|---|---|---|---|---|---|---|---|
| Arts, Heritage, | Údarás na Gaeltachta | 1,352 | | 1,352 | 1,250 | | 1,250 |
| Gaeltacht & the | Dept. of Arts, Heritage, etc | 892 | | 892 | 1,150 | | 1,150 |
| Islands | Natural History Museum | 169 | | 169 | 169 | | 169 |
| **Sub-total** | | **2,413** | | **2,413** | **2,569** | | **2,569** |
| Public Enterprise | Met Éireann | 688 | | 688 | 844 | | 844 |
| | R.P.I.I. | 271 | | 271 | 268 | | 268 |
| **Sub-total** | | **959** | | **959** | **1,112** | | **1,112** |
| Social, Community | Social, Community etc | 3,632 | | 3,632 | 10,844 | | 10,844 |
| And Family Affairs | ESRI | 81 | | 81 | 52 | | 52 |
| **Sub-total** | | **3,713** | | **3,713** | **10,896** | | **10,896** |
| Finance | ESRI | 1,667 | | 1,667 | 1,852 | | 1,852 |
| Taoiseach | NESC | 464 | | 464 | 470 | | 470 |
| Central Bank | Central Bank | 387 | | 387 | 481 | | 481 |
| Ordnance Survey | Ordnance Survey | 130 | | 130 | 135 | | 135 |
| **Total** | | **92,152** | **55,513** | **147,664** | **158,228** | **74,639** | **232,866** |
| **%Total** | | **62%** | **38%** | **100%** | **68%** | **32%** | **100%** |

* Public funds are exchequer & CSF funds

## Table 2A: *Public Funding of Research and Development*

| Funding Dept./Agency | Allocating Organisation | 1999 Exchequer €'000 | 1999 CSF €'000 | 1999 Public Funding €'000 | 2000 Exchequer €'000 | 2000 CSF €'000 | 2000 Public Funding €'000 |
|---|---|---|---|---|---|---|---|
| Enterprise, Trade | Enterprise Ireland | 3,523 | 25,498 | 29,021 | 6,755 | 39,730 | 46,485 |
| & Employment | Forfás | | | | 31,743 | | 31,743 |
| | PAT's | 2,448 | 7,348 | 9,796 | 3,845 | 9,565 | 13,410 |
| | Higher Education Authority | 2,274 | 6,824 | 9,098 | 2,413 | 7,238 | 9,650 |
| | Shannon Development | 1,781 | 5,089 | 6,871 | 1,981 | 5,079 | 7,060 |
| | IDA Ireland | 53 | 4,924 | 4,977 | 63 | 5,079 | 5,142 |
| | NMRC | 869 | 2,606 | 3,474 | 837 | 2,512 | 3,348 |
| | FÁS | 720 | 761 | 1,481 | 813 | 627 | 1,440 |
| | Údarás na Gaeltachta | | 973 | 973 | | 1,016 | 1,016 |
| | Dept. of Enterprise, T & E | 189 | 476 | 665 | 26 | 476 | 502 |
| | Innovation Centre | 205 | 105 | 311 | 164 | 90 | 254 |
| | ESRI | 254 | | 254 | 74 | | 74 |
| | DIAS | 6 | 23 | 29 | 15 | 36 | 51 |
| | NMAC | 24 | 72 | 97 | | | |
| **Sub-total** | | **12,348** | **54,699** | **67,046** | **48,728** | **71,448** | **120,175** |
| Education & Science | Higher Education Authority | 29,758 | 2,652 | 32,410 | 72,213 | | 72,214 |
| | Education & Science | 24,491 | 60 | 24,550 | 10,417 | 10,882 | 21,299 |
| | DIAS | 1,595 | | 1,595 | 1,632 | | 1,632 |
| | ESRI | 97 | | 97 | 123 | | 123 |
| **Sub-total** | | **55,940** | **2,712** | **58,652** | **84,385** | **10,882** | **95,267** |
| Agriculture & Food | Teagasc | 17,828 | 6,430 | 24,258 | 22,552 | 3,186 | 25,737 |
| | Higher Education Authority | 1,143 | 3,431 | 4,574 | 1,458 | 4,374 | 5,832 |
| | Department of Agri & Food | 5,351 | 227 | 5,578 | 5,274 | 302 | 5,577 |
| | Enterprise Ireland | 6 | 18 | 24 | | | |
| | ESRI | 14 | | 14 | | | |
| **Sub-total** | | **24,341** | **10,106** | **34,447** | **29,284** | **7,862** | **37,146** |
| Marine & Natural | COFORD | 93 | 999 | 1,092 | 347 | 703 | 1,050 |
| Resources | Marine Institute | 1,263 | 439 | 1,703 | 208 | 630 | 838 |
| | Higher Education Authority | 136 | 409 | 545 | 198 | 597 | 795 |
| | Marine & Natural Resources | 554 | | 554 | 503 | | 503 |
| | Enterprise Ireland | 81 | 245 | 326 | 89 | 166 | 255 |
| | Teagasc | 32 | 95 | 127 | 20 | 60 | 80 |
| | DIAS | 13 | 36 | 48 | 36 | 13 | 48 |
| | ESRI | 13 | | 13 | 11 | | 11 |
| **Sub-total** | | **2,184** | **2,223** | **4,407** | **1,412** | **2,169** | **3,581** |

## Table 2A: *Public Funding of Research and Development*

| Funding Dept./Agency | Allocating Organisation | 1999 Exchequer €'000 | 1999 CSF €'000 | 1999 Public Funding €'000 | 2000 Exchequer €'000 | 2000 CSF €'000 | 2000 Public Funding €'000 |
|---|---|---|---|---|---|---|---|
| Health & Children | Health Research Board | 6,999 | | 6,999 | 11,621 | | 11,621 |
| | Health & Children | 702 | | 702 | 805 | | 805 |
| | ESRI | 424 | | 424 | 505 | | 505 |
| **Sub-total** | | **8,125** | | **8,125** | **12,931** | | **12,931** |
| Environment & | Environmental Protection Agency | 772 | 460 | 1,232 | 748 | 825 | 1,573 |
| Local Government | Higher Education Authority | | 278 | 278 | | 1,524 | 1,524 |
| | National Roads Authority | 678 | | 678 | 724 | | 724 |
| | Environment & Local Gov. | 236 | | 236 | 220 | | 220 |
| | ESRI | 14 | | 14 | 210 | | 210 |
| | Teagasc | | 9 | 9 | | 64 | 64 |
| | Met Éireann | 13 | | 13 | 25 | | 25 |
| **Sub-total** | | **1,713** | **747** | **2,459** | **1,927** | **2,413** | **4,340** |
| Arts, Heritage, | Údarás na Gaeltachta | 1,717 | | 1,717 | 1,587 | | 1,587 |
| Gaeltacht & the | Dept. of Arts, Heritage, etc | 1,133 | | 1,133 | 1,460 | | 1,460 |
| Islands | Natural History Museum | 214 | | 214 | 215 | | 214 |
| **Sub-total** | | **3,064** | | **3,064** | **3,262** | | **3,262** |
| Public Enterprise | Met Éireann | 873 | | 873 | 1,072 | | 1,072 |
| | RPII | 344 | | 344 | 340 | | 340 |
| **Sub-total** | | **1,217** | | **1,218** | **1,412** | | **1,412** |
| Social, Community | Social, Community etc | 4,612 | | 4,612 | 13,769 | | 13,769 |
| And Family Affairs | ESRI | 103 | | 103 | 66 | | 66 |
| **Sub-total** | | **4,715** | | **4,715** | **13,835** | | **13,835** |
| Finance | ESRI | 2,117 | | 2,117 | 2,352 | | 2,352 |
| Taoiseach | NESC | 589 | | 589 | 597 | | 597 |
| Central Bank | Central Bank | 491 | | 491 | 611 | | 611 |
| Ordnance Survey | Ordnance Survey | 165 | | 165 | 171 | | 171 |
| | | | | | | | |
| **Total** | | **117,008** | **70,487** | **187,495** | **200,908** | **94,774** | **295,679** |
| **%Total** | | **62%** | **38%** | **100%** | **68%** | **32%** | **100%** |

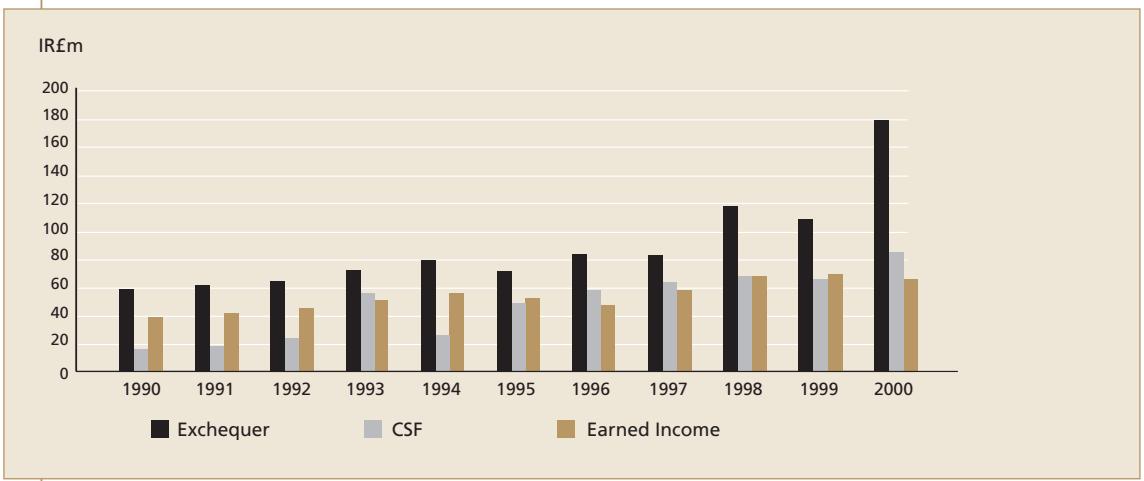
* Public funds are exchequer & CSF funds

The anticipated level of funding in 2000 shows an increase of about £85m (€107.9m) over 1999 levels. The major components of this increase are :

- *Department of Education and Science / Higher Education Authority :* £31m (€39.4m) additional under the Programme for Research in Third Level Colleges
- *Department of Enterprise, Trade and Employment / Forfás :* £25m (€31.7m) for the Technology Foresight Fund to be administered by *Science Foundation Ireland.* In practice, the bulk of this money will not be spent until 2001.
- *Department of Enterprise, Trade and Employment / Enterprise Ireland :* £14m (€17.8m) additional for R&D grants to the business sector and £3m (€3.8m) for research conducted by the PATs (Programmes in Advanced Technologies), mainly in third level colleges.
- *Department of Social, Community and Family Affairs :* £7m (€8.9m) to fund the development of new systems
- *Department of Health and Children / Health Research Board :* £3.5m (€4.4m) additional for health-related research.

Figure 1 depicts the sources of funds for total R&D expenditure over the past decade. The most notable aspect is the fact that while Exchequer funding has slightly increased its percentage of the total funding from 52% in 1990 to 54%, it has in real terms increased by £106.1m (€134.7m) or 203% since 1990. The contribution of EU Community Support Framework programmes has increased from 14% of the total funding in 1990 to 26% of the total in 2000.

**Figure 1** *Sources of Total R&D Funding 1990-2000 (2000 prices, £m)*



# 3 Performance of R&D in the Public Sector

Table 3 gives the profile of R&D performance in the public sector. The total 2000 allocation is £53.8m (€68.3m), representing about 0.3% of total government budget allocations of over £21 billion (€26.7 billion). Indeed, nearly £11.4m (€14.5m) of the total comes from earned income, so that the public investment in R&D, which is performed in the state sector, is £42.4m (€53.8m). There was an increase in total exchequer R&D support in 2000 of £4.1m, €5.2m (12.5%) over the 1999 outturn. This is to offset the decrease in funding from the CSF programmes of £2.7m, €3.5m (-32.5%).

**Table 3:** *Performance of Research and Development in the Government Sector*

| | 1999 Source of Funds | | | | | 2000 Source of Funds | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Performing Department/Agency** | **Exchequer £'000** | **CSF £'000** | **Private £'000** | **Total £'000** | **% Total** | **Exchequer £'000** | **CSF £'000** | **Private £'000** | **Total £'000** | **% Total** |
| Department of Agriculture & Food | 3,201 | 179 | | 3,380 | **6.7%** | 3,206 | 238 | | 3,444 | **6.4%** |
| - Teagasc | 13,650 | 5,146 | 5,729 | 24,526 | **48.7%** | 17,313 | 2,606 | 6,089 | 26,007 | **48.4%** |
| | | | | | | | | | | |
| Department of the Marine & Natural Resources | 436 | | | 436 | **0.9%** | 396 | | | 396 | **0.7%** |
| - COFORD | 73 | 787 | | 860 | **1.7%** | 273 | 554 | | 827 | **1.5%** |
| - Marine Institute | 995 | 346 | 66 | 1,407 | **2.8%** | 164 | 496 | 735 | 1,395 | **2.6%** |
| | | | | | | | | | | |
| Department of Health and Children | 553 | | | 553 | **1.1%** | 634 | | | 634 | **1.2%** |
| - Health Research Board | 1,843 | | 629 | 2,472 | **4.9%** | 1,831 | | 1,765 | 3,596 | **6.7%** |
| | | | | | | | | | | |
| Department of Enterprise, Trade & Employment | 125 | 375 | | 500 | **1.0%** | 3 | 375 | | 378 | **0.7%** |
| - FÁS | 567 | 599 | | 1,166 | **2.3%** | 640 | 494 | | 1,134 | **2.1%** |
| - Enterprise Ireland | 815 | 417 | 654 | 1,886 | **3.8%** | 950 | 131 | 747 | 1,828 | **3.4%** |
| - Innovation Centre | 162 | 83 | | 245 | **0.5%** | 129 | 71 | | 200 | **0.4%** |
| - National Microelectronics Applications Centre | 11 | 34 | 503 | 548 | **1.1%** | | | 430 | 430 | **0.8%** |
| | | | | | | | | | | |
| Department of the Environment & Local Government | 153 | | | 153 | **0.3%** | 134 | | | 134 | **0.2%** |
| - Environmental Protection Agency | 600 | 362 | | 962 | **1.9%** | 561 | 650 | 89 | 1,300 | **2.4%** |
| - National Roads Authority | 534 | | 94 | 628 | **1.3%** | 570 | | 79 | 649 | **1.2%** |

## Table 3: *Performance of Research and Development in the Government Sector*

| Performing Department/Agency | 1999 Source of Funds Exchequer £'000 | CSF £'000 | Private £'000 | Total £'000 | % Total | 2000 Source of Funds Exchequer £'000 | CSF £'000 | Private £'000 | Total £'000 | % Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Department of Finance | | | | | | | | | | |
| - Economic and Social Research Institute | 2,390 | | 1,148 | 3,538 | **7.1%** | 2,631 | | 1,145 | 3,776 | **7.0%** |
| | | | | | | | | | | |
| Department of Social, Community & Family Affairs | 2,369 | | | 2,369 | **4.7%** | 2,596 | | | 2,596 | **4.8%** |
| | | | | | | | | | | |
| Department of Education & Science | | | | | | | | | | |
| - Dublin Institute for Advanced Studies | 1,271 | 46 | 257 | 1,574 | **3.1%** | 1,325 | 38 | 240 | 1,603 | **3.0%** |
| | | | | | | | | | | |
| Department of Arts, Heritage, Gaeltacht & the Islands | 787 | | | 787 | **1.6%** | 980 | | | 980 | **1.8%** |
| - Natural History Museum | 169 | | | 169 | **0.3%** | 169 | | | 169 | **0.3%** |
| | | | | | | | | | | |
| Department of Public Enterprise | | | | | | | | | | |
| - Met Éireann | 697 | | 49 | 746 | **1.5%** | 865 | | 57 | 922 | **1.7%** |
| - Radiological Protection Institute of Ireland | 271 | | | 271 | **0.5%** | 268 | | | 268 | **0.5%** |
| | | | | | | | | | | |
| Department of the Taoiseach | | | | | | | | | | |
| - National Economic and Social Council | 464 | | 10 | 474 | **0.9%** | 470 | | 10 | 480 | **0.9%** |
| | | | | | | | | | | |
| Central Bank | 387 | | | 387 | **0.8%** | 481 | | | 481 | **0.9%** |
| Valuation and Ordnance Survey Office | 130 | | | 130 | **0.3%** | 135 | | | 135 | **0.3%** |
| | | | | | | | | | | |
| **Total** | **32,654** | **8,375** | **9,138** | **50,166** | **100%** | **36,725** | **5,653** | **11,385** | **53,762** | **100%** |

* Where there are transfers from one S&T agency/department to another the funds are accounted for in the performing agency

## Table 3A: *Performance of Research and Development in the Government Sector*

| Performing Department/Agency | 1999 Source of Funds | | | | | 2000 Source of Funds | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Exchequer €'000 | CSF €'000 | Private €'000 | Total €'000 | % Total | Exchequer €'000 | CSF €'000 | Private €'000 | Total €'000 | % Total |
| Department of Agriculture & Food | 4,064 | 227 | | 4,292 | **6.7%** | 4,071 | 302 | | 4,373 | **6.4%** |
| - Teagasc | 17,332 | 6,534 | 7,274 | 31,141 | **48.9%** | 21,983 | 3,309 | 7,731 | 33,022 | **48.4%** |
| | | | | | | | | | | |
| Department of the Marine & Natural Resources | 554 | | | 554 | **0.9%** | 503 | | | 503 | **0.7%** |
| - COFORD | 93 | 999 | | 1,092 | **1.7%** | 347 | 703 | | 1,050 | **1.5%** |
| - Marine Institute | 1,263 | 439 | 84 | 1,787 | **2.8%** | 208 | 630 | 933 | 1,771 | **2.6%** |
| | | | | | | | | | | |
| Department of Health and Children | 702 | | | 702 | **1.1%** | 805 | | | 805 | **1.2%** |
| - Health Research Board | 2,340 | | 799 | 3,139 | **4.9%** | 2,325 | | 2,241 | 4,566 | **6.7%** |
| | | | | | | | | | | |
| Department of Enterprise, Trade & Employment | 159 | 476 | | 635 | **1.0%** | 4 | 476 | | 480 | **0.7%** |
| - FÁS | 720 | 761 | | 1,481 | **2.3%** | 813 | 627 | | 1,440 | **2.1%** |
| - Enterprise Ireland | 1,034 | 530 | 830 | 2,394 | **3.8%** | 1,206 | 166 | 949 | 2,321 | **3.4%** |
| - Innovation Centre | 205 | 106 | | 311 | **0.5%** | 164 | 90 | | 254 | **0.4%** |
| - National Microelectronics Applications Centre | 14 | 43 | 638 | 696 | **1.1%** | | | 546 | 546 | **0.8%** |
| | | | | | | | | | | |
| Department of the Environment & Local Government | 194 | | | 194 | **0.3%** | 170 | | | 170 | **0.2%** |
| - Environmental Protection Agency | 762 | 460 | | 1,221 | **1.9%** | 712 | 825 | 113 | 1,651 | **2.4%** |
| - National Roads Authority | 678 | | 119 | 797 | **1.3%** | 724 | | 100 | 824 | **1.2%** |
| | | | | | | | | | | |
| Department of Finance | | | | | | | | | | |
| - Economic and Social Research Institute | 3,035 | | 1,458 | 4,492 | **7.0%** | 3,341 | | 1,454 | 4,795 | **7.0%** |
| Department of Social, Community & Family Affairs | 3,008 | | | 3,008 | **4.7%** | 3,296 | | | 3,296 | **4.8%** |
| | | | | | | | | | | |

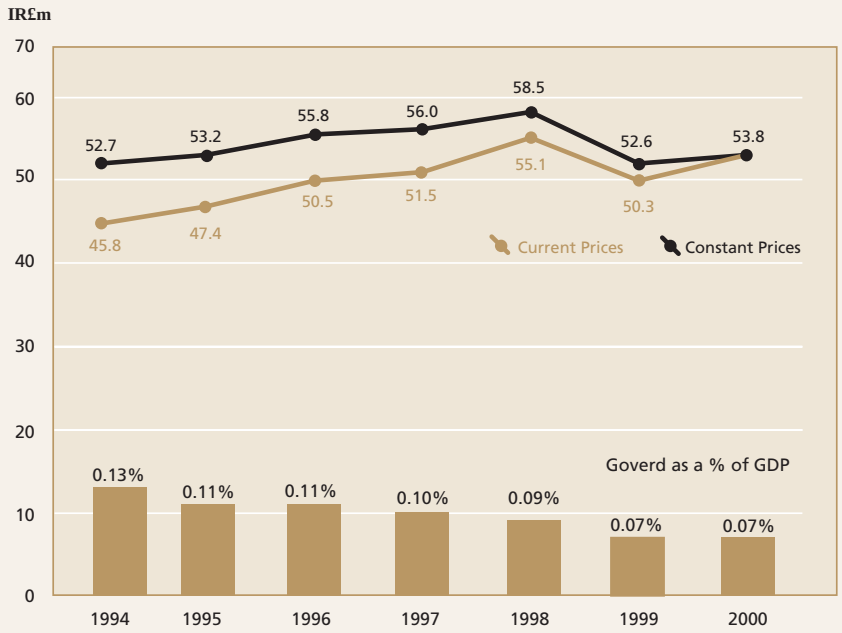
## Table 3: *Performance of Research and Development in the Government Sector*

| Performing Department/Agency | 1999 Source of Funds | | | | | 2000 Source of Funds | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Exchequer €'000 | CSF €'000 | Private €'000 | Total €'000 | % Total | Exchequer €'000 | CSF €'000 | Private €'000 | Total €'000 | % Total |
| Department of Education & Science | | | | | | | | | | |
| - Dublin Institute for Advanced Studies | 1,614 | 58 | 326 | 1,999 | **3.1%** | 1,683 | 48 | 304 | 2,035 | **3.0%** |
| | | | | | | | | | | |
| Department of Arts, Heritage, Gaeltacht & the Islands | 999 | | | 999 | **1.6%** | 1,244 | | | 1,244 | **1.8%** |
| - Natural History Museum | 214 | | | 214 | **0.3%** | 214 | | | 214 | **0.3%** |
| | | | | | | | | | | |
| Department of Public Enterprise | | | | | | | | | | |
| - Met Éireann | 885 | | 62 | 948 | **1.5%** | 1,098 | | 72 | 1,170 | **1.7%** |
| - Radiological Protection Institute of Ireland | 344 | | | 344 | **0.5%** | 340 | | | 340 | **0.5%** |
| | | | | | | | | | | |
| Department of the Taoiseach | | | | | | | | | | |
| - National Economic and Social Council | 589 | | 13 | 602 | **0.9%** | 597 | | 13 | 609 | **0.9%** |
| | | | | | | | | | | |
| Central Bank | 491 | | | 491 | **0.8%** | 611 | | | 611 | **0.9%** |
| Valuation and Ordnance Survey Office | 165 | | | 165 | **0.3%** | 171 | | | 171 | **0.3%** |
| | | | | | | | | | | |
| **Total** | **41,461** | **10,633** | **11,603** | **63,698** | **100%** | **46,631** | **7,177** | **14,456** | **68,264** | **100%** |

* Where there are transfers from one S&T agency/department to another the funds are accounted for in the performing agency

R&D performed in the public sector (known as GOVERD) has remained static since 1994 in real terms. In 2000 it amounted to £53.8m (€68.3m) or 0.07% of GDP. Figure 2 shows the trend since 1994.

**Figure 2** *Performance of R&D in the Public Sector 1994-2000*




# 4 Research and Development Performers

The major public sector performers (with expenditure over £1m, €1.27m in 2000) are listed in Table 4.

**Table 4:** *Public Sector Performers in 2000*

| | £m | €m |
|---|---|---|
| Teagasc | 26.0 | 33.0 |
| Economic and Social Research Institute | 3.8 | 4.8 |
| Health Research Board | 3.6 | 4.6 |
| Department of Agriculture & Food | 3.4 | 4.3 |
| Department of Social, Community and Family Affairs | 2.6 | 3.3 |
| Enterprise Ireland | 1.8 | 2.3 |
| Dublin Institute for Advanced Studies | 1.6 | 2.0 |
| Marine Institute | 1.4 | 1.8 |
| Environmental Protection Agency | 1.3 | 1.7 |

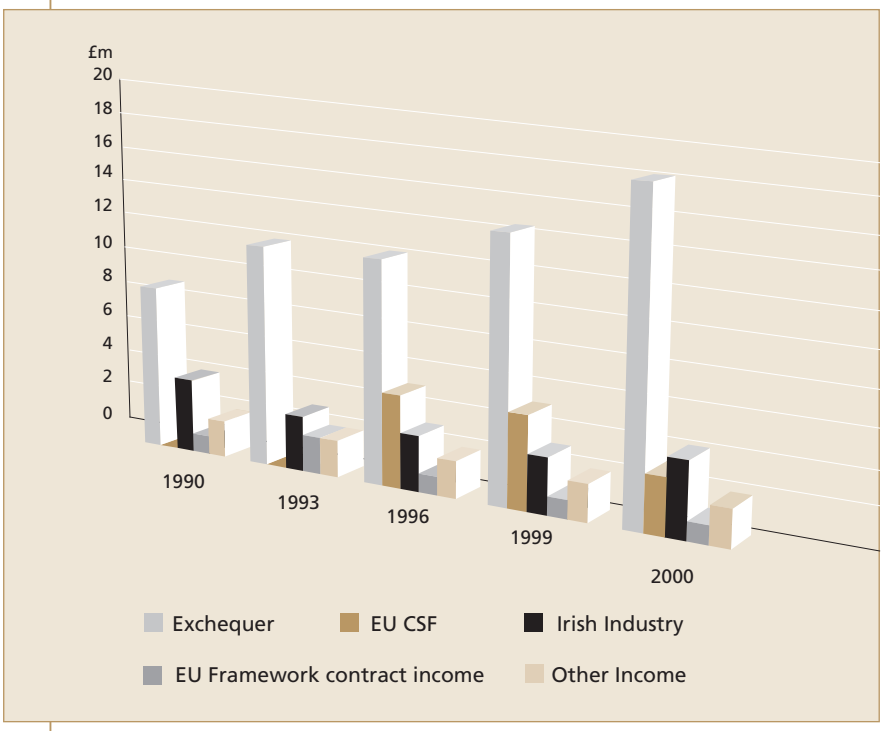
Teagasc is the only significant performer of R&D in the public sector. Its research budget for 2000 is £26.0m (€33.0m), compared to an actual level of £24.5m (€31.1m) in 1999. The Department of Agriculture & Food performs a further £3.4m (€4.3m) of R&D in its food related research. Nearly an order of magnitude lower in terms of scale comes the Economic and Social Research Institute, which performs research to the value of £3.8m (€4.8m). There are four or five other minor players with budgets over £1m (€1.27m) and a larger number who perform relatively small amounts less than £1m annually. It can be seen, therefore, with the significant exception of the agriculture and food sectors, that there is very little research performed in the Irish public sector. Details about the work of these organisations are given below.

| Teagasc | £'000 1999 | £'000 2000 |
|---|---|---|
| **R&D Budget** | 24,526 (€31,142) | 26,007 (€33,022) |

The 2000 research and development budget on a total cost basis is £26.0m (€33m), of which £18.5m (€23.5m) relates to research in sustainable agriculture and rural development and £7.5m (€9.5m) to food research.

Figure 3 presents the sources of funding for research carried out by Teagasc over the last decade. The most significant increase is from exchequer sources, which has increased by £8.4m, €10.7m (93%) over the 1990 figure.

**Figure 3** *R&D by source of funds, current prices*



Teagasc's research activities are grouped together into nine main programmes outlined below.

## 1 Agri food economics

The programme aims to develop the strategic knowledge base on:

- changes in the economic performance and competitiveness of the main farm enterprises;
- developments in export markets and changes in consumer preferences;
- the impacts of policy changes and market trends on the competitiveness of the Irish agri-food industry.

The work is classified under four sub-programmes as follows:

- Production Economics
- Competitiveness
- Policy Analysis
- Market Trends

## 2 Rural Development

A major objective in 2000 is to develop a capacity to model rural change to pinpoint the factors which contribute to rural viability; assess the effects of policy proposals and current trends and evaluate the potential role of alternative enterprises in supplementing farm incomes. Additional resources are being devoted to a major project on forestry involving the development of a forest soils classification and productivity. Projects are also underway investigating mushroom, vegetable and nursery stock production.

## 3 Rural Environment

Aims to develop viable nutrient and waste management strategies designed to minimise the adverse impact of agricultural and other enterprises on the rural environment and to develop strategies for the enhancement of rural landscapes and the ecological management of set-aside areas. The programme comprises the following three sub-programmes:

- Sustainable Farming Systems
- Soil Fertility
- Nutrient Management

## 4 Food Processing

Emphasis is placed on meats, food ingredients, new cheese varieties, new consumer products and new technology. Research on the quality, safety and nutritional value of foods are key features of this programme. The programme covers the full spectrum of the innovative process, ranging from market studies through strategic research to technology development services and training programmes. The programme comprises the following areas:

- Dairy Products and Food Ingredients
- Meat and Fish Products
- Fresh Products (mushrooms, potatoes, fruit and vegetables)
- Safety and Nutrition

## 5 Dairy Production

The objective of the research programme is to improve the competitiveness of Irish dairy production while ensuring product quality and safety and reducing the seasonality of milk supply. It must also ensure that the systems of production are compatible with animal health and welfare and with the protection of the environment.

## 6 Beef Production

The objective of the research programme is to provide technologies to allow the profitability of Irish beef farmers to be enhanced, through improved cost efficiencies of grassland and forage production and optimal animal husbandry practices, and meeting consumer needs for quality.

## 7 Sheep Production

The objectives of the research programme are to improve the competitiveness of sheep production by increasing ewe productivity and improving product quality based on sustainable systems designed to reduce production costs and reduce seasonality of supply. Work on grass and clover production and utilisation for intensive grazing systems is ongoing. Studies into human resources and labour requirements for sheep farming are also underway.

## 8 Pig Production

The objectives of the programme are to develop an integrated pig production system and to reduce the unit cost and improve the quality of pigmeat while reducing environmental impact and improving animal welfare.

## 9 Crops Production

The objective of the research programme is the development of more efficient production systems designed to increase competitiveness and improve product quality, whilst reducing chemical inputs. Projects are carried on in areas such as:

- Reduced chemical and fungicide inputs for weed and pest control in winter and spring cereals;
- The development of pest and virus control strategies for cereals;
- Reduced-input winter wheat production systems.
- Analysis and testing in connection with food composition, quality and safety.

| Economic and Social Research Institute | £'000 1999 | £'000 2000 |
|---|---|---|
| **R&D Budget** | 3,538 (€4,492) | 3,776 (€4,794.5) |

The Economic and Social Research Institute undertakes research designed to provide knowledge relevant to solving the major economic and social problems in Ireland. An important secondary function of the Institute is to assist in the development of top quality research workers through its training and education programmes.

The current activities of the Institute include research in economic forecasting and modelling, economic growth, the international environment, regional issues, the public sector, prices and

incomes, demography and labour, social policy, values and attitudes, data and methodology. It also undertakes commissioned studies, surveys and data analysis on behalf of outside organisations and provides training in research for young graduates.

| Health Research Board | £'000 1999 | £'000 2000 |
|---|---|---|
| **R&D Budget** | 2,472 (€3,139) | 3,596 (€4,566) |

The main function of the Health Research Board is to allocate research funds to other organisations. It does, however, conduct some research itself.

The HRB's research activities are outlined below:

- Medico-Social Research Surveys

  The Board designs and interprets surveys covering projects on for example, child health and neural tube defects, schizophrenia, drug misuse, alcoholism and evaluation of mental health services.

- Research Units

  The Board will support ten units in 1999 which are researching Hepatitis C, Inflammatory Bowel Disease, Cystic Fibrosis Pulmonary Disease, Eicosanoids in Vascular Disease, Suicide, Gene Therapy for Cancer, Retinopathies Research and Cancer, Early Arthritis, Diabetic Nephropathy, and health status and health gain. It is co-funding a unit in conjunction with the Irish Heart Foundation conducting research into Vascular Disease and Homocysteine Metabolism.

| Department of Agriculture, Food and Rural Development | £'000 1999 | £'000 2000 |
|---|---|---|
| **R&D Budget** | 3,380 (€4,292) | 3,444 (€4,373) |

The Department's research activities are grouped together into three main programmes outlined below.

### 1 Improvement of Crops

Improving the quality of crops and crop products through the use of the highest quality varieties and seeds. The main activities leading to achievement of this objective include:

- the operation of two stations/farms at Ballinacurra in Co. Cork and Backweston in Co. Dublin, where plant varieties are evaluated
- the operation of a potato laboratory at Raphoe in Co. Donegal
- the carrying out of trials in farmers' fields throughout the country.

### 2 Veterinary and Meat Laboratory Services

Operation of a Central Veterinary Research Laboratory at Abbotstown, Co. Dublin, Regional Veterinary Research Laboratories at Cork, Limerick, Sligo, Athlone and a testing laboratory in Waterford.

3 **Improvement of Livestock**

Improving the quality of livestock and livestock products through adoption of better breeding and selection practices. The main activities leading to achievement of these objectives are operation of on-farm and central testing stations; recording schemes; collaboration with and support for research in animal breeding at research institutions.

| Department of Social, Community and Family Affairs | £'000 1999 | £'000 2000 |
|---|---|---|
| **R&D Budget** | 2,369 (€3,008) | 2,596 (€3,296) |

The Department's research programmes in 2000 are funded entirely from exchequer funds.

The Department's main research activities are:

- the systematic review and evaluation of existing social welfare policies, programmes and schemes
- the monitoring of economic and demographic developments and their impact on social welfare;
- the formulation of new social policy developments

In addition the department has responsibility for the Combat Poverty Agency. The Agency's four main functions are policy advice, project support and innovation, research and public education. The Agency undertakes, commissions and publishes research, evaluations policy reports and other information on aspects of poverty. Approximately half of the Agency's activities can be classified as research.

| Enterprise Ireland | £'000 1999 | £'000 2000 |
|---|---|---|
| **R&D Budget** | 1,886 (€2,394) | 1,828 (€2,321) |

Enterprise Ireland's research activities are in the following areas:

- **Forest Products**

  Applied research is carried-out to identify opportunities for Irish timber and to develop new applications and standards. In addition, training and assistance with new product and process development is provided to the Irish timber industry.

- **Materials Programme**

  This programme provides a research and development support service to industry and the public sector covering a wide range of material-related research and development with a significant programme in industrial coatings and ceramics.

- **National Electrical Test Centre (NETC)**

  NETC is involved in a number of EU-funded international research projects in advanced telecommunications systems and hardware. It is expected that the products developed from this research will contribute to the continuing upgrading of the Irish telecommunications sector.

| Dublin Institute for Advanced Studies | £'000 1999 | £'000 2000 |
|---|---|---|
| R&D Budget | 1,574 (€1,999) | 1,603 (€2,035) |

The Institute, through the constituent schools, pursues fundamental research and trains advanced students in methods of original research.

**The School of Theoretical Physics**

The school pursues basic research in theoretical particle physics; classical statistical mechanics; quantum statistical mechanics and quantum electronics. The School pursues applied research in queuing theory for telecommunications which is closely related to the basic research carried out in classical statistical mechanics.

**The School of Cosmic Physics**

The school conducts theoretical and experimental work in astronomy, astrophysics, space physics and geophysics.

| Marine Institute | £'000 1999 | £'000 2000 |
|---|---|---|
| R&D Budget | 1,407 (€1,787) | 1,395 (€1,771) |

The Marine Institute operates from its Headquarters in Dublin and has three regional research laboratories at Abbotstown, Galway and Newport. The Institute also operates the National Marine Data Centre and the national research vessel Celtic Voyager.

| Environmental Protection Agency | £'000 1999 | £'000 2000 |
|---|---|---|
| R&D Budget | 962 (€1,221) | 1,300 (€1,651) |

The EPA's research activities are outlined below.

**Environmental Monitoring and Laboratory Services**

This programme is concerned with the investigation of eutrophication tendencies in lakes, rivers and estuarine and coastal waters; the remote sensing of algal growth in lakes; and baseline studies of toxic and persistent substances in surface waters.

**Licensing and Enforcement**

Diagnostic/planning studies which deal with the practical aspects of Integrated Pollution Control (IPC) licensing and waste licensing.

# 5 International Comparisons on Public Sector R&D

It is useful to benchmark Ireland's relative position in comparison to other countries in order to assess our performance to date. It must be mentioned that taking these indicators in isolation may give a false impression of the underlying research scene. Indicators only give a partial view of the reality. In addition, many indicators do not reflect the quality or efficiency of countries in particular areas. For example, a high R&D intensity does not necessarily imply that R&D inputs are efficiently used.

Table 5 shows both the performance of R&D in the public sector (excluding the higher education sector) and the funding of R&D by the Government (this would fund R&D performed not only in the public sector but also in the business sector and in the higher education sector).

**Table 5:** *R&D Performance and Funding by the Government Sector for Selected Countries. (1999 or nearest)*

| | Public Sector R&D Performance (% GDP) | Government Funding of Civil R&D (% GDP) |
|---|---|---|
| New Zealand | 0.41 | 0.57 |
| Finland | 0.38 | 1.06 |
| Netherlands | 0.37 | 0.79 |
| Denmark | 0.32 | 0.72 |
| Norway | 0.28 | 0.72 |
| Portugal | 0.16 | 0.62 |
| Sweden | 0.14 | 0.79 |
| Greece | 0.13 | 0.28 |
| **Ireland (2000)** | **0.07** | **0.29** |

Source: OECD

There is a wide variation in approaches and results between the different countries. Most of the countries have a similar profile, performing a significant level of R&D in the public sector and funding still more in other sectors. Ireland has a tradition of having very little R&D performed in the public sector with the significant investment being carried out in the business and higher education sectors.

# Reports Published by Forfás 2000 - 2001

| | |
|---|---|
| The Dynamics of the Retail Sector in Ireland | January 2000 |
| Enterprise 2010 | January 2000 |
| Survey of Research & Development in the Business Sector 1997 | February 2000 |
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| Proposals on Transport Infrastructure, the Planning Process and Public Transport<br>*National Competitiveness Council (NCC)* | March 2000 |
| The Second Report of the Expert Group on Future Skills Needs<br>*Responding to Ireland's growing skill needs* | March 2000 |
| Business Education & Training Partnership 2nd Forum, Dublin | March 2000 |
| Management Development in the Republic of Ireland: Patterns and Trends | May 2000 |
| Annual Competitiveness Report 2000 & The Competitiveness Challenge Report<br>*National Competitiveness Council (NCC)* | May 2000 |
| State Expenditure on Science & Technology, 1999 | June 2000 |
| Forfás Annual Report 1999 | July 2000 |
| Statement on Telecommunications, e-Business and the Information Society<br>*National Competitiveness Council (NCC)* | July 2000 |
| Statement on Regulatory Reform<br>*National Competitiveness Council (NCC)* | July 2000 |
| Annual Survey of Irish Economy Expenditures | August 2000 |
| Report on e-Business Skills<br>Report on In company Training<br>*Expert Group on Future Skills Needs* | August 2000 |
| Survey of Research in the Higher Education Sector 1998 | September 2000 |
| Statement on Labour Supply and Skills<br>*National Competitiveness Council (NCC)* | September 2000 |
| Telecommunications for e-Business: A User's Guide | November 2000 |
| Annual Employment Survey 1999 | November 2000 |
| International Trade and Investment Report, 2000 | December 2000 |
| The 4th Framework Programme in Ireland | April 2001 |
| Commercialisation of Publicly Funded Research<br>*Irish Council for Science, Technology & Innovation (ICSTI)* | April 2001 |
| The Third Report of the Expert Group on Future Skills Needs<br>Responding to Ireland's growing skill needs | July 2001 |
| Forfás Annual Report 2000 | August 2001 |
| Annual Employment Survey 2000 | September 2001 |
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