State Expenditure on Science & Technology, 2001

Volume One – The Total Science and Technology Budget

January 2003

Science and Technology Budget 2001

Review of State Expenditure on Science and Technology 1990-2001

Incorporating financial expenditures in 2000 and allocations for 2001 by Government to Institutions engaged in any activity related to science and technology.

Evaluation and Indicators Unit

January 2003

Contents

1 Summary

Vol. 1 Science and Technology Budget – State expenditure on scientific and technological activities.

The 'Science and Technology Budget' provides details of the allocations made by Government to all scientific and technological activities, both those undertaken by the public sector and the private sector. The most important of these activities is research and development (R&D) and other activities are education and training, technical services (including information and advice) and technology transfer. In all, 40 government departments and agencies are involved in allocating the total S&T budget. And the definitions of S&T used are quite broad, so that the report includes activities of Met Éireann, the Geological Survey, the Office of Public Works and other similar organisations.

The table below shows the total allocations for both 2000 and 2001, as well as the outturn for 2000. The difference between outturn and allocations reflects changes that took place during the year and resulted in a variation from the budget plan at the start of the year.

Allocations and Outturn (€m)

	2000 Allocation	2000 Outturn	2001 Allocation
Exchequer	1,050.51	1,068.05	1,491.69
EU	135.52	91.45	73.03
Total Public	**1,186.03**	**1,159.50**	**1,564.72**
Earned income	211.32	200.95	195.05
Total	**1,397.35**	**1,360.45**	**1,759.76**

The 2001 allocation represents an increase of just €400m over the 2000 outturn. Exchequer funds accounted for all of the increase as both EU contributions and private sector funds declined. The table below indicates the areas where the major increases in public expenditure occurred (i.e. ignoring earned income).

Changes in Expenditure 2000 – 2001 (€m)

	2000 Outturn	2001 Allocation	Change
Dept of Education & Science	743.4	927.6	+184.2
Dept. of Public Enterprise	44.1	124.3	+80.2
Dept. of Enterprise, Trade & Employment	138.3	177.0	+38.7
Dept. of Social, Community & Family Affairs	8.0	33.6	+25.6
Dept. of Agriculture, Food & Rural Development	98.4	118.4	+20.0
Central Statistics Office	28.2	43.6	+15.4
Dept. of Marine & Natural Resources	27.9	39.3	+11.4
Office of Public Works	5.6	14.8	+9.2

The increase in the Department of Education and Science was mainly for additional funding for science and engineering courses in third level institutions and also extra funding (€39m) for research under the Programme for Research administered by the HEA.

Most of the increase in the department of Enterprise, Trade and Employment relates to additional R&D funding via Forfás and Enterprise Ireland.

The Department of Public Enterprise is investing strongly in the Digital Hub and in MediaLab Europe.

Vol. 2. Research and Development in the Public Sector Financial allocation by Government for 2001 to institutions involved in R&D.

As research and development is a very important component of total S&T spend, a separate report on R&D is prepared in addition to the Total S&T Budget report. This analyses both the funding of R&D by government departments/agencies (whether performed in the public sector or the private sector) and the performance of R&D in the public sector. Forfás prepares separate reports on the performance of R&D in the business sector ('BERD') and in the higher education sector ('HERD').

The table below shows the total allocations for R&D for both 2000 and 2001, as well as the outturn for 2000.

Public Funding of R&D, 2000-2001

	2000 Allocation	2000 Outturn	2001 Allocation
Exchequer	201.05	175.78	285.09
EU	94.77	68.28	56.74
Total Public	295.68	244.06	341.84
Earned income	73.08	76.88	75.07
Total	**368.90**	**320.95**	**416.90**

The table below indicates the areas where the major changes in expenditure occurred.

Changes in R&D Expenditures (€m)

	2000 Allocation	2000 Outturn	2001 Allocation	Change
Dept. of Education & Science	95.3	82.5	121.6	+39.1
Dept. of Enterprise, Trade & Employment	120.2	61.6	89.5	+27.9
Dept. of Public Enterprise	1.4	7.4	18.0	+10.6
Dept. of Agriculture, Food & Rural Development	37.1	51.1	58.6	+7.5
Dept. of Marine & Natural Resources	3.6	13.6	21.0	+7.4
Dept. of Health & Children	12.9	12.5	15.6	+3.1

Allocations of public funds to research and development by government departments and their agencies in 2001 amounted to €341.8m. This compares with an original allocation of €295.7m in 2000 and an outturn for 2000 of €244.1m. The difference between allocation and outturn in 2000 reflected a wide variety of different factors. On the one hand, the outturn for the Department of Enterprise, Trade and Employment was nearly 50% below allocation (€61.6m instead of €120.2m); this was caused mainly by the slower than expected build up in Science Foundation Ireland (shortfall of €31m) as well as an underspend of €17.5m by Enterprise Ireland. On the other hand, additional unanticipated expenditures by the Department of Public Enterprise (+€6m for the Digital Hub/MediaLab Europe) and the Department of Marine & Natural Resources (+€9m for the construction of the Celtic Explorer Research Vessel) contributed to reducing the overall shortfall between allocation and outturn that year to €51.6m

The allocations for 2001 are up by 40%, or €98m on 2000 outturn figures and by 15% or €46m compared to the original 2000 allocations. The major contributors to this increased funding are:

- Department of Education and Science: €39.1m
- Department of Enterprise, Trade and Employment: €28m
- Department of Public Enterprise: €10.6m

Other significant increases are in the Department of Agriculture, Food and Rural Development (€7.5m), the Department of the Marine and Natural Resources (€7.5m) and the Department of Health and Children (€3.1m)

Additional funding from the Department of Education and Science relates to expenditures under the Programme for Research in Third Level Institutions. The Department of Enterprise, Trade and Employment increase reflects a build up in expenditures to Forfás to fund Science Foundation Ireland as well as additional grants for R&D from Enterprise Ireland to the business sector and to third level institutions. The Department of Public Enterprise has begun to support R&D in a significant way in the Digital Hub and in MediaLab Europe.

The levels of R&D performed in the various Government Departments and their agencies do not match 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.

The allocation for performance of R&D in 2001 is €127.7m, up from €95.6m in 2000. This figure includes €13.1m, which is earned income so that the public funds invested in R&D performed in the public sector amount to €114.6m in 2001, compared with €82.7m in 2000.

2 Introduction

This document provides details of the allocations made by Government to scientific and technological (S&T) activities. In all, 40 government departments/agencies are included in the 2001 S&T Budget. The information on which the analysis is based was supplied by government departments, offices, agencies and other recipient institutions following finalisation of the overall government estimates for the public services for 2001, and after the operating institutions had decided on the distribution of their allocations over their programmes. Figure 1 indicates the public sector organisations funding and performing S&T activities in 2001.

Figure 1 *Government Departments/Agencies Funding S&T, 2001*

DEPARTMENTS	AGENCY	DEPARTMENTS	AGENCY
Agriculture, Food & Rural Development	Teagasc	Education & Science	HEA DIAS
Enterprise, Trade & Employment	Forfás Enterprise Ireland IDA Ireland Patents Office	Environment & Local Government Social, Community and Family Affairs	EPA NRA
	MAC FÁS NSAI	Arts, Heritage, Gaeltacht and the Islands	Údarás na Gaeltachta Natural History Museum
Public Enterprise	GSI RPII Met Éireann	Health & Children	HRB Postgraduate Medical & Dental Board
Marine & Natural Resources	Marine Institute BIM Central Fisheries Board COFORD	Taoiseach	NESC
OFFICES	CSO Ordnance Survey	OPW Central Bank	State Laboratory
INCORPORATED COMPANIES	ESRI	Shannon Development	

See appendix 2 for explanation of acronyms.

Section 2 brings together the total S&T picture for the public sector, including non-exchequer monies – mainly fees and other earned income – of institutions that operate science and technology programmes. Section 3 considers other public sector activities related to the productive sectors of the economy. Section 4 covers S&T education, training and health while Section 5 includes a range of other public sector S&T activities. Section 6 is concerned with science & technology activities undertaken by the Government in support of economic and social activities.

3 Total Government Funding of Science and Technology

3.1 Total Funding and Trends

The total public expenditure on science and technology occurs under five broad headings:

- Research and development activities (as detailed in Volume Two of this report)
- Other S&T activities in support of industry, agriculture and food, the environment, marine and forestry, energy and transportation
- Education and health
- Other public service activities
- Economic and social activities

The total of these five components constitutes the State Investment in Science and Technology for 2001 (the 'Science and Technology Budget'). Funding for these activities come from three sources – the exchequer, the Community Support Framework (CSF) of the EU, and income earned by the agencies/departments implementing science and technology programmes.

The total value of the science and technology budget in 2001 amounts to €1,760m and Table 1 identifies the sources of funding for 1991, 1996, 2000 and 2001.

Table 1 *Government funding of Science and Technology by source of funds, current prices*

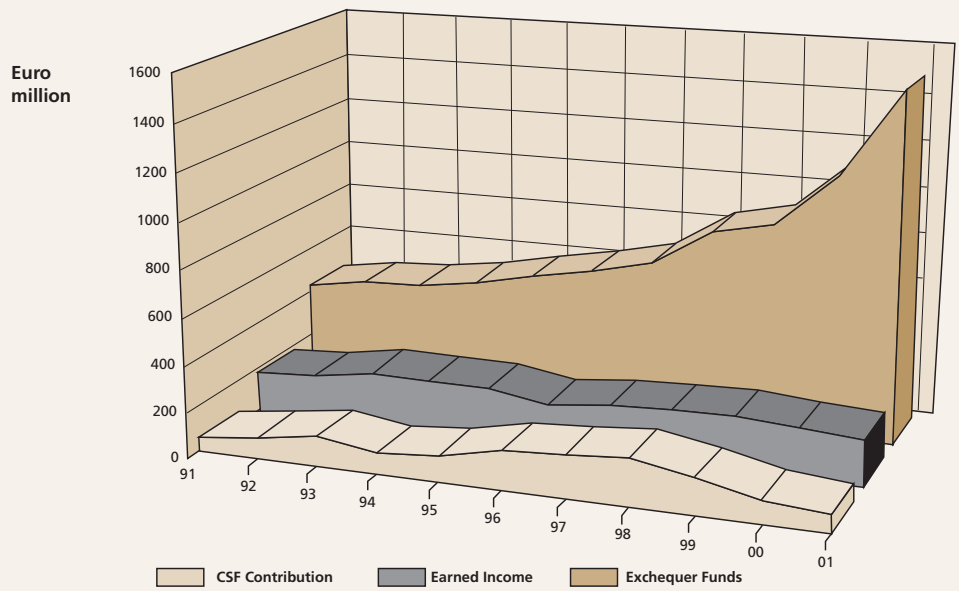
	91 Outturn		96 Outturn		00 Outturn		01 Allocation	
	€m	%	€m	%	€m	%	€m	%
Exchequer funds	328.37	64	527.79	64	1,068.05	79	1,491.69	85
CSF Contribution	48.00	9	142.34	17	91.45	7	73.03	4
Total public funds	**376.37**	**74**	**670.13**	**81**	**1,159.50**	**85**	**1,564.72**	**89**
Earned income	135.26	26	158.79	19	200.95	15	195.05	11
Total	**511.63**	**100**	**828.93**	**100**	**1,360.45**	**100**	**1,759.76**	**100**

There was an increase of €399.3m, or 29.4% in the Total 'Science and Technology Budget' over the 2000 outturn. Increased Exchequer funding amounted to €423.6m, (this represents an increase of 40% over the 2000 outturn figure), with earned income and EU contribution both declining slightly. The EU contribution has almost halved since 1996.

In 2001 the EU contribution to Irish S&T will decrease to €73m from €91.5m in 2000, or 4% of the total in 2001 down from 7% in 2000. This contribution comes via the Community Support Framework and consists of three separate funds – the European Regional Development Fund (ERDF), the European Social Fund (ESF) and the European Agriculture, Guidance and Guarantee Fund (EAGGF).

Figure 2 illustrates the trends in funding in the recent past.

Figure 2 *Distribution of Government supported S&T by sources of funds, 2001 prices, €m*



The annual growth rate for Exchequer funds between 1991 and 2000 was 11.3% in real terms. A further real increase of €371.3m is expected in 2001. Earned income averaged €211m per annum between 1990 and 2001.

3.2 Funding by Type of Cost

Table 2 *Government funding of Science and Technology by type of costs, current prices*

	1991		1996		2000		2001	
	€m	%	€m	%	€m	%	€m	%
Public current monies*	346.78	68	615.06	74	1,012.17	74	1,251.84	71
Public capital monies	29.59	6	55.08	7	147.33	11	312.88	18
Total public funds	**376.37**	**74**	**670.13**	**81**	**1,159.50**	**85**	**1,564.72**	**89**
Earned income	135.26	26	158.79	19	200.95	15	195.05	11
Total	**511.63**	**100**	**828.93**	**100**	**1,360.45**	**100**	**1,759.76**	**100**

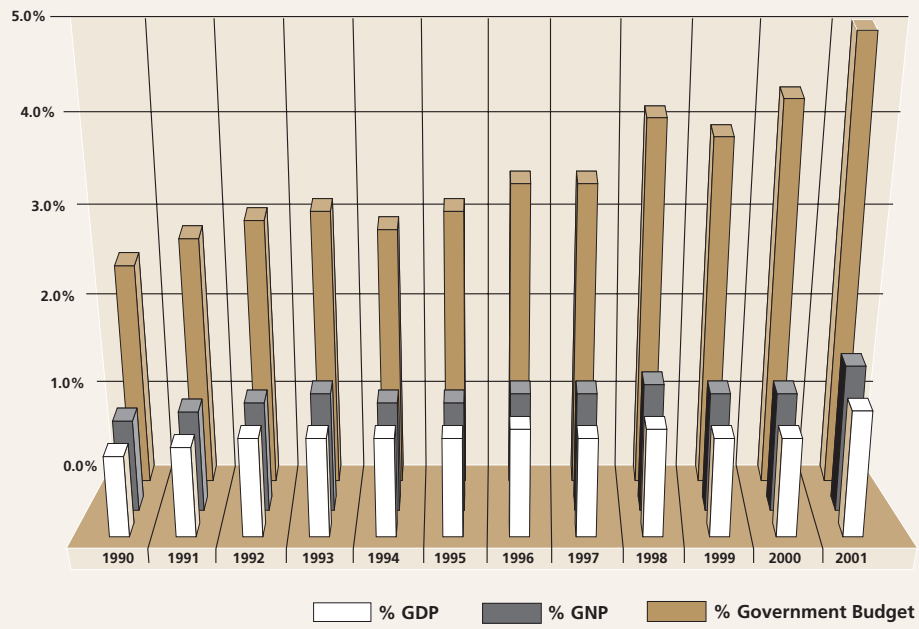
** Public monies are exchequer + CSF funds*

Figure 2 shows a significant increase in public capital monies since 2000 from €147m to €313m, and more dramatically since 1996 from €55m. The Department of Education will fund 64.2% (€200.9m) of the public capital for 2001 to upgrade the capital infrastructure of the third level institutes.

3.3 Comparison with GDP and Total Government Budgets

Public funding for S&T as a percentage of total government budgets shows a steady increase since 1991 (2.8%) to reach 5.0% in 2001 (Figure 3). This positive trend reflects the government's increasing commitment to science and technology.

Figure 3 *Public* funding of S&T: % Government budget, % GDP, % GNP 1991-2001*



** Exchequer + CSF*

Public funds for S&T as a percentage of GDP have increased from 1.0% in 1991 to 1.4% in 2001. Public funding as a percentage of GNP has increased from 1.1 % in 1991 to reach 1.6% in 2001. According to Davy Stockbrokers the overall GDP figures for Ireland are distorted by trends in the chemical sector and GNP may be a more appropriate measure of the economy's growth.

3.4 Government Departments/Agencies funding science and technology

Table 3 presents Department/Agency allocations to S&T analysed by source of funds. Some agency programmes are extremely reliant on non-exchequer sources for their income in the form of CSF funds and earned income while others are funded entirely from exchequer sources. The agencies that receive most CSF support are the Department of Education and Science, the Higher Education Authority, Enterprise Ireland and Shannon Development. The NSAI and the Patents Office are more reliant on earned income to fund their S&T expenditure.

Table 3 *2001 Science and Technology Expenditures by Departments/Agencies by source of funds*

	Exchequer €'000	CSF €'000	Total public €'000	Earned income €'000	Total €'000
Department of Education and Science	511,166	21,230	532,396		532,396
- Higher Education Authority	375,078	17,899	392,978	110,503	503,480
- Dublin Institute for Advanced Studies	2,076	114	2,190	192	2,382
Department of Enterprise, Trade & Employment	9,983		9,983		9,983
- Enterprise Ireland	44,201	29,867	74,068	9,860	83,927
- FÁS	63,543		63,543		63,543
- N.S.A.I	4,481		4,481	12,063	16,543
- Shannon Development	3,105	2,286	5,390		5,390
- I.D.A Ireland	8,952		8,952		8,952
- Patents Office	-3,755		-3,755	7,283	3,529
- Forfás (inc. NAB)	14,367		14,367		14,367
- National Microelectronics Applications Centre				1,351	1,351
Department of Agriculture, Food & Rural Development	41,687	1,177	42,864	8,331	51,195
- Teagasc	75,521		75,521	21,173	96,694
Department of Health and Children	8,848		8,848		8,848
- Health Research Board	14,813		14,813	1,971	16,783
- Postgraduate Medical & Dental Board	5,295		5,295		5,295
Central Statistics Office	43,628		43,628	1,484	45,113
Department of Marine and Natural Resources	1,159		1,159	159	1,318
- Marine Institute	23,795	268	24,063	3,214	27,277
- Bord Iascaigh Mhara	10,521		10,521		10,521
- Central & Regional Fisheries Board	2,032		2,032		2,032
- COFORD	1,571		1,571		1,571
Department of Public Enterprise	99,253		99,253		99,253
- Geological Survey of Ireland	13,313		13,313	184	13,497
- Met Éireann	9,635		9,635	8,010	17,644
- Radiological Protection Institute of Ireland	2,091		2,091	839	2,931
Department of Environment and Local Government	1,326		1,326		1,326
- Environmental Protection Agency	10,951	190	11,142	6,571	17,713
- N.R.A	2,725		2,725	127	2,852

Table 3 *2001 Science and Technology Expenditures by Departments/Agencies by source of funds*

	Exchequer €'000	CSF €'000	Total public €'000	Earned income €'000	Total €'000
Department of Social, Community and Family Affairs	33,642		33,642	163	33,804
Ordnance Survey Office	20,895		20,895		20,895
Office of Public Works	14,789		14,789		14,789
Department of Finance					
- Economic and Social Research Institute	6,040		6,040	1,566	7,606
Department of Arts, Heritage, Gaeltacht and the Islands	4,782		4,782		4,782
- Natural History Museum	248		248		248
- Údaras na Gaeltachta	3,174		3,174		3,174
State Laboratory	5,440		5,440		5,440
Central Bank	589		589		589
Department of the Taoiseach					
- National Economic and Social Council	729		729	6	735
Total	**1,491,686**	**73,032**	**1,564,717**	**195,047**	**1,759,764**

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

Note: Earned income assigned to the Higher Education Authority refers to funds which the colleges under its aegis receive by way of fees for education courses and income generated from contract research activity. These funds are not allocated by the HEA to colleges.

Table 4 analyses the breakdown of the increase in 2001 over 2000. The total increase in public funds over the 2000 outturn figures amounts to €405.2m.

Table 4 *Changes in Funding by Department in 2000 and 2001 €'000*

	2000 Outturn increase in funding over 1999 €'000	2001 Allocation increase in funding over 2000 Outturn €'000	2001 Allocation €'000
Department of Education and Science	96,696	184,240	927,564
Department of Public Enterprise	32,437	80,263	124,292
Department of Enterprise, Trade & Employment	21,410	38,738	177,028
Department of Social, Community and Family Affairs	1,722	25,612	33,642
Department of Agriculture, Food & Rural Development	19,648	20,092	118,385
Central Statistics Office	6,057	15,436	43,628
Department of Marine and Natural Resources	10,461	11,448	39,345
Office of Public Works	2,867	9,227	14,789
Ordnance Survey Office	9,187	6,846	20,895
Department of Health and Children	6,598	5,658	28,955
Department of Environment and Local Government	-582	2,946	15,192
Department of Arts, Heritage, Gaeltacht and the Islands	613	2,589	8,204
Department of Finance	960	1,307	6,040
State Laboratory	378	630	5,440
Department of the Taoiseach	8	132	729
Central Bank	48	50	589
Total	**208,508**	**405,214**	**1,564,717**

The major increases in the total S&T Budget occurred in the following areas:

1. Multimedia Developments grant administered by the Department of Public Enterprise (€66m)

2. Institutes of Technology/Dublin Institute of Technology grants administered by the Department of Education and Science (€44.1m)

3. Increased research support via Enterprise Ireland and Science Foundation Ireland from the Department of Enterprise, Trade & Employment (€27.9m)

4. Programme for Schools IT (capital) administered by the Department of Education and Science (€25.4m)

5. Consultancy Services administered by the Dept of Social, Community and Family Affairs (€22.7m)

6. Programme for Research in Third level Institutions (capital) administered by the Department of Education and Science(€20m)

7. Programme for Research in Third Level Institutions (current) administered by the Higher Education Authority (€20m)

8. S&T Education and Investment Fund (capital) administered by the Department of Education and Science (€20m)

The total allocation to the Department of Education and Science amounts to €927.6m; this is an increase of over €180m over the 2000 outturn. Almost a third of the Department's allocation (€306m) has been allocated to the Institutes of Technology. The Department has also allocated €393m via the Higher Education Authority for science & technology in third level institutions. Nearly half of this allocation is for training & education in the universities.

Another significant increase over 2000 funding is seen in the Dept of Public Enterprise where an extra €80m has been allocated to fund science and technology. A significant proportion of this has been allocated for the Digital Hub and MediaLab Europe (€66m).

Table 5 looks at the breakdown between current and capital costs incurred by the various departments and agencies.

Table 5 *2001 Science and Technology Expenditures by Agencies/Departments (*) by type of costs*

	Public Funds**			
	Current €'000	Capital €'000	Total Public Allocation 2001 €'000	Total Public Funds 2000 Outturn €'000
Department of Agriculture, Food & Rural Development	42,254	610	42,864	39,302
- Teagasc	67,654	7,867	75,521	58,991
Department of Arts, Heritage, Gaeltacht & the Islands	4,782		4,782	2,311
- Natural History Museum	248		248	231
- Údaras na Gaeltachta	3,174		3,174	3,073
Central Statistics Office	42,692	936	43,628	28,192
Central Bank	589		589	540
Department of Education & Science	427,017	105,379	532,396	410,097
- Dublin Institute for Advanced Studies	2,190		2,190	2,241
- Higher Education Authority	297,481	95,497	392,978	330,985
Department of Enterprise, Trade & Employment	9,665	317	9,983	8,736
- FÁS	63,543		63,543	48,705
- Enterprise Ireland	73,404	664	74,068	68,549
- Forfás (incl. NAB)	5,600	8,768	14,367	2,974
- IDA Ireland	8,952		8,952	3,127
- National Microelectronics Applications Centre				
- National Standards Authority of Ireland	4,481		4,481	4,389
- Patents Office	- 3,755		- 3,755	- 4,953
- Shannon Development	5,390		5,390	6,763
Department of the Environment & Local Government	1,326		1,326	1,839
- Environmental Protection Agency	11,142		11,142	8,168
- National Roads Authority	2,725		2,725	2,240
Department of Finance				
- Economic & Social Research Institute	6,040		6,040	4,734
Department of Health & Children	8,768	80	8,848	7,207
- Health Research Board	14,813		14,813	11,913
- Postgraduate Medical & Dental Board	5,295		5,295	4,177

	Public Funds**			
	Current €'000	Capital €'000	Total Public Allocation 2001 €'000	Total Public Funds 2000 Outturn €'000
Department of the Marine & Natural Resources	1,159		1,159	410
- Bórd Iascaigh Mhara	10,488	33	10,521	2,369
- Central & Regional Fisheries Board	2,032		2,032	1,724
- COFORD	1,571		1,571	1,611
- Marine Institute	14,864	9,199	24,063	21,782
Office of Public Works		14,789	14,789	5,561
Ordnance Survey Ireland	20,895		20,895	14,048
Department of Public Enterprise	33,227	66,026	99,253	26,411
- Geological Survey of Ireland	12,913	400	13,313	9,234
- Meteorological Office	9,050	585	9,635	6,623
- Radiological Protection Institute of Ireland	1,949	142	2,091	1,762
Department of Social, Community & Family Affairs	32,055	1,587	33,642	8,030
State Laboratory	5,440		5,440	4,810
Department of the Taoiseach				
- National Economic & Social Council	729		729	597
TOTAL	**1,251,838**	**312,879**	**1,564,717**	**1,159,503**

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

*** Public funds are exchequer plus CSF funds*

3.5 Funding by activity

Expenditure on the different S&T activities has been detailed in the previous sections.

Figure 4a and 4b below illustrate how funding of S&T is distributed across the range of activities in 2001 and 2000 respectively. In 2001 education and training accounts for 51% (€899m) of the total allocation and in real terms this is an increase of 15% or €116m over the 2000 figure. Research and development retained its share of the total in 2001 at 24%, although there was an increase of €96m over the 2000 figure

Figure 4a *2001 Distribution of S&T funding by S&T activity (including earned income)*

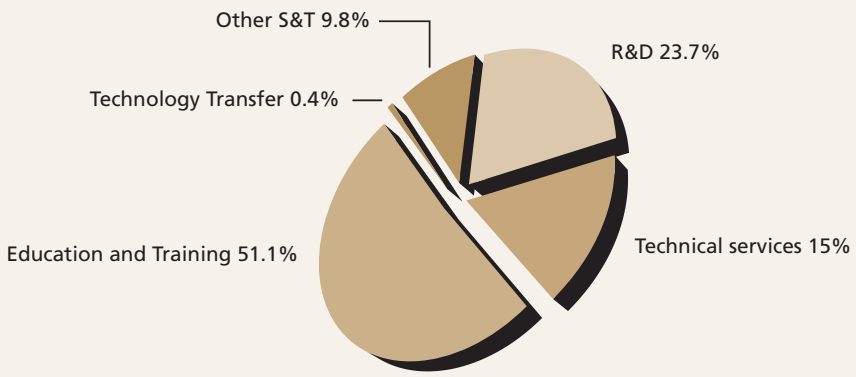


Figure 4b *2000 Distribution of S&T funding by S&T activity (including earned income)*

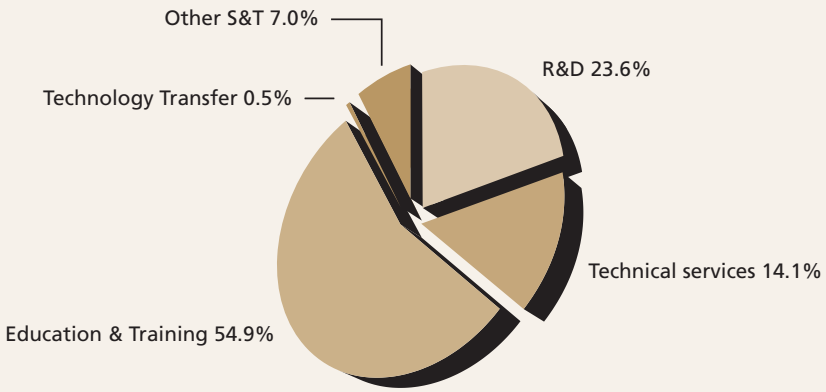
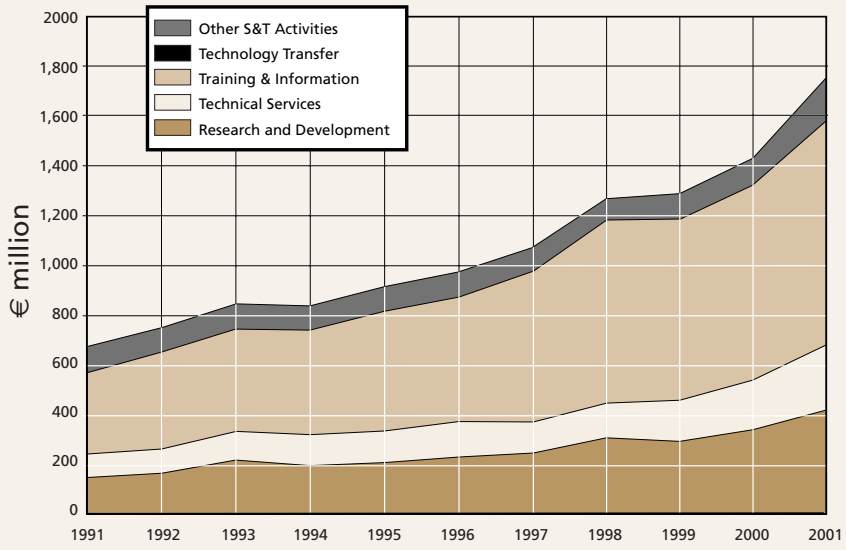


Figure 5 illustrates the trend in activity funding over time. Research and Development has seen an increase of 2% in its share of the total expenditure since 1991 (22%). Education, Training and Information has also increased from its percentage of total expenditure in 1991 (49%).

Figure 5 *Funding of S&T activities (including earned income) 2001 prices, €m*



3.6 Public Funding Trends by objective

Table 6 examines how the different objectives are funded since 1991.

In 2001, public expenditure on science and technology amounted to €1,565m. In real terms this is an increase of €1,073m over the 1991 figure. Over the past decade, the areas of Economic and Social, Marine & Forestry, General Public Services, Health, and Education and Manpower have had the most significant increases in funding. Industry had an increase of over €130m in funding mainly due to increased exchequer funding over the same period.

There has been a significant increase in exchequer funding, where the increase over 1991 funding has been four-fold. Exchequer funding in 2001 accounts for 95% of public expenditure on science and technology. CSF funding as a percentage of total public funding has decreased from a share of 21% in 1996 to 5% in 2001. However, the area of Education and Manpower received an increase in CSF funding of almost 40% over 2000 funding.

Table 6 *Public Expenditure on Science & Technology by objective, current prices **

		1991 Outturn €'000	1996 Outturn €'000	2000 Outturn €'000	2001 Allocation €'000
Education and Manpower	CSF Funding	21,883	69,378	28,838	40,062
	Exchequer Funding	191,484	327,702	720,904	894,414
	Total	**213,367**	**397,080**	**749,742**	**934,475**
General Public Services	CSF Funding		141	83	
	Exchequer Funding	42,596	57,915	98,746	210,921
	Total	**42,596**	**58,056**	**98,829**	**210,921**
Industry	CSF Funding	25,325	56,331	57,503	31,326
	Exchequer Funding	37,984	46,497	92,081	162,754
	Total	**63,309**	**102,827**	**149,584**	**194,079**
Agriculture	CSF Funding		11,249	761	1,177
	Exchequer Funding	30,861	43,214	77,605	93,020
	Total	**30,861**	**54,463**	**78,366**	**94,197**
Economical and Social	CSF Funding				
	Exchequer Funding	4,775	10,690	14,131	41,247
	Total	**4,775**	**10,690**	**14,131**	**41,247**
Marine & Forestry	CSF Funding	317	3,337	1,394	268
	Exchequer Funding	5,707	10,968	27,158	39,217
	Total	**6,025**	**14,305**	**28,553**	**39,485**
Health	CSF Funding				
	Exchequer Funding	5,436	9,767	19,554	24,093
	Total	**5,436**	**9,767**	**19,554**	**24,093**
Environment	CSF Funding	136	838	312	199
	Exchequer Funding	6,887	13,634	11,555	17,284
	Total	**7,023**	**14,472**	**11,867**	**17,483**

Table 6 *Public Expenditure on Science & Technology by objective, current prices **

		1991 Outturn €'000	1996 Outturn €'000	2000 Outturn €'000	2001 Allocation €'000
Energy	CSF Funding	338	1,068	2,561	
	Exchequer Funding	1,689	5,169	4,077	6,011
	Total	**2,027**	**6,237**	**6,638**	**6,011**
Transport	CSF Funding				
	Exchequer Funding	947	2,233	2,240	2,725
	Total	**947**	**2,233**	**2,240**	**2,725**
Total	CSF Funding	47,999	142,341	91,452	73,032
	Exchequer Funding	328,367	527,789	1,068,052	1,491,686
	Total	**376,366**	**670,131**	**1,159,503**	**1,564,717**

3.7 Matrix of Science & Technology funding sources

Figure 6 illustrates the funding sources for all S&T activities comprising the science and technology budget.

This Figure identifies the sectors in receipt of Government funds for research and development. Indirect government funds for research in the third level sector are derived from the HEA's grant-in-aid to academic departments in the universities. In 2001 it is an estimated €30.8m compared to the direct public (exchequer and CSF funds) funding of research in all third level colleges that amounts to €134.8m. The business sector also provides funds for research in the third level sector and the figures quoted here refer to business funds that match public funds for joint third level-industry research.

CSF funds allocated to support research & development amounts to €56.7m, which accounts for 78% of CSF funds allocated for science & technology. Exchequer funds are allocated to support R&D in the business sector to the value of €25.6m and a further €17.6m from CSF funds. Income from other sources for research is indicated. Receipts from EU contracts and business account for 19% of the direct funds for research in third level colleges.

3.8 Transfer payments between Departments/Agencies

The science and technology infrastructure is very complex with a range of agencies/departments donating and receiving funds from each other to fund various S&T activities. Table 7 outlines the flows of funds for 2001. Some of these flows come about when agencies are requested to carry out specific activities on behalf of another government institution, while others result from contracts won on a competitive basis.

Figure 6 *Indicative Distribution of Government Funds for Science and Technology, 2001, £m*

Sources of Funds:	Business €m	Third Level [1] €m	PATS [2] €m	Extramural €m	Government €m	Total €m	TECHNICAL SERVICES €m	TRAINING & INFO €m	TECHNOLOGY TRANSFER €m	OTHER S&T €m	TOTAL €m
Exchequer Direct	25.6	107.2	6.3	1.5	113.6	254.3	226.0	808.3	6.9	165.4	1,460.9
Exchequer Indirect	0.0	30.8	0.0	0.0	0.0	30.8	0.0	0.0	0.0	0.0	30.8
CSF Funds	17.6	27.6	10.5	0.0	1.0	56.7	1.0	14.4	0.0	0.9	73.0
EU contracts	0.0	25.5	0.6	0.0	2.0	28.1	2.0	0.2	0.1	0.0	30.5
Business	0.0	10.8	3.2	0.0	5.6	19.5	22.2	13.1	0.5	0.2	55.5
Other earned income	0.0	20.4	1.5	0.0	5.5	27.4	13.3	63.2	0.1	5.0	109.1
Total	**43.3**	**222.3**	**22.1**	**1.5**	**127.7**	**416.9**	**264.5**	**899.2**	**7.6**	**171.5**	**1,759.8**

[1] Science and Technology departments only

[2] AMT Ireland is classified under S&T information and technical services

Table 7 *Planned Transfer payments between S&T organisation for S&T activities, 2001, €'000*

From: To:	NESC	OPW	Dept. of Environ	EPA	Dept. of Educ	Dept. of Marine	Dept. of Agriculture	Dept. of Ent, T & E	Enterprise Ireland	Dept. of Pub Ent	Dept. of Soc. Wel	Dept. of Health	HRB	FÁS	Marine Institute	NRA	Coford	Forfás	Grand Total
BIM															50				50
C&RFB		70	94																164
DIAS								38							5				43
ESRI	6		641	25	183			180	100		311	976	38	135				140	2,736
Enterprise Ireland						102		50,297		4,990					11				55,400
EPA			190																190
H. E. A.			2,863				5,354	15,967							178		122		24,484
HRB												152							152
IDA Ireland								8,952											8,952
Met Éireann			18													178			196
NSAI								4,128											4,128
SFADCo								5,390											5,390
Teagasc			1,167			1,026	3,609												5,801
Údaras								1,270											1,270
Grand Total	**6**	**70**	**4,974**	**25**	**183**	**1,128**	**8,963**	**86,222**	**100**	**4,990**	**311**	**1,129**	**38**	**135**	**244**	**178**	**122**	**140**	**108,956**

See Appendix 2 for explanation of acronyms.

4 Science and Technology for the Productive Sectors

Volume 2 of the *Science and Technology Budget* presents data on R&D across the whole public sector. In this section we look at other science and technology (S&T) activities, apart from R&D, which are performed in support of the productive sectors of the economy. The sectors considered are industry, agriculture, environment, energy, transport and the marine & forestry areas.

4.1 Industry

Table 8 shows the S&T allocations (including earned income) to various government departments and agencies to support industrial activity. FÁS, providing industrial training programmes, accounts for almost 50% of the total. This is an increase of 31% over 2000.

Enterprise Ireland accounts for about one fifth of the total, providing a range of services in industrial technologies for enterprises as well as aids to technology transfer through its Technology Transfer and Partnerships programme and the Technology Placements programmes (Techstart and Techman).

Table 8 *2001 Science & Technology Allocations (including earned income) by Industry objective*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
FÁS		61,704			61,704	47,054
		100%			100%	31%
Enterprise Ireland	17,088	2,479	3,174	1,785	24,526	23,898
	70%	10%	13%	7%	100%	3%
National Standards Authority of Ireland	16,543				16,543	15,733
	100%				100%	5%
Department of Enterprise, Trade & Employment		1,045		8,901	9,946	8,430
		11%		89%	100%	18%
Teagasc	2,122	193	3,278		5,593	3,324
	38%	3%	59%		100%	68%
Patents Office		3,488		41	3,529	3,590
		99%		1%	100%	-2%
Shannon Development		2,603			2,603	2,096
		100%			100%	24%

Agency/ Department	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
	€'000	€'000	€'000	€'000	€'000	€'000
	% activity	% activity	% activity	% activity	% activity	% change
Forfás	750				750	669
	100%				100%	12%
National Microelectronics Applications Centre	98	112	56	70	336	194
	29%	33%	17%	21%	100%	73%
Total	**36,602**	**71,624**	**6,509**	**10,797**	**125,531**	**104,988**
	29%	**57%**	**5%**	**9%**	**100%**	**20%**

4.2 Agriculture

Table 9 shows the S&T allocations (including earned income) to government departments and agencies to support activities in the agriculture area. The major players here are Teagasc (54%) and the Department of Agriculture, Food and Rural Development (46%). Teagasc provides professional advice to farmer clients at enterprise level dealing with dairying, cattle, tillage crops, horticulture, financial management, agri-tourism, farm modernization, environmental conservation/control of farm pollution, winter feed quality and overall farm management. Programme support includes the provision of specialist training to advisers to enable them to keep abreast of S&T developments. The Department operates a number of veterinary laboratories, three dairy science laboratories, as well as classification, testing and certification schemes in relation to meat and crop production.

Table 9 *2001 Science & Technology Allocations (including earned income) by Agriculture objective*

Agency/ Department	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
	€'000	€'000	€'000	€'000	€'000	€'000
	% activity	% activity	% activity	% activity	% activity	% change
Teagasc	2,707	39,210	387	773	43,077	38,986
	6%	91%	1%	2%	100%	10%
Department of Agriculture, Food & Rural Development	34,063	293		3,085	37,441	30,790
	91%	1%		8%	100%	22%
Total	**36,769**	**39,503**	**387**	**3,858**	**80,517**	**69,776**
	46%	**49%**	**<1%**	**5%**	**100%**	**15%**

4.3 Environment

Table 10 shows the science and technology allocations (including earned income) for activities broadly categorised as environment-related. The major components are the specialist advice, monitoring and laboratory services, waste licensing and enforcement and other activities of the Environmental Protection Agency and the Radiological Protection Institute of Ireland.

Table 10: *2001 Science & Technology Allocations (including earned income) by Environmental objective*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
Environmental Protection Agency	15,046	1,651		317	17,014	13,121
	88%	10%		2%	100%	30%
Radiological Protection Institute of Ireland	425	849			1,274	1,183
	33%	67%			100%	8%
Dept. of Arts, Heritage, Gaeltacht & the Islands	914				914	686
	100%				100%	33%
Dept. Environment & Local Government	61	36			97	104
	63%	37%			100%	-7%
Total	**16,446**	**2,536**		**317**	**19,299**	**15,094**
	85%	**13%**		**2%**	**100%**	**28%**

4.4 Marine and Forestry

Table 11 shows the science and technology allocations (including earned income) for activities in the marine, fisheries and forestry areas.

Scientific and technical services now accounts for 90% of the total expenditure with the majority of the spending undertaken by the Marine Institute. The Marine Institute provides a data and information management service which aims to strengthen the overall quality, service and performance of marine data and information management at a national and international level.

An Bord Iascaigh Mhara's training programmes are geared to developing practical skills with respect to efficiency, safety, and management functions in order to support the maintenance and expansion of sustainable employment in sea fishing, aquaculture, processing and distribution.

Enterprise Ireland, in the forestry section, provides technical advice, consultancy services, training and assistance with new product and process development was provided to the Irish timber industry to identify opportunities for Irish timber and develop new applications and standards.

Table 11 *2001 Science & Technology Allocations (including earned income) by Marine & Natural Resources objective*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
Marine Institute	17,610				17,610	14,069
	100%				100%	25%
Bord Iascaigh Mhara	450	1,681			2,131	330
	21%	79%			100%	545%
Central & Regional Fisheries Board	2,032				2,032	1,654
	100%				100%	23%
Enterprise Ireland	1,453				1,453	1,219
	100%				100%	19%
COFORD		29	254	444	728	621
		4%	35%	61%	100%	17%
Total	**21,544**	**1,710**	**254**	**444**	**23,952**	**17,893**
	90%	**7%**	**1%**	**2%**	**100%**	**34%**

4.5 Energy

Table 12 shows science and technology allocations (including earned income) for activities related to energy. The major element here is the energy technology promotion activities of the Irish Energy Centre in Enterprise Ireland. The Department of Marine and Natural Resources operate an Exploration and Mining Division and a Petroleum Affairs Division, which provides the technical expertise necessary for promotion, monitoring and controlling of petroleum exploration and development activities by private enterprise under licence to the Department.

Table 12 *2001 Science & Technology Allocations (including earned income) by Energy objective*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
Enterprise Ireland	2,977	2,013			4,990	6,360
	60%	40%			100%	-22%
Dept. of Marine & Natural Resources	1,271			24	1,295	772
	98%			2%	100%	68%
Total	**4,248**	**2,013**		**24**	**6,285**	**7,132**
	68%	**32%**		**<1%**	**100%**	**-12%**

4.6 Transportation

Table 13 shows science and technology allocations (including earned income) in support of national transportation objectives. The activity relates to the work of the National Roads Authority in planning and supervising the construction, improvement and maintenance of the network of national roads. It amounts to €2.3m overall, an increase of 43% over 2000.

Table 13 *2001 Science & Technology Allocations (including earned income) by Transportation*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
National Roads Authority	1,771	460	116		2,346	1,637
	75%	20%	5%		100%	43%
Total	**1,771**	**460**	**116**		**2,346**	**1,637**
	75%	**20%**	**5%**		**100%**	**43%**

5 Education and Health Activities

The S&T Budget incorporates data relating to scientific and technological activities undertaken in a broader social context. The major components of this relate to educational and health activities.

Table 14 shows the science and technology allocations (including earned income) for education and training activities. The administering of funding by the Higher Education Authority and the Department of Education and Science for S&T courses, in the universities and institutes of technology respectively, are the major performers.

The total allocation for Education & Training (including earned income) in 2001 is €841.3m, an increase of €133.5m over the 2000 figure. This increase is mainly due to the additional allocations for training & education by the Department of Education and Science

- €44.1m to the Institutes of Technology,
- €28.8m for VEC and Schools IT programmes
- €16.4 m for S&T Education Investment Fund (capital)
- €19.8m ERDF Supported Capital

There was an increase of €13.3m from the HEA for General Support for Education & Training.

Table 14 *2001 Science & Technology Allocations (including earned income) by Education & Training objective*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
Dept. of Education and Science		492,713		135	492,848	381,127
		100%		<1%	100%	29%
Higher Education Authority		262,654		79,216	341,871	321,717
		77%		23%	100%	6%
Postgraduate Medical & Dental Board		5,295			5,295	4,177
		100%			100%	27%
Dublin Institute for Advanced Studies		669		10	679	710
		99%		1%	100%	-4%

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
Enterprise Ireland				254	254	0
				100%	100%	n/a
Dept. of Marine & Natural Resources	8	15			23	17
	33%	67%			100%	38%
Economic & Social Research Institute		13			13	9
		100%			100%	43%
Total	**8**	**761,359**		**79,615**	**840,982**	**707,757**
	<1%	**91%**		**9%**	**100%**	**19%**

Activities in the area of health are shown in Table 15. Science and technology activities in the Health sector are dominated by the activities of the Department of Health and Children. In the Department of Health and Children, the training and information services of €6.6m relate mainly to Advisory and Information Services and General Support and €1.1m to the activities of the National Cancer Registry Board.

The Department employs consultants to study and advise on various aspects of the health services, participates in the S&T activities of the World Health Organisation and other international organisations.

The National Cancer Registry Board researches and analyses information relating to the incidence and prevalence of cancer and related tumours in Ireland and promotes and facilitates the use of data collected in approved research projects and in planning and management of services.

Table 15 *2001 Science & Technology Allocations (including earned income) by Health objective*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
Dept. of Health and Children	229	7,811		28	8,069	6,568
	3%	97%		<1%	100%	23%
Radiological Protection Institute of Ireland	432	432			865	848
	50%	50%			100%	2%
Health Research Board	590	97			687	568
	86%	14%			100%	21%
Total	**1,252**	**8,340**		**28**	**9,621**	**7,984**
	13%	**87%**		**<1%**	**100%**	**20%**

6 General Public Service Activities

This area is concerned with science and technology activities undertaken by the Government in support of regulatory and statutory activities. These are listed in Table 16.

Science and technology expenditure by the Department of Public Enterprise is incurred by the Geological Survey of Ireland and Met Éireann, which are line divisions of the Department. The Department also provides funding through Grant-in-Aid to the Radiological Protection Institute of Ireland. In 2001 the Government decided to transfer responsibility for the Digital Hub and MediaLab Europe projects to the Minister for Public Enterprise. The allocation in 2001 for MediaLab Europe and the Digital Hub is €60m.

The Central Statistics Office is responsible for the collection, processing and dissemination of official statistics to meet the statistical requirements of Government departments, other public bodies, the EU, businesses, universities, research institutes and the general public. In 2001 the CSO allocated €20.8m to demography.

Ordnance Survey Ireland (OSI) is the national mapping agency. Its primary role is to provide and maintain topographic information for the public and private sectors. In the table below the scientific & technical services of €20.9m relate to Mapping & Related Activities.

Met Éireann provides meteorological information on a routine basis to the media and the general public. More detailed information and special advice is also available directly to agricultural and marine interests, for legal and commercial purposes, to the aviation sector, for off-shore oil exploration and to other specialised interests as required. A warning service is provided for gales and other weather phenomena of a hazardous nature. Much of this information is supplied on a commercial basis. The Service also makes available a wide range of climatological and geophysical data in the form of bulletins, brochures and regular publications.

Table 16 *2001 Science & Technology Allocations (including earned income) by General Public Services objective*

	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
Agency/ Department	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
	% activity	**% activity**	**% activity**	**% activity**	**% activity**	**% change**
Dept. of Public Enterprise	23,140			59,678	82,817	20,252
	28%			72%	100%	309%
Central Statistics Office	45,113				45,113	29,276
	100%				100%	54%
Ordnance Survey Ireland	20,895				20,895	14,048
	100%				100%	49%

Agency/ Department	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
	€'000	€'000	€'000	€'000	€'000	€'000
	% activity	% activity	% activity	% activity	% activity	% change
Met Éireann	7,331	7,792	372	574	16,070	13,695
	46%	48%	2%	4%	100%	17%
Office of Public Works				14,789	14,789	5,561
				100%	100%	166%
Geological Survey of Ireland	13,497				13,497	9,234
	100%				100%	46%
State Laboratory	5,323	117			5,440	4,810
	98%	2%			100%	13%
Forfás		2,533			2,533	1,769
		100%			100%	43%
Dept. Environment & Local Government	1,063	6			1,069	1,566
	99%	1%			100%	-32%
Radiological Protection Institute of Ireland	184	183			367	263
	50%	50%			100%	40%
Central & Regional Fisheries Board					0	70
						n/a
Total	**116,546**	**10,631**	**372**	**75,040**	**202,590**	**100,544**
	58%	**5%**	**<1%**	**37%**	**100%**	**101%**

7 Economic and Social Activities

This area is concerned with science and technology activities undertaken by the Government in support of economic and social activities. These are listed in Table 17.

Table 17 *2001 Science & Technology Allocations (including earned income) by Economic and Social objective*

Agency/ Department	Scientific & Technical Services	Training & Information	Technology Transfer	Other Activities	Total	2000 Outturn
	€'000	€'000	€'000	€'000	€'000	€'000
	% activity	% activity	% activity	% activity	% activity	% change
Economic & Social Research Institute	2,018	329			2,346	2,011
	86%	14%			100%	17%
Dept. Social, Community & Family Affairs	27,301	669		1,401	29,370	4,676
	93%	2%		5%	100%	528%
National Museum of Ireland		3		19	22	10
		12%		88%	100%	113%
Total	**29,318**	**1,001**		**1,420**	**31,738**	**6,698**
	92%	**3%**		**4%**	**100%**	**374%**

The activities of the Economic and Social Research Institute (ESRI) and the Department of Social, Community, and Family Affairs dominate Science and technology activities in the Economic and Social sector with consultancy assignments and studies accounting for €27.3m. The ESRI activities 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.

Appendix 1

Methodology & Definitions

Appendix 1
Methodology and Definitions

Methodological Note

The information given in this document relates to 40 institutions in receipt of monies from the exchequer for the performance or support of scientific, technological and related activities in every field and is based on the information supplied by these institutions.

In order to ensure consistency of analysis the database has been adjusted back to 1990 to take account of changes that agencies/departments have recorded.

In general, institutions and information relating to them are listed separately. In a few cases an institution is listed with its parent department or organisation but identified separately.

Where practicable the programmes of the various institutions have been separated and categorised in accordance with international practice into relevant scientific and technological activities i.e.:

- research and development (R&D)
- information and specialist advisory services
- scientific and technical services
- training (including courses), and
- technology transfer.

However, in many instances, especially in institutions with few staff, institutions operate several programmes jointly, sharing resources in an administratively appropriate unit. In these circumstances the programmes, as described here, do not represent truly independent programmes. Consequently, the data should be interpreted with caution if expansions or contractions are being considered.

Expenditure data for specific programmes refer to the 2000 outturn costs of programmes and to the expected costs in 2001. The outturn costs are mainly funded by matching grant-in-aid or voted monies. Where programmes are funded in other ways these monies are noted separately. In these instances the expenditure (cost) data shown includes both exchequer and other income contributions.

Expenditures are based on unaudited figures, except in a few cases where they are identical with a Vote by the Oireachtas. For convenience, general overheads, where shown, are distributed in proportion to programmes' expenditures. Programmes are attributed to the institution most directly involved, that is to those actually operating them, but not necessarily funding them. An example of the latter is the Department of Enterprise, Trade and Employment, which funds, but does not operate or manage many programmes. Only their own administrative costs are attributed to the funding institutions in such cases.

Numbers of staff involved on individual S&T programmes are shown only where a reasonable subdivision is possible. Where institutions are involved in funding a large number of external R&D (or similar) personnel, data on these external personnel are not given.

In some cases it is possible to give an indication of output, e.g. numbers of grants awarded, samples analysed etc. per annum. The information given relates to 2001 unless otherwise stated.

Apportionment problems arise in the third level sector (mainly the monies distributed by the Higher Education Authority and the Department of Education and Science to Institutes of Technology). In the case of the HEA, total funds are first apportioned between S&T faculties and non-S&T faculties in the colleges. (Expenditure on non-S&T faculties is not included in this document).

The extent and cost of the R&D work undertaken in colleges, and funded out of the HEA's general block grant, is determined indirectly from surveys of academic staff in colleges. These surveys are carried out by Forfás on a multi-annual basis and the corresponding cost data are, of necessity, based on historical estimates. The HEA funding of academic departments was isolated from administration and support services within colleges. Co-efficients of research time derived from Forfás surveys are now applied to funding of academic departments only, not including the administration and support services as had been included in the past. In the case of ITs, costs are apportioned between S&T departments and second level activities; the latter are not included.

Definitions of S&T Activities

i) **Research:** Original, experimental or theoretical investigations undertaken to acquire new knowledge, with or without a particular application or use in view.

ii) **Development:** Systematic work drawing on existing knowledge gained from research and/or practical experience, that is directed to producing new products, processes, systems, services, varieties and breeds and to improving substantially already existing ones. Data collection conducted solely or primarily as part of the research and development (R&D) process included under "research" or "development" as appropriate.

iii) **Information and Specialist Advisory Services:** Provision of information via **formalised scientific and technical information and documentation (STID) services** includes all expenditure (manpower and materials) involved in acquiring, controlling or transmitting information to users with the involvement of staff whose primary function is in formalised STID services, e.g. provision of S&T information, advice, liaison.

Specialist advice, information analysis, libraries, publications and documentation services, translations, technical seminars and conferences. Provision of information **via non-formalised STID services** includes expenditures on providing know how and expertise by members of staff who, while not specifically engaged in formalised STID services, provide specialist advice, liaison, consultancy or other general information services.

iv) **Technical Services:** Specialised support services of a scientific or technical nature generally provided by centralised laboratories or facilities, and can be of a routine or non-routine nature. Essentially they comprise the technical back-up analytical, diagnostic and data collection/processing services.

v) **Training:** Education and training of third level or equivalent students in science and technology disciplines.

vi) **Technology Transfer:** Activities which are directed solely or primarily towards the transfer and adoption of new technology, generally in enterprises. The horizontal transfer of technology, primarily from abroad, but also from colleges to enterprises is included here.

vii) **Other S&T Activities:** Activities which cannot be conveniently grouped under the above headings can be included here e.g. grants to international organisations, policy planning units etc.

viii) **Extramural Expenditure:** Monies spent on S&T activities carried out on behalf of the reporting institution by a third party.

Other Definitions

ix) **Third Level Education:** All Universities and Institutes of Technology.

x) **Public Funds:** Exchequer monies and funds from the Community Support Framework.

Appendix 2

Index of Acronyms

Appendix 2
Index of Acronyms

BIM	Bord Iascaigh Mhara - The Irish Sea Fisheries Board
C&RFB	Central and Regional Fisheries Boards
COFORD	National Council for Forest Research and Development
CSF	Community Support Framework
CSO	Central Statistics Office
DACG	Department of Arts, Heritage, Gaeltacht and the Islands
Dagri	Department of Agriculture, Food and Rural Development
Deduc	Department of Education and Science
Dept Ent, T & E	Department of Enterprise, Trade and Employment
Dept of Environ	Department of the Environment and Local Government
Dept of Pub Ent	Department of Public Enterprise
DIAS	Dublin Institute for Advanced Studies
DMar	Department of the Marine and Natural Resources
Dept Soc Wel	Department of Social, Community and Family Affairs
EAGGF	European Agriculture Guidance and Guarantee Fund
EPA	Environmental Protection Agency
ERDF	European Regional Development Fund
ESF	European Social Fund
ESRI	Economic and Social Research Institute
EU	European Union
FÁS	FÁS - the National Training and Employment Authority
Forfás	Forfás
GSI	Geological Survey of Ireland
HEA	Higher Education Authority
HRB	Health Research Board
IDA	Industrial Development Agency Ireland
Innov Centre	Innovation Centre
MAC	National Microelectronics Applications Centre
NAB	National Accreditation Board
NESC	National Economic and Social Council
NMRC	National Microelectronics Research Centre
NRA	National Roads Authority
NSAI	National Standards Authority of Ireland
OPW	Office of Public Works
OST	Office of Science and Technology - Department of Enterprise, Trade and Employment
RPII	Radiological Protection Institute of Ireland
SFADCo	Shannon Development
Udaras	Údarás na Gaeltachta

Appendix 3

Institutions' Programmes

Appendix 3: Institutions' Programmes

INDEX **Page No.**

Department of Agriculture, Food and Rural Development

The Department of Agriculture, Food and Rural Development is concerned with the development of the agriculture and food industries, through administration of public services in connection with promotion of farm improvement, participation in international activities, including administration of EU schemes, and UN Agency activities.

The Department is responsible for the operation of land policy. The Department operates a number of testing centres and laboratories, in the areas of veterinary diagnostics and research, meat control, seed testing, plant variety testing, cattle performance testing, pesticide control and dairy products control. State-sponsored bodies which come under the statutory responsibility of the Minister for Agriculture, Food and Rural Development include Teagasc – the Agriculture and Food Development Authority, An Bord Bia and Bord Glas.

The main national aims are to improve quality and productivity and to encourage better market orientation in farming through training, research and advisory measures and to encourage Teagasc to undertake a strategic review in this regard. These aims are reflected in the following areas:

Rural Development

The Department is committed to a wider view of rural development, which embraces both farm and other enterprises in rural areas, and which is focused on addressing the issue of rural poverty and the promotion of a vibrant economy in rural areas. This commitment includes support for research on rural development issues.

Environment

The need to develop a more fully integrated policy on agriculture and the environment is one of the key challenges for the Department. The Control of Farm Pollution measure, the Rural Environment Protection Scheme and the Organic Farming Development Scheme are the principal means by which the Department is trying to encourage more environmentally friendly farming. Education and training courses run by Teagasc are being used to promote greater consideration for the environment.

Food Safety

The Department is committed to implementing a safety and quality assurance regime by controlling veterinary medicines and plant protection products. In addition, the Department operates appropriate food safety monitoring, surveillance and inspection programmes under a service contract with the Food Safety Authority of Ireland. To achieve this goal, the Department's meat and dairy inspection services have a presence in processing and storage plants throughout the country. As a back up to these services the Department operates three dairy laboratories, a meat laboratory and a pesticides laboratory, where samples of product are analysed for quality and safety. The State Laboratory is also used where necessary.

	€'000	
	2000	2001

International Framework

The Department is committed to contributing to Ireland's international development aid effort through appropriate policy stances at, and financial contributions to, international agricultural organisations (FAO, WFP, IFAD) and through advice and assistance to Irish Aid and Irish NGOs. It also participates in the work of international standard setting bodies concerned with plant protection (IPPC), animal health and welfare (OIE), and food safety and trade (Codex Alimentarius).

Breakdown of the Department's 2001 Vote

The Vote of the Department of Agriculture, Food, and Rural Development in 2001 is estimated at €1,322.4m i.e. a gross total of €1,449.9m less appropriations-in-aid of €127.5m. General departmental administration costs are estimated at €223.5m. The grant-in-aid to Teagasc for general expenses (including capital) relating to research, training and advisory services is set at €96.2m, approximately two-thirds of which is likely to be devoted to STI-type activities. Teagasc will also receive other public funding in 2001 including approximately €12.4m Exchequer funds for training under the National Development Plan 2000 – 2006. It is expected that Teagasc will receive about €3.15m from the allocation for food research under the Productive Sector OP of the NDP 2000 – 2006 (for which it must compete).

The following is a breakdown of expenditure data, which does not include the Department's own general overheads:

RESEARCH, DEVELOPMENT AND DEMONSTRATION

Improvement of Crops:

2,261	2,249

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, and the carrying out of trials in farmers' fields throughout the country.

Veterinary and Meat Laboratory Services

1,747	1,868

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.

Receipts amounting to €584,079 were received in respect of the veterinary laboratories in 2000, and €533,290 is expected in 2001.

Institutional Food Research

11,431	7,943

In its implementation of the Food Institutional Research Measure of the RTDI component of the Productive Sector OP under the NDP 2000 – 2006, the Department is involved in the management of competitive tendering by Food Research Institutions for grant aid to support food research in priority areas. It monitors the progress of successful projects, pays grant aid on foot of demonstrated progress and evaluates the programme on an on-going basis.

	€'000 2000	2001
Agricultural Production Research	223	689
This is the "Research Stimulus Fund" Measure of the Productive Sector OP of the NDP 2000 – 2006 which encourages co-operative research in agricultural production. This involves management of competitive tendering by Research Institutions for grant aid to support agricultural research projects in priority areas, monitoring the progress of successful projects, payment of grant aid and evaluation of the programme.		
Improvement of Livestock	528	764
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.		
Genetic Resources in Plants and Animals	55	68
Operation of an Advisory Committee on Genetic Resources for use in Agriculture including making recommendations regarding the selection of research projects for the award of grant aid.		
International Co-operation: US-Ireland Programme	89	171
This component of the Department's expenditure under the general heading of "International Co-operation" relates to Irish side grant aid to researchers – mainly from Teagasc and UCD – who are participating in the US-Ireland Programme of Co-operation in Agricultural Science & Technology. This bilateral programme provides opportunities for agricultural researchers from the US and Ireland working independently in the same research area to achieve greater progress through sharing their knowledge and pooling their resources by spending a period of time working in each others' institution.		

TRAINING, EDUCATION AND INFORMATION

Publicity and Library Services	218	268
Providing access to information for the staff of the Department and disseminating science and technology information to farmers, agribusiness and consumers.		
Operation of a library service at the Headquarters of the Department in Dublin and at various decentralised locations; Mounting exhibits / stands at various events such as Shows, Agricultural Events, Ploughing Championship etc.; Public dissemination of various reports and documents.		
Genetic Resources in Plants and Animals	20	25
Promotion of awareness of the need for conserving genetic resources and participation in the FAO Global Programme and EU Programme under Council Regulation (EC) No. 1467/94 related to genetic resources.		

TECHNICAL SERVICES

	€'000 2000	2001
Improvement of Crops:	4,200	4,200

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 publishing of recommended lists of varieties; operation of seed certification schemes; operation of a laboratory and farm for producing disease free potato foundation breeding stock at Raphoe, Co. Donegal; and administration of the international systems of Plant Breeders Rights and Catalogues of Varieties in Ireland.

Income from crop improvement services – comprising, in the main, receipts from seed testing, certification, licensing, and registration fees amounted to €1.34m in 2000 and is expected to total €1.24m in 2001.

Improvement of Livestock	2,997	4,334

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 data analysis and calculation of breeding value estimates for animals and publication of results; approval of animals for breeding purposes and participation in various international fora related to animal breeding. A portion of this expenditure is extramural in nature as it relates to payment transfers by the Department mainly to the Irish Cattle Breeding Federation, the Irish Horse Board Co-op and the International Equine Institute. These are used to fund the administration costs of these organisations as well as 'technical service' type schemes aimed at improving the quality and genetic merit of cattle and sport horses in Ireland.

Income relating to these activities – mainly license / testing fees – amounted to €167,605 in 2000 and is expected to total €165,066 in 2001.

National Beef Assurance Scheme	1,384	3,809

EU regulations require all Member States to establish a bovine animal traceability system to assure the quality and safety of beef. Under the development phase of this exercise the Department is funding the development of information and communication facilities with all elements of the trade including the installation of IT systems at livestock marts, meat factories and live animal export points throughout the State.

Classification of Meat Carcasses	2,609	2,598

Under Commission Regulation 1186/90 it is compulsory for all EU approved slaughterhouses to classify cattle slaughtered in accordance with a common Community System. The basic aims of the scheme, which is implemented and monitored by Department personnel, are:

- To make price quotations comparable throughout the EU
- To fix the guide price for carcasses on a slaughter weight basis
- To fix a single intervention price throughout the Community for each quality of meat eligible for intervention

	€'000 2000	2001
EU Council Regulation 2137/92 as amended provides for the implementation of an EU wide lamb carcass classification scheme which defines lamb carcasses in terms of conformation and fat cover. The classification is carried out by trained factory personnel and monitored by Department staff. Expenditure to date has been on training courses for factory personnel and publicity of the scheme.		
Veterinary and Meat Laboratory Services The Department's Central Veterinary and Regional Laboratories and its Central Meat Control Laboratory at Abbotstown, Co. Dublin provides laboratory support for Department Officers at meat plants. It is primarily engaged in testing for residues of illegal substances, and microbiological testing of samples from meat plants.	9,899	10,585
Analysis of Feedingstuffs / Fertilisers: Feedingstuff regulations provide that the officers of the Department take samples of feedingstuffs / fertilisers at various locations – farms, distribution centres, manufacturing plants – and these are analysed at the State Laboratory and/or Department laboratories for various characteristics to check on compliance with various standards laid down, declared make-up / ingredients as the case may require.	471	598
Pesticide Control Service The Pesticide Control Service acts as the regulatory authority for pesticides (plant protection products and biocides) in Ireland. The PCS is responsible for the authorisation or clearance of pesticides for marketing / use and for the control of the levels of pesticide residues remaining in food and feed. All the work of the PCS derives from legislation which, in the main, serves to implement EU Directives. Income from fees was €553,606 in 2000 with €954,843 expected in 2001.	1,133	1,628
Dairy Science Testing Service Health protection and quality control measures for milk and dairy products, (i.e. bacteriological and chemical analyses of samples) aimed at the maintenance of quality standards and hygiene in the production of milk and dairy products, as required under Council Directive 92/46/EEC and the implementing legislation are the main functions of the Dairy Science Laboratories. In addition to operation of the three Dairy Science Laboratories (in Dublin, Cork, and Limerick), the Department operates a Dairy Inspection Service whereby farms, processing facilities and products are inspected and certified as meeting various standards laid down. The dairy inspection levy of an amount per gallon of milk supplied by farmers (currently 0.1 cent/litre) is collected by milk purchasers and is calculated to cover all costs of the dairy laboratory and the dairy inspection services. The Dairy Inspection Fee which yielded €5.2m in 2000 and estimated at €5.4m in 2001 is intended to recoup the cost not only of these laboratories but also of the entire dairy inspection and control regime.	5,061	4,986

	€'000 2000	2001
Genetic Resources in Plants and Animals	61	76
Development and conservation in the area of genetic resources for use in agriculture. Applied developmental research designed to identify non-compliance with specified criteria relating to relevant plant species / varieties and animal breeds.		
Organic Farming	213	1,249
The Department supports the development of organic farming through grant-aid to the organic farming organisations such as IOFGA (Irish Organic Farmers and Growers Association) and technical support on the part of its own staff with the primary aim of ensuring the provision of an inspection service for the granting of approved organic farming status.		
Under the Agricultural Development component of the Productive Sector OP of the NDP 2000 – 2006, development of organic farming is supported by the allocation of grant aid for the provision of grading, packing, storage and distribution facilities for organic produce and for supporting the adoption of organic farming practices.		

OTHER S&T ACTIVITIES

International Co-operation	1,271	1,458
Co-operation in international technical programmes is the main purpose of this activity. This extramural type expenditure covers membership contributions to international organisations including: the Food and Agriculture Organisation of the United Nations (FAO); the European and Mediterranean Plant Protection Organisation (EPPO); the Union for the Protection of New Varieties of Plants (UPOV); the International Veterinary Bureau (OIE); the European Association for Animal Production (EAAP); and the FAO / European Co-operative Programme for Plant Genetic Resources (ECP/PGR). Participation in FAO Associate Professional Officer Scheme is also funded.		
Land Parcel Identification System (LPIS)	1,252	1,252
The Department is in the latter stages of developing, in association with an outside firm of consultants, a computer based mapping system wherein each land parcel (field) in the country is uniquely identified and has its size, annual usage and ownership / user recorded. Basic information used includes Ordnance Survey maps, declarations of usage and claims for aid made by farmers and aerial photography.		
This Land Parcel Identification System is required as part of the EU Integrated Administrative Control System (IACS), but will have multiple uses across many activities of the Department.		
Rural Development	-	376
Arising from the White Paper on Rural Development, a Rural Development Fund has been established under the National Development Plan 2000 – 2006. The Fund will finance research, evaluations and pilot actions, where appropriate, to provide information and advice to policy makers. The research should provide critical feedback in relation to such issues as: assessing the impact, effectiveness and complimentarity of sectoral policies and		

	€'000	
	2000	2001

institutional arrangements; quantifying and gathering data on trends, examining structural change and issues impacting on the rural community; identifying income and employment opportunities, and examining gender issues and issues relating to rural inclusion.

TRANSFERS TO OTHER GOVERNMENT AGENCIES

In general, funds transferred by the Department to other Government agencies comprise grant payments to Teagasc and third level institutions for R&D activities under (1) the Institutional Food Research Programme, (2) the Research Stimulus Fund, and (3) the Irish side of the U.S. / Ireland Co-operation Programme in Agricultural Science and Technology.

	€'000	
	2000	2001

Teagasc

Teagasc - the Agriculture and Food Development Authority - is the national body providing advisory, research, education and training services to the agriculture and food industry. It was established under the Agriculture (Research, Training and Advice) Act, 1988.

An eleven-member Authority governs Teagasc. The Minister for Agriculture, Food and Rural Development appoints the Chairperson and five ordinary members. The Minister, following nominations from designated organisations, also appoints the remaining members.

Teagasc also undertakes an extensive farm advisory service, with a total current budget of €36.7m in 2001. It has other activities relating to education and training, but in accordance with international definitions of science and technology, these are not included in the science budget.

Teagasc 2000

The Teagasc medium-term plan, *Teagasc 2000*, provides the framework for the research programme to be implemented in 2001. This plan is relevant to the changing needs of the Irish agri-food industry, is market-led and designed to support Irish agriculture and food within the framework of government policies and priorities. In particular, the plan underpins national objectives for the agri-food sector as enunciated in the National Development Plan 2000-2006 and specifically in the Productive Sector Operational Programme, including the Food Institutional Research Measure of the Programme.

In line with these objectives, the 2001 research portfolio features a significant food processing industry component, specifically taking cognisance of the demand for safe and quality food in an increasingly affluent Europe. The programme also places a strong emphasis on research relating to the rural environment, animal health and welfare and policy analysis. It also includes a number of traditional production research objectives, reflecting the need to ensure the ongoing competitiveness of Irish agriculture. Most significantly, in light of the €31.7 million funding made available in 2000 to retool the research capabilities of Teagasc, the programme features an enhanced level of activity in biotechnology. The prioritisation of biotechnology in 2001 reflects the importance attached to this technology for the agri-food sector in the *Agrifood 2010 Main Report* and the national importance of the technology as reflected in the Technology Foresight Fund. The new funding made available to Teagasc will enable the organisation to invest in new staff, laboratories and equipment which will enhance its scientific capacity and enable it to continue to provide into the future the vital scientific and technological leadership for the agriculture and food industry.

The research programme is complemented by the delivery of a wide range of technical services to the various sectors of the agri-food industry:

Research in Sustainable Agriculture and Rural Development	27,698	34,332

The research programme in Sustainable Agriculture and Rural Development, comprising 192 projects in 2001, aims to maximise farm incomes and employment in rural areas. The priorities are to:

	€'000	
	2000	2001

- Develop low cost grass-based production systems for milk, suckler beef and lamb of the required quality and safety that have minimum impact on the environment and which are conducive to both animal health and welfare.
- Develop nutritional regimes for the efficient production of consistent quality milk, beef, sheep and pig meats.
- Improve the reproductive efficiency of farm animals, in particular high yielding cows, and identify the most suitable breeds and/or genotypes for different feed and management systems.
- Use advances in biotechnology to establish a better understanding of animal reproduction mechanisms; identify genetic markers to improve animal breeding, disease resistance, growth efficiency, and quality of meat and milk products.
- Develop management systems to promote positive herd health and welfare so as to efficiently produce safe and quality food.
- Use advances in biotechnology to develop new diagnostic tests for animal diseases.
- Develop improved crop production systems with particular regard to increased efficiency while improving product quality and minimising environmental impacts.
- Assess both the agronomic performance and environmental risks of growing genetically modified crops under Irish conditions.
- Use advances in biotechnology to develop new diagnostic tests for plant diseases and to identify genetic markers to improve plant breeding, disease resistance and growth efficiency in grasses, white clover and potatoes.
- Develop agricultural systems that are both economically and environmentally sustainable, with particular attention to quantifying and modeling the agronomic performance and environmental impacts of the systems, including REPS, in different geographical locations.
- Assess factors affecting dry matter production, animal health and product quality in organic farming.
- Project the impact of policy developments on the agri-food industry and on the economic performance of farm enterprises and consumer markets and their implications for the competitiveness of the sector.
- Provide the strategic knowledge base to support the continued viability of rural areas by developing models to project the future structure of rural areas, including the impact of policy, demographic and other changes.

Food Processing

10,203	17,164

The objectives of the food processing research, associated technology development services and training programmes are to ensure that the highest standards of safety, quality and nutrition are consistently achieved in food products, and to provide the necessary scientific and technological enabling capacity in food products and ingredients. The priorities are:

Food Safety

- Develop preventative measures to ensure the microbiological and chemical safety of Irish food products.
- Assist the industry to put in place effective food safety assurance systems, both on farms and in food companies.

	€'000	
	2000	2001

Cheese, Fermented and Other Dairy Products

- Improve the consistency, flavour, texture, functionality and yield of cheeses and fermented dairy products and the stability, shelf life, microbiological quality and safety of short life cheeses and fresh dairy products.
- Harness advances in biotechnology to develop improved food cultures and novel enzymes to enhance the quality and safety of food products.

Food Ingredients

- Identify the compositional and processing determinants of the functionality of food ingredients.
- Develop technologies which improve the functional and nutritional attributes of ingredients.
- Use new developments in biotechnology to produce nutritional and functional food ingredients and natural anti-microbial agents in animal production.

Meat Products

- Develop technologies for the efficient production of fresh meat products of consistent quality, and convenience meat products that are both wholesome and nutritious.
- Investigate the influences that are forming consumer attitudes and are determining the demand for specific foods in different export markets.
- Improve the texture, flavour, colour, safety and nutritional aspects of beef and lamb produced from grass.

Prepared Consumer Foods

- Identify the major factors which determine the quality of prepared food products.
- Evaluate processes and functional ingredients for the improvement of existing products and the development of new products, including ready prepared foods, chilled foods, frozen pizzas and pasta.

Technical Services in Sustainable Agriculture and Food Processing

3,522	4,829

The objective of this programme is to provide a range of services that facilitate, promote and service the requirements of the agri-food industries. The specific objective of providing technical service to the food industry is to raise the innovative capacity of the industry and support the development of small and medium scale food enterprises.

The provision of services is based on the premise that these are areas where Teagasc research is in a unique position to provide information necessary for the development of the agri-food industries.

In agriculture, services are provided in the following areas:

- analytical/diagnostic services such as the nematology service to the Department of Agriculture, Food and Rural Development; analysis of silage, meals, water, compost, soils and plants; diagnosis of animal and other diseases;
- consultancy services to Irish and EU agencies in areas such as land resource management, equipment development and Leader Programmes;
- the National Farm Survey.

Based on the strategic research capability outlined already, and associated expertise in product and process innovation, Teagasc provides Technology Development Services for food companies, and especially for small and medium scale enterprises, in the following areas:

	€'000	
	2000	2001
► consultancy and contract research in product development and product/process improvement;		
► pilot plant facilities for R&D and small-scale manufacturing;		
► assistance with registration for ISO 9000 and installation of quality management schemes;		
► assistance with market investigations, market trends and analysis of market opportunities for food.		

Advice and Development Services

	35,757	39,210

Teagasc provides professional advice to farmer clients at enterprise level dealing with dairying, cattle, tillage crops, horticulture, financial management, agri-tourism, farm modernization, environmental conservation/control of farm pollution, winter feed quality and overall farm management.

Programme support includes the provision of specialist training to advisers to enable them to keep abreast of S&T developments. Through its nationwide network of over 100 offices and 230 advisers, Teagasc maintains contact with 90,000 Irish farmers. It provides advisory services under contract to 30,000 of the more progressive of these farmers.

In the course of a typical year, Teagasc advisers make 75,000 farm visits, provide 225,000 other consultations and supply information to 100,000 attendees at demonstrations and meetings.

Department of Arts, Heritage, Gaeltacht and the Islands

	€'000	
	2000	2001

The Department of Arts, Heritage, Gaeltacht and the Islands was established in 1997. It is responsible for:

- The formulation of national policy relating to Arts and Culture – An Chomhairle Ealaíon – the Arts Council, comes under its aegis;
- The promotion of the cultural, social and economic welfare of the Gaeltacht (Irish speaking areas principally along the Western seaboard), and the preservation and extension of the use of Irish as a vernacular language;
- The National Museum of Ireland, the National Library of Ireland, the National Gallery of Ireland, the National Archives, the National Concert Hall, the National Heritage Council, and the Irish Museum of Modern Art;
- The formulation of national policy relating to broadcasting and the audio-visual industry;
- The formulation and implementation of national policy in relation to Heritage, including Inland Waterways, National Parks and Wildlife which were formally the responsibility of the Office of Public Works, as well as National Monuments and Historic Properties;
- Promoting the sustainable development of the populated offshore islands.

The Islands Division

	381	1,270

The Islands Division provided grant aid to local authorities and to Údarás na Gaeltachta to carry out a number of specialist studies in 2000. These included amongst others feasibility studies for improved pier facilities serving Clare Island and Inishturk, Co. Mayo and Tory Island and Inishboffin, Co. Donegal. Also included was an EIS in respect of an airstrip at Clifden to serve Inishboffin, Co. Galway and the appointment of consultants to design and build a cablecar serving Inis Bigil, Co. Mayo.

In 2001, the Islands Division intend to grant aid a number of Local Authorities for the cost of carrying out feasibility studies for improved pier access to a number of islands and to continue with the Inis Bigil cablecar project.

In addition, the Department has already in 2001 employed consultants to examine the issues surrounding the provision of air services to the islands.

National Parks and Wildlife Service

	1,244	2,598

The Research Branch provides the necessary scientific expertise and advice for the implementation of Ireland's nature conservation policies including those arising under the Wildlife Act, 1976 and various EU Directives and Regulations relating to nature conservation.

TECHNICAL INFORMATION

Wildlife Service

While the main duties of wildlife personnel throughout the country involve the management of nature reserves and the enforcement of regulatory provisions of the Wildlife Act, they also provide an advisory service to the Government and the public. The service undertakes general advisory activities and talks in schools and other educational centres. Scientific papers are produced regularly on a wide range of topics.

	€'000
2000	2001
686	914

Údarás na Gaeltachta

	€'000	
	2000	2001

Údarás na Gaeltachta was established under the Údarás na Gaeltachta Act, 1979 and came into operation on 1st January 1980 to replace Gaeltarra Eireann which was dissolved by the same Act. It operates under the aegis of Síle de Valera, Minister for Arts, Heritage, Gaeltacht and the Islands (Aire Ealaíon, Oidhreachta, Gaeltachta agus Oileán).

The objectives of An t-Údarás are as follows: to encourage the preservation and extension of the Irish language in the Gaeltacht; to attract suitable native and foreign manufacturing projects to the Gaeltacht; to establish, develop and manage productive employment enterprises in the Gaeltacht; to participate in industries as an equity partner; and to provide services to assist new industries becoming established.

Údarás na Gaeltachta is financed by a grant-in-aid, rents, the European Social fund, repayable advances and other income.

Údarás na Gaeltachta employs 112 people.

RESEARCH AND DEVELOPMENT

Research and Development Grants

	2,895	2,984

Grants of up to 60% subject to a maximum of €126,973 for any one project are available to assist R&D in industry in the Gaeltacht regions. Since 1995 this programme is funded from Measure 1, RTI and other areas of the Operational Programme for Industrial Development on a reimbursement basis from Enterprise Ireland. NIL was reimbursed in 2000, and €1.27m is expected in 2001.

111 grants were awarded in 2000, of which 81 went to manufacturing industry and 30 went to the marine sector.

2 people are employed on this programme.

Feasibility Study Grants

	178	190

These grants enable individuals, groups, and firms to seek out and evaluate prospective new product ventures.

46 grants were given in 2000.

	€'000	
	2000	2001

Natural History Museum

The Natural History Museum originated as one of the many activities initiated by the Royal Dublin Society in furtherance of its aims of fostering the useful arts and science in Ireland. The nucleus of the Museum was formed by the purchase in 1792 of the Leskean collection of minerals and insects aided by a grant from Parliament. Under the Dublin Science and Art Museum Act, 1877, responsibility for the Museum was undertaken by the State and the National Museum founded, with staff of the Natural History Museum transferred to the Natural History Division of the National Museum. In 1924, the Department of Education took responsibility for the National Museum and in 1982 it was transferred to the new Department of Arts, Culture and the Gaeltacht.

The functions of the Natural History Division of the National Museum include: the provision of public exhibitions, the dissemination of information to the public of zoological, entomological and geological material, and curation thereof.

Programme funding for the Natural History Museum is a non-fixed proportion of the budget for the National Museum of Ireland, which is received from the Department of Arts, Heritage, Gaeltacht and the Islands.

The Natural History Division of the National Museum employs 4 permanent (3 curators and 1 technician) and 1 temporary contract professional staff. The Natural History Museum as a public exhibition space is managed by staff from other Museum departments including security and cleaning staff. The Natural History Division also shares the services of artists and crafts persons on a part-time basis from the various National Museum departments.

Its activities are as follows: the classification, cataloguing, presentation, conservation and display of zoological, geological and entomological material of Irish and foreign interest and provenance. It carries out fieldwork to collect material for research purposes and to fill in known gaps in the collections. Samples for outside organisations and members of the public are identified and lectures and information on relevant matters are provided.

TECHNICAL SERVICES

Zoology and Entomology

	153	163

A permanent programme of curation appropriate to the differing requirements of the perishable biological specimens in its care is undertaken. Insects, pests and zoological specimens are identified for among others, Health Board Inspectors, Government Departments and the Dublin Port and Docks Board.

Fieldwork in entomological and marine fauna is carried out with particular emphasis on filling gaps in the collections. Worldwide links are maintained with colleges, museums, and State bodies providing scientific information on matters relating to zoology and entomology.

2 zoologists and 1 technical assistant are employed in the Zoological and Entomological Section.

	€'000	
	2000	2001
Geology		
A permanent programme of curation is pursued appropriate to the fossils, minerals and rocks in care. Fieldwork is undertaken with a view to adding material to its geological collections and assistance is given to other research workers. Information is provided by way of publications, identifying specimens, answering queries and giving occasional lectures.	79	84
2 geologists are employed in the Earth Science Section.		

Department of Enterprise, Trade and Employment

The Department of Enterprise, Trade and Employment (formerly the Department of Enterprise and Employment) was established in 1997. The Office of Science and Technology was created, within the then Department of Industry and Commerce in 1987, when the first Minister of State for Science and Technology was appointed.

The Mission Statement of the Department is:

Promoting employment, enterprise, economic growth, employee welfare and consumer rights.

Strategic Goals:

- To promote the ongoing development of an environment within which enterprise can flourish
- To foster a fair and effective business regulatory system, which promotes and enforces competition and protects public and consumer interests
- To promote fairness and efficiency in the labour market thereby maximising employment, protecting the welfare of workers and promoting social inclusion
- To implement the business goals of the Department within a culture which promotes openness and transparency towards customers, and which emphasises high quality service delivery
- To further develop staff skills, support structures and systems to assist the Department in implementing a programme of change

It also has responsibility for certain State-sponsored bodies entrusted with either the implementation or formulation of policy programmes in regard to these functions, viz. The Patents Office, Enterprise Ireland, IDA Ireland, Forfás and Shannon Development. It also subvents the NMAC and the NMRC.

The Department's own activities are financed through a general vote of the Oireachtas and through other income. The Department employs 13 staff in its S&T activities.

The Office of Science and Technology provides funding for and is represented on the policy formulation committees of the following international organisations: The European Space Agency (ESA), EUREKA, the European Molecular Biology Conference (EMBC), and Co-operation in Science and Technology (COST). It is also responsible for advising the Minister on general S&T activities funded by the Department.

The Office of Science and Technology administers, through its S&T Development Programme, the funds available under the Research and Development Programme of the Industry OP. An amount of €66.3m has been allocated in 2001. This amount is broken down as follows:

RTI for Industry

	€'000 2000	€'000 2001
Capability	8,888	10,201
RTI Competitive	6,348	9,600
Innovation Management	6,348	4,200

	€'000	
	2000	2001
RTI for Collaboration	38,092	34,345
RTI for Infrastructure		
► Regional Innovation (Regional Studies Incubation Centres)	9,113	1,246
► Basic Research	6,348	5,704
Miscellaneous	3,796	1,117
Total S&T Programmes	78,935	66,416
Technology Foresight	451	31,767
Advisory Services	439	458
Administration and advisory services to the Minister on general S&T matters and liaison with, and monitoring of, NMRC activities and related elements of other departments.		
Evaluation and Awareness	444	728
Under this heading funding is provided to Forfás to undertake various tasks on behalf of the Office of Science and Technology related to the S&T Development Programmes. These include on-going evaluations of the different sub-measures. In addition, funding is provided for the Science, Technology and Innovation Awareness Programme and the annual North-South Innovation Lecture.		
International Collaboration		
National contributions to, and participation in, European Space Agency, European Molecular Biology Conference, Co-operation in Science & Technology (COST) and EUREKA.		
The main objective of joining the ESA is to stimulate high technology industry in Ireland. The greater part of Ireland's contribution is returned as industrial contracts involving collaboration between enterprises in the Member States.	7,147	8,380
The objective of the EMBC involvement is to secure fellowships that enable biologists to work abroad thus widening their experience and links. Ireland receives fellowships, the value of which exceed the membership costs.	60	66
The COST programmes are co-operative R&D projects by 19 participating countries in areas that, for financial and technical reasons, would be beyond the scope of any individual country. This is a biennial contribution.	0	4
EUREKA, is a European research initiative designed to ensure that the technological gap with other countries is narrowed. It promotes joint research between firms in different countries.	23	33
Galway Science Festival	0	317
Belderrig Research Project	283	0
Birr Historic Science Centre	339	0

RATIONALE FOR INVESTING IN RTDI

Ireland is enjoying the fruits of unprecedented success and development. Much of this has been driven in the past by Ireland's ability to attract large-scale high-technology multinational investments. These in turn have helped to spawn Irish owned high-tech industry, which has achieved significant successes, for example in the software and electronics sectors.

However, long-term prosperity and continued growth depends very much on indigenous companies. The challenge ahead is to put in place conditions, which allow for the further development of an indigenous enterprise culture. The aim is to improve growth in output and employment, by building on our competitiveness.

There is acceptance at national and international levels that Research, Technology and Innovation is of critical importance to competitiveness and employment. The pace of technological change is continuing to accelerate. Companies must continuously develop new products and find new markets if they are to keep up.

RTDI IN THE NATIONAL DEVELOPMENT PLAN 2000 – 2006

In the current National Development Plan, €2.48 billion has been allocated to Research, Technological Development and Innovation (RTDI) over the seven-year period of the plan. Of this, €1.5 billion is being provided specifically for RTI for Industrial Development related activities. This money will be used as a means of enhancing innovation and competitiveness, in order to increase output and employment. It will help companies to develop their own research activities, develop a world class research environment in the higher education institutions and State research institutions, and ensure a vibrant and dynamic pool of high quality, technically literate graduates to service the needs of companies. Support is available to firms to help them to develop innovative products, services and processes and encourage them to access and exploit R&D and technology from international sources.

The number of companies performing effective R&D in Ireland must be increased as well as the scale of that investment. The culture of R&D must be embedded in companies by upskilling their RTI capability through these interventions.

TECHNOLOGY FORESIGHT FUND / SCIENCE FOUNDATION IRELAND

In order to reposition Irish industry higher up the economic value chain and channel investment into areas with the greatest potential, a Technology Foresight Fund totaling €711 million was established in March 2000. To implement the Technology Foresight initiative, a dedicated Research Foundation, Science Foundation Ireland, has been established. The Technology Foresight Fund will support projects in key strategic technologies, namely niche areas in Information and Communication Technologies (ICT) and Biotechnology, and is a vital element in the Government's strategy to move Irish industry higher up the value chain.

Initiatives like Technology Foresight will ensure that Ireland is at the forefront of scientific developments in Information and Communications Technologies and Biotechnology.

	€'000	
	2000	2001

Forfás

Forfás was established in 1st January 1994 under the terms of the Industrial Development Act, 1993 and is an autonomous agency under the aegis of the Department of Enterprise, Trade and Employment. It is the policy advisory and co-ordination board for industrial development and science and technology in Ireland.

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, An Bord Trachtála and such other bodies as the Minister may designate;
- To promote science and technology for economic and social development;
- To encourage the establishment and development in the State of industrial undertakings from outside the State; and
- To advise and co-ordinate Enterprise Ireland and IDA Ireland in relation to their functions.

The total grant-in-aid to Forfás in 2001 is €13.6m, and there is a staff complement of 145 people.

S&T Division

The mission of Forfás in science and technology is to enhance Ireland's performance in science, technology and innovation and thereby contribute to economic and social development.	1,769	2,533

The general objectives of the S&T Division are:

- To formulate policy advice on the key national and international issues relating to science, technology and innovation (STI) and to convey this advice to Government and in particular the Department of Enterprise, Trade and Employment.
- To monitor and assess STI performance in Ireland and relevant international trends. This is done by surveying business sector investment in research and innovation; surveying the research performance and capability in the third level sector; monitoring the level of Irish participation in the EU Framework Programmes; evaluating national STI programmes and by carrying out an annual review of State investment in S&T (the Science and Technology Budget).
- To make recommendations for improved co-ordination between the various actors in relation to their STI activities.
- To stimulate greater appreciation and understanding of the role of STI in economic, industrial and social development.

The activities undertaken by the S&T Division cover five main areas:

- Delivering timely and well-founded policy analysis and advice on science, technology and innovation issues to national policy-makers.
- Undertaking evaluations of existing S&T policies and programmes, in order to improve their performance and relevance to economic development.
- Providing data, indicators and a flow of other information on science, technology and innovation to policy-makers, decision-takers and interested groups in the public and private sectors.

	€'000	
	2000	2001

- Providing secretariat and research support for the Irish Council on Science, Technology and Innovation (ICSTI).
- Advising and providing support to the Office of Science and Technology on international science and technology programmes and issues.

The S&T Division had an expenditure of €1.3m in 2000 and a budget of €1.8m for 2001. An additional budget of €11.1m was allocated to Science Foundation Ireland.

Science Foundation Ireland

536	11,084

Science Foundation Ireland (SFI) was established in 2000 to make Ireland a centre of research excellence in Biotechnology and in Information and Communications Technology (ICT). Dr. William Harris has been appointed Director General.

The Foundation announced the results of the First Call for Proposals for Principal Investigators in July 2001. This call to the international research community was aimed at supporting a small number of outstanding researchers who are world leaders in their fields. Following a very positive response to the call from around the world and a very rigorous independent international peer review process, eleven Principal Investigators are heading up teams carrying out leading edge international research in Ireland. Principal Investigators can benefit by up to €1.3m per annum over a three to five year period to fund their research teams of possibly up to 12 people.

In the second quarter of 2001 the Foundation announced a new international call for Proposals for SFI Principal Investigators. The Foundation also announced a call for SFI Fellows, aimed at outstanding researchers in the early part of their career. Successful applicants as SFI Fellows can receive up to €1,625,000 over five years to support their work and that of their team.

National Science and Research Policy

The **Irish Council for Science, Technology and Innovation (ICSTI)** operating under the aegis of Forfás and with a Forfás Secretariat advises the Government on the strategic direction of science, technology and innovation (STI) policy. Its advice encompasses all aspects of STI policy including: primary, secondary and third-level education; scientific research; technology and research, development and innovation in industry; prioritisation of State spending and public awareness of STI issues.

In 2001 the Council completed three priority areas of work:

Commercialisation of Publicly Funded Research
This report published in 2001 makes recommendations aimed at improving the means, circumstances and conditions for the transfer and commercialisation of publicly funded research activities and outcomes in the higher education and public research institutions in Ireland. The actions identified to support the conversion of research findings into commercial projects which generate employment and wealth in Ireland relate to the work of Government departments, the State development agencies research bodies and private sector firms.

Modern Biotechnology
The objective of this work was to analyse the policy issues surrounding the development of a modern biotechnology sector in Ireland and to recommend further activity. Biotechnology is

an enabling technology with implications for many areas of business and medicine that are important to the economic growth of the Irish economy and the wellbeing of Irish society. It is a critical technology for the future. This was highlighted in a number of the Technology Foresight Panel Reports.

Measuring and Evaluating Research
The report surveys the principal indicators and techniques used internationally to measure research activities and to assess their impacts. The report also provides an account of the current position in Ireland in respect of the provision of STI indicators and the application of evaluation techniques. The report recommends that there should be greater emphasis on the development of relevant indicators and on the use of evaluation techniques by public research agencies in Ireland using best international practice and indicates how this can be achieved.

New areas of work initiated by the Council in 2001 include:

- Industrial Design and Development
- Sustainable Development

Internationally Related Elements of Science and Research Policy
Inter-Governmental Research Organisations

The Department of Enterprise, Trade and Employment asked Forfás in 2001 to assess the case for Irish membership of four inter-governmental research organisations (IGROs). The four were: CERN – European Organisation for Nuclear Research; EMBL – European Molecular Biology Laboratory; ESO – The European Southern Observatory and ESRF – European Synchrotron Research Facility.

Forfás worked with the Technology Policy and Assessment Centre (TPAC) of the Georgia Institute of Technology, Atlanta, to undertake the assessment and also develop criteria that could be applied generically in decisions to join or not to join IGROs.

European Research Area

The European Research Area is about raising the quantity and quality of research throughout Europe based on common approaches and objectives. As part of the Lisbon Summit conclusions, Ireland, represented by Forfás, is involved in the benchmarking of national research policies specifically in relation to the following topics: human resources in RTD; public and private investment in RTD; scientific and technological productivity; the impact of RTD on economic competitiveness and employment; and the public understanding of science.

The implementation and funding of the European Union's research and technology development policy is done through multi-annual Framework Programmes. The Sixth Framework Programme 2002 to 2006 – which is currently under negotiation, will contribute to the integration of research efforts and activities on a European scale as well as contributing to the structuring of the various dimensions of the European Research Area. Forfás provides policy advice to the DETE in respect of EU RTD policy, specifically the EU Framework Programmes for Research, Technology Development and Innovation (FPs). Associated with this, the Division monitors Irish participation in FPs and co-ordinates the National Delegates and National Contact Points for each of the specific programmes within the FP.

	€'000	
	2000	2001

Science, Technology and Innovation Awareness Programme

Forfás manages this programme, which is now in its sixth year, on behalf of the Office of Science and Technology.

A full programme of activities was carried out in 2001, the sixth year of the campaign. The audiences of focus were young people, business, the general public and the media. The objectives were to raise the level of perception of young people of science and technology subjects, to help stimulate innovation in business, to assist the public become more comfortable discussing issues with a strong technical component and to inform the media of the relevance of science, technology and innovation.

Science and Technology Indicators

Forfás has responsibility for the collection, compilation, analysis and publication of data relating to all S&T activities in Ireland. The areas surveyed include: business sector research, development and innovation; research and development in third level universities and technological institutes; State investment in science and technology – the annual 'Science and Technology Budget'.

Research Capability Study

- When approving the establishment of Science Foundation Ireland, the Government called for a baseline study of existing levels and quality of Ireland's research in biotechnology and information and communications technologies. The main purpose of this review is to provide parameters against which the progress of the Foundation can be evaluated over the coming years.

The Irish National Accreditation Board

	669	750

The National Accreditation Board (NAB) is the Irish National Body within a European network of accreditation bodies with responsibility for accreditation in accordance with the harmonised EN 45000 series of European standards and the relevant International Organisation for Standardisation (ISO) standards and guides.

NAB, as the national body for the accreditation of certification bodies, laboratories and inspection bodies is a signatory to the multilateral agreements (MLAs) for Europe through the European co-operation for Accreditation (EA) and world-wide through the International Laboratory Accreditation Co-operation (ILAC) and the International Accreditation Forum (IAF). Thus NAB plays a key role in guaranteeing the access of Irish products to both the EU and worldwide markets. Its activities make certain that accredited certificates and test results produced in Ireland are acceptable world-wide and thus greatly reduces technical barriers to international trade.

NAB is also the national statutory monitoring authority for the OECD Good Laboratory Practice (GLP) Scheme under S.I. No. 4 of 1991 as amended by S.I. 294 of 1999.

	€'000	
	2000	2001

Enterprise Ireland

Enterprise Ireland is the national organisation responsible for delivering science and innovation and technology services directly to Irish companies. These services form a vital part of the national scientific and technological infrastructure, along with other science and technology services in both the private and public sectors. Linking science, technology and innovation investment to relevant areas of Irish companies is the focus of Enterprise Ireland's activities. Certain programmes are designed to enhance the relationship between industry and third level institutions.

Some elements of Enterprise Ireland's Science and Technology programmes were supported by the European Regional Development Fund and the European Social Fund under the various sub-programmes in the Operational Programme for Industrial Development up to the end of 2000. Enterprise Ireland administers many elements of the science and technology sub-programme on behalf of the Office of Science and Technology in the Department of Enterprise, Trade and Employment.

The National Development Plan 2000/06 sets out revised approaches in the field of Research and Development for the Office of Science and Technology and for Enterprise Ireland. Enterprise Ireland regularly carries reviews of its activities which can have an impact on the way in which activities are reported from year to year.

The figures below include pro-rated capital and overheads.

RESEARCH, DEVELOPMENT AND DEMONSTRATION

Forest Products	197	-

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.

Programmes in Advanced Technology (PATs)

PATs are designed to utilise the knowledge and expertise within the third level sector in a number of key technologies to contribute to the competitiveness of existing industry, particularly Irish owned, attract new overseas firms to Ireland, and aid the establishment of technology driven start-up companies. A special unit provides administrative support to all the PATs which operate under the auspices of Enterprise Ireland, and assists in planning, managing and monitoring the activities of the PATs. Funding for these activities is known as Phase I funding and it is intended that this will be phased out in the future.

In 2000, under the NDP, a new funding approach has been developed for the PATs which will gradually replaced the existing funding mechanism. Third level institutes are now invited on a regular basis to submit proposals to research a range of selected topics. These proposals are approved by the Research Board, which is managed by Enterprise Ireland. Contracts are then signed with the successful institutes. As a result, there will be no specific allocation of funding for 2001 under the Phase II funding to any particular PAT.

	€'000 2000	2001
BioResearch Ireland	5,362	3,888
BioResearch Ireland provides research facilities and support services for the commercialisation of biotechnology opportunities arising in Irish universities and research institutions. It is designed to optimise the exploitation of their bio-expertise. There are five centres located at UCD, DCU, TCD, UCC and UCG. 282 contracts were undertaken and income of €2,180m was earned in 2000.		
Advanced Manufacturing Technology (AMT Ireland)	1,792	1,844
AMT Ireland provides a range of cost effective solutions to manufacturing problems, through its expertise in key technology areas, by developing and applying advanced manufacturing technology. Technical resources consist of four commercially based centres attached to UCD, UCC, UCG and UL. They provide a range of expertise, training and consultancy in key technology areas. 356 contracts were undertaken and income of €0.87m was earned in 2000.		
Optronics	1,124	698
Optronics Ireland provides facilities and support for optoelectronics research in Ireland. In addition, it is responsible for assisting in the development of the optoelectronics sector in Irish industry. The programme has five centres located at TCD, DCU, UCC, NMRC and UCG. 108 contracts were undertaken and income of €0.26m was earned in 2000. The financial figures quoted here relate to Optronics Centres in TCD, DCU, UCD and UCC.		
Power Electronics Ireland (PEI)	2,627	1,840
PEI provides support and facilities for research and product development in the electronics industry. There are seven centres located at UCD, DCU, NMRC, UCC, UL and UCG. All these centres were certified by NSAI to ISO 9001. A total of 108 contracts were undertaken and income of €0.91m was earned in 2000. The financial figures quoted here do not include the PEI Centre at NMRC		
Informatics Programme – Teltec Ireland	1,051	787
Teltec Ireland provides a range of research and development services to the telecommunications industry sector. There is one centre located at UL. 12 projects were undertaken and income of €0.05m was earned in 2000.		
Software	697	
The Software PAT provides a range of research and development services and facilities in the areas of software development. 57 contracts were undertaken during 2000.		
The Software PAT and Teltec have been merged into one programme called Informatics Programme.		
Materials Ireland (MI)	4,123	3,356
MI provides a range of research and development services in the areas of materials and material technology. Expertise is available in ceramic, polymer, composite, metal and coating technologies. The centres are located at TCD, UCD, UL, Athlone and Enterprise Ireland. A total of 1,092 contracts were undertaken and income of €1.74m was earned in 2000.		

	€'000 2000	2001
Other PAT Programmes	4,960	9,679
In addition to expenditure on the overall management of the programme, €0.24m was spent and income of €7,618 was earned in 2000.		

Grants to Companies

Feasibility Studies	4,309	3,809
Studies are grant-aided to enable individuals, groups and firms identify and evaluate prospective new product ventures including licensing arrangements. Grants are subject to a maximum of 50% of eligible expenditure or €19,046 – whichever is the lesser. A key part of the Campus Companies Programme was the provision of financial support in the form a CORD (Commercialisation of Research and Development) grant. The main purpose of the CORD grant is to enable individuals to assess the commercial viability of a project in a number of different areas. The CORD costs are included under the total for feasibility grants.		
Shannon Development is reimbursed for feasibility grants to companies in the Mid-West region. These monies are accounted for in Shannon Development's Programme description.		
Research and Development	19,148	24,420
Final payments under the 1994/99 OP were still being made during 2000.		
In the National Development Plan 2000/06, there are two R&D initiatives to replace those which operated under the last OP. Enterprise Ireland operates an R & D Capability initiative on behalf of its own clients.		
Enterprise Ireland also manages the Competitive RTI initiative on behalf of the Office of Science and Technology which is open to clients from all agencies.		

Other Company Support

Software Development	913	118
This initiative provided financial support to companies for software development. The EU funded programme was completed in 2000 with final payments being made.		
Technology Service Centres Programme	641	-
This programme supported the establishment of campus based centres throughout Ireland focused on specific technologies which provide a range of technology services to industry on a commercial basis. This programme was completed in 2000.		
RTD Management Development	1,115	2,479
The RTD Management Development programme is directed at established companies in Ireland, which show the potential to benefit from assistance and guidance in the implementation of all aspects of the innovation process. Participation in the programme will upgrade the ability of companies to produce practical and implementable strategic technology development plans for their companies.		
A new replacement programme called Innovation Management is expected to be launched in 2001.		

Grants to Third Level Colleges

Grants were provided for eligible expenditure to participants in the following schemes:

	€'000 2000	2001
Basic Research Grants Supports high quality fundamental research and is open to all full time, permanent researchers in the higher education sector in Ireland in the following areas: - biological, chemical, earth, physical, engineering, mathematical, computing sciences.	5,127	6,133
Strategic Research Programme Supports research of strategic importance to industry and to augment the activities of existing initiatives such as the PATs.	2,795	5,720
Applied Research Grants Scheme (Universities) Enhances mutually beneficial co-operation and interaction between industry and universities.	844	4,114
Applied Research Grants Scheme (ITs and DIT) Supports small applied research projects in the ITs and DIT in collaboration with industry.		
Industry Scholarships (MSc) Enhances mutually beneficial co-operation and interaction between industry and the higher education sector.	178	157
Research Scholarships (PhD) Supports graduates to complete a continuous period of research in basic training leading to a PhD qualification.	922	1,037
Post-doctoral Awards The Post-doctoral Awards continued to be funded by OST to support post-doctoral research in 2000 and 2001.	197	297
Regional Incubation Centres (Institutes of Technology) Under the BMW and S & E Regional Operational Programmes, funding for the provision of Incubation centres within the Institutes of Technology will be made available. Invitations to tender will be issued to all institutes in 2001 and 2002.	-	889
National Research Advisory Board (Measure 4 Board) This board was established in mid-1995 with support from OST to consider applications under the grant schemes to support research.	207	102
Environment Programme	24	11

SCIENTIFIC AND TECHNICAL SERVICES

	€'000 2000	2001
Retex	538	
The RETEX Operational Programme for Ireland was formally adopted by the Commission on 18 June 1993. This programme closed in 2000 with the final payments.		
Technology Services (Excluding the Irish Energy Centre and the National Metrology Laboratory)	10,632	10,884
Technology Services comprises of the Materials Programme, National Electronic Test Centre and the Environment Programme. These programmes provide a wide range of scientific and technical support services which are provided directly to industry and the public sector. In addition, Technology Services provides support to other parts of the organisation in developing technological solutions for Enterprise Ireland clients.		
Energy	6,360	4,990
The Irish Energy Centre's mission is the promotion of a sustainable national energy economy. The programme of work is designed to stimulate greater energy efficiency and the wider exploitation of renewable energy resources across all sectors of the economy. The strategy employed is designed to generate long term behavioural change, achieved through a process of implementing, informing, encouraging, supporting and assessing.		
In addition to funds received from the Department of Public Enterprise towards its running costs, the Irish Energy Centre also administers grants for energy efficiency and support. Legislation has been prepared which will establish the Irish Energy Centre as a statutory body.		
National Metrology Laboratory	2,971	3,011
The National Metrology Laboratory is responsible for maintaining and developing the Irish national measurement standards and disseminates these standards by means of a calibration service. It provides technical advice, consultancy services and training to industrial clients in all aspects of measurement science and technology. In addition, it provides calibration and test facilities for the National Accreditation Board (Forfás). It represents Ireland internationally on metrology matters (EUROMET, OIML, EAL).		
Forest Products	1,219	1,453
Technical advice, consultancy services, training and assistance with new product and process development was provided to the Irish timber industry to identify opportunities for Irish timber and develop new applications and standards. In addition, EU and international developments and standards are monitored. A quality assurance scheme is operated on behalf of the Timber Quality Bureau of Ireland.		
International Activities	309	414
Enterprise Ireland co-ordinates, represents and/or administers Ireland's participation in a wide range of International agencies and programmes:		

- European Science Foundation which brings Irish scientists together with their counterparts in Europe to work on topics of common concern and enables Irish scientists to participate in key areas of scientific endeavour.
- Ireland-France exchange programme develops and intensifies scientific co-operation in designated fields of science and engineering by funding short visits in conjunction with CNRS in France. A similar bilateral programme exists between Ireland and the UK.
- The Science and Technology programme for the International Fund for Ireland.
- Ireland's involvement in the European Space Agency, COST and EUREKA programmes.

European Space Agency (ESA) – provides for and promotes (for exclusively peaceful purposes) co-operation among European States in space research, technology and space applications with a view to their use for scientific purposes and for operational space application systems in telecommunications, launchers, earth observation and micro gravity.

COST, comprising of 28 member states, promotes basic and applied research between Research Organisations on a European wide basis.

EUREKA, comprising 27 member states, promotes close to market R&D between companies on a European wide basis.

- EU Fifth Framework Programme for Research and Technological Development (1999 to 2002).

INFORMATION AND SPECIALIST ADVISORY SERVICES

All programmes from time to time provide information and advice on technical matters to clients upon request.

Information Programme / Enterprise Link

1,270

The Information Services Programme provides technical information and literature to companies / individuals seeking technical assistance which can include:

- Library information services
- On-line help desk service
- On-line literature searches with access to international databases
- Material lending / photocopying services
- A telephone help line (information desk)
- The enterprise telephone link

Information services are also available through the other technical programmes of Enterprise Ireland such as the Irish Energy Centre – Information Promotion Programme and Forest Products.

TECHNOLOGY TRANSFER

	€'000 2000	2001
Technology Transfer	1,511	1,905

Enterprise Ireland manages a programme designed to promote the transfer of new technical methods and ideas to industry mainly from abroad. Particular emphasis is placed on introducing new products and processes via licensing from abroad.

The following services are available:

- Licensing technology – assisting companies to source, evaluate and commercialise a technology. 25 agreements were completed in 2000.
- Intellectual Property – assisting companies to evaluate, value and commercialise inventions. Funding for the patent programmes comes directly from industry.
- Publications – a range of technical publications / papers of which the most important is the monthly magazine "Technology Ireland".
- Advice is given to people seeking information on the commercialisation and patenting of inventions.

Promotion of Technology Transfer from Colleges	3,135	3,193

In addition to managing grant schemes in the third level sector, other activities in support of Science and Innovation development within Enterprise Ireland include a campus companies programme, which operates in the third level and business sectors, to help the establishment and growth of campus enterprises based on the results of research and development work in the colleges. It also facilitates the licensing of research results from the third level sector to industry.

The Training and Mobility of Researchers Programme is a European programme which is aimed at increasing the quality and quantity of human resources available in Europe for research and technological development.

It provides funding for a number of activities which seek to break down the barriers inhibiting the free and effective movement of skilled researchers in Europe. There are four activities under this programme- Research Networks, Large Scale Facilities, Accompanying Measures and Training Grants.

Technology Acquisition	133	127

This programme assists firms to acquire new product or process technologies. Grants are approved up to a maximum of €317,434 or 50% of eligible expenditure.

Techstart / Techman Programmes	1,689	1,270

These programmes were designed to help companies improve their use of technology by placing a young technical graduate or an experienced technologist in a company to improve a company's overall effectiveness. Funding was provided to the company towards meeting the employee's cost in the first year. Techstart placed 26 new graduates during 2000. 1 new placement was made under the Techman programme in 2000; however in total 72 placements received support.

IDA Ireland

IDA Ireland has national responsibility for securing new investment from overseas in manufacturing and international services and for encouraging existing foreign enterprises to expand their businesses. (The attraction of overseas investment to the Shannon Free Zone and the Gaeltacht areas are the responsibility of Shannon Development and Údarás na Gaeltachta respectively).

With a staff of about 280 people and headquarters in Dublin, IDA Ireland has 14 overseas offices as well as a director and staff in each region in Ireland.

Its activities include the international and national promotion of Ireland as a location for overseas investment and the provision of financial incentives (including grant-aid) for the attraction of new overseas investment into Ireland as well as the expansion of its existing client base of almost 1,300 companies.

As part of its brief to develop overseas companies already in Ireland, IDA Ireland focuses on encouraging these companies to locate additional or higher order functions in Ireland, e.g. a research and development unit.

IDA Ireland's current policy emphasises the need to assist existing clients to move up the value chain. The objective is to ensure that its client companies are focused on activities for which Ireland is a cost-effective location and thus help to secure their competitiveness and strategic importance within the overall company. To achieve this, IDA Ireland introduced new incentive schemes in 2000, including an R&D Capability Grant Scheme.

There are no administrative costs associated with science and technology activities as no separate staff are assigned to administer either Research & Development or Feasibility Study Grants.

RESEARCH AND DEVELOPMENT

	€'000 2000	2001
Product and Process Development	3,115	8,888

Grant assistance is provided in support of product and process development projects carried out either in-house or by sub-contractors, e.g. Enterprise Ireland or private consultants. R&D Facility grants are available to assist in the purchase of plant and equipment related to research and development. In general, any grant assistance is subject to a maximum of €317,434 or 50% of eligible expenditure of €634,869.

6 companies were approved for grant-aid of €0.8m in 2000 and grant payments totalling €3.115m were made, which was reimbursed from Enterprise Ireland under Measure 1, RTI and RTDI initiatives of the EU Operational Programmes. The 2001 estimate is €8.89m, inclusive of the IDA's R&D Capability Grant Scheme and RTDI initiative reimbursed from Enterprise Ireland.

	€'000	
	2000	2001
Feasibility Studies	13	63
Feasibility study grants are available to enable firms to evaluate new product and new market opportunities. Grant assistance towards feasibility studies generally ranges between €6,348 and €31,743.		
1 feasibility study grant was approved in 2000 and grant payments of €12,936 were made. The total for 2001 is estimated at €63,487.		
Technology Acquisition	-	-
No payments were made in 2000 under this scheme and no payments are estimated for 2001.		
Note: Allocations for grant payments can differ substantially from outturns as grants are only paid as and when the offers of grants, which require supporting expenditure by recipient firms, are taken up.		

	€'000	
	2000	2001

Shannon Development Company Ltd.

Shannon Free Airport Development Company was incorporated under the Companies Acts in 1959. The Shannon Free Airport Development Company Act 1959 and several amendment Acts govern the activities of Shannon Development and provide for State equity (from the Minister for Finance), and grants for specific functions from the Ministers for Enterprise, Trade and Employment; Tourism, Sport and Recreation; Public Enterprise; and Agriculture, Food and Rural Development in relation to Limerick, Clare, Tipperary (North Riding), South-West Offaly and North Kerry.

Shannon Development acts under the aegis of the Ministers for Enterprise, Trade and Employment and Tourism, Sport and Recreation. Its business is regional economic development and the Company mission is:

"To initiate, participate in and support integrated development that will achieve sustained economic growth in and throughout the Shannon Region".

In implementing its unique regional development mandate, the Company adopts a number of specific but inter-linked approaches. The principal tools it uses are those for which it has statutory responsibility, namely industrial, tourism and related development in the Region.

It is financed by grant-in-aid, EU income, and own resources. The grant-in-aid for 2000 for Shannon Development's administration and general expenses related to industrial development was nil as all revenue expenditure was funded from own resources. The grant-in-aid grants to industry in the Shannon Free Zone was €4.13m.

Specifically in relation to its industrial role, Shannon Development develops and strengthens the indigenous industry sector in the Shannon Region, which includes building up a venture capital culture and creating awareness of the benefits accruing from the Information Society. The Company continues to manage and develop specific products such as the Shannon Free Zone and the National Technological Park in Limerick; provides and manages industrial buildings and estates; grants and other financial facilities for new and existing manufacturing and internationally traded services companies. Shannon Development also manages the Innovation Centre and is a partner in the Microelectronics Applications Centre.

The average number employed by Shannon Development during 2000 was 204.

Note: allocations for grant payments can differ substantially from outturns because grants are paid only if the offers of grants, which require a supporting expenditure by recipient firms, are taken up.

RESEARCH AND DEVELOPMENT

Product and Process R&D	4,167	2,286

Grants of up to 50% of eligible expenditure are available to firms in the Mid-West region carrying out product and process development projects. All R&D grants paid by Shannon Development are funded via Enterprise Ireland from funds made available under a number of EU initiatives, namely Measure 1, Research Technology and Innovation Initiatives, and Measure 3 (R&D) Management. In 2000, €4.167m was received from Enterprise Ireland for these programmes and €2.285m is estimated for the new RTI scheme in 2001.

	€'000	
	2000	2001
Feasibility Grants	410	413
Grants of up to 50% of eligible expenditure are provided for feasibility studies to enable individuals, groups and firms seek out and evaluate prospective new product ventures, and market opportunities. Grants paid to industries located on the Shannon Free Zone are funded from Shannon Development's grant-in-aid grants to industry allocation. For indigenous companies in the Shannon Region, outside of the SFZ, Shannon Development receives an allocation from Enterprise Ireland's grant-in-aid vote.		

TRAINING

Specialised training is given to assist in the starting up of new high technology firms.	1,842	2,349

OTHER COMPANY SUPPORT

Grants are provided for:

- Capital investment including site acquisition, buildings and equipment
- Rent reduction grants on premises
- Employment grants

Patents Office

The Patents Office and the Office of Controller of Patents, Designs and Trade Marks were established originally under the Industrial and Commercial Property (Protection) Act, 1927 and continued in being by the subsequent Patents Acts of 1964 and 1992. The Patents Office is under the control of the Controller whose functions are set out in the Patents Act, 1992 amended by the Intellectual Property (Miscellaneous Provisions) Act, 1998, the Trade Marks Act, 1996, the Copyright Act, 1963, the un-repealed provisions of the Industrial and Commercial Property (Protection) Acts, 1927 to 1958, the Copyright and Related Rights Act 2000 and the Statutory Rules made under these enactments. The scope of the Office's activities stems from these statutes and rules.

The principal statutory functions of the Office are the granting of patents, the registration of industrial designs and trade marks and providing information in relation to patents, designs and trade marks. The Controller has had certain statutory functions under the Copyright Act, 1963 – mainly consisting of the resolution of disputes regarding the remuneration payable for use of copyright material e.g. public performance of sound recordings. A new copyright act – the Copyright and Related Rights Act 2000 – will be in force from the beginning of 2001 and will extend considerably the Controller's statutory functions in the copyright domain. These functions include dealing with references of licensing schemes and proposed licensing schemes in relation to various areas subject to copyright and other rights; with references relating to licence terms; with applications for licences where operators of schemes have refused to grant licences and in certain cases where licences are expiring; and with registration of licensing bodies.

The Office's expenditure is funded out of monies voted to the Department of Enterprise, Trade and Employment. The Office's revenue from fees for the registration, etc. of patents, designs and trade marks and sales of publications is subsumed into the Exchequer. The fees and sales of the Office resulted in a surplus over costs of over €4.44m in 2000; the estimated surplus for 2001 is €4.3m.

At 1 January 2000, a total of 72 permanent staff were employed at the Office, of which 16 provided administrative support across the various functional areas set out below.

	€'000 2000	2001
Information Services		
Comprehensive library services are available and include details of published applications and legal and technical works of interest to inventors and those interested in patents, designs, trade marks and copyright, including current applications and proposals.	342	403

6.5 staff are employed in this activity.

A fortnightly journal is published which details the business of the Patents Office. Income arising from the sale of this, and other publications, amounted to approximately €14,600 in 2000; €16,500 is the expected income in 2001.

	€'000	
	2000	2001

Patents

871 | 1,028

18 staff are involved in the processing of applications seeking the grant of patents, i.e. rights preventing parties other than the patentee from exploiting an invention.

Ancillary activities include examination of requests for extensions of the term of patents, restorations of lapsed patents, changes of proprietorship, registration of patent agents and grant of supplementary protection certificates for pharmaceutical products.

1,079 applications were received in 2000, including 641 applications for short-term patents under Part III of the 1992 Act. Of the 456 patents granted, 158 were short-term patents. In 2000, the number of European patents designating Ireland was 5,916 (see below "International Collaboration").

Patent fee income was approximately €5.146m in 2000 and the income from Patent fees in 2001 is expected to be similar to that achieved in 2000.

Designs and Trade Marks

1,742 | 2,057

34.5 staff are involved in the examination of applications seeking (a) registration of designs, i.e. features of shape, configuration, pattern or ornament intended to be applied to any article; and (b) registration of trade marks, i.e. marks for the purpose of distinguishing the goods of the owner of the mark from those of other traders. Ancillary activities include trade mark renewals, assignments, removals, oppositions and the registration of trade mark agents.

558 design applications were received in 2000 and 596 were registered.

Design fee income is estimated to be €91,000 in 2000 and the income generated from Design fees in 2001 is expected to be similar to that achieved in 2000.

4,781 trade mark applications were received in 2000 and 5,264 were registered.

Trade mark fee income is estimated to be €3.29m in 2000 and a similar amount of fees is expected in 2001.

On 1 April 1996, the Community Trade Mark system came into being with the opening of the Office for Harmonisation in the Internal Market (O.H.I.M.) in Alicante, Spain. Under Article 39(3) of Council Regulation No. 40/94 of 20 December 1993 on the Community Trade Mark (C.T.M.), the Office searches every C.T.M. application and conveys the result of its searches to the O.H.I.M.; the result of every search must be with the O.H.I.M. within three months of the date on which the Office received the C.T.M. application from the O.H.I.M. During 1999, the Office, in consultation with the Intellectual Property Unit of the Department of Enterprise, Trade & Employment decided that because of the inability of the Office to keep up with the searching of O.H.I.M. applications (this arose as a result of the reduction in the Office's authorised number of search staff from six to two) and in order not to neglect the processing of national applications, it was agreed that searching of C.T.M. applications should cease for the time being in favour of national trade mark applications. The cessation became operative in January 1999. An enhanced version of our computerised search system, which facilitated the Office to re-commence C.T.M. searching was received in December 2000. Following testing and the allocation of some additional searcher staff for this work, C.T.M. search work recommenced in March 2001.

	€'000	
	2000	2001
International Collaboration	635	41

Consequent on Ireland's ratification of the European Patent Convention with effect from 1 August 1992. There has been a significant decrease in the number of applications seeking national patents filed directly at the Patents Office. At the same time, a correspondingly much greater number of European patent applications designating Ireland are being made to the European Patent Office.

* *It should be noted that the reason why the estimate for 2001 is so small is because of the fact that the Office paid fees to WIPO in respect of both the years 2000 and 2001 in the year 2000 and therefore no fees are due to WIPO in 2001 – these would normally be in the order of €381,000. Normally fees are paid in the year they are due.*

During 2000, staff from the Office represented Ireland at meetings of the European Patent Organisation (EPO) and at meetings at the World Intellectual Property Organisation (WIPO) on various intellectual property issues.

Since October 1993, the Department of Enterprise, Trade and Employment has assumed responsibility for legislative and policy matters in the field of intellectual property.

National Microelectronics Applications Centre (MAC)

MAC, The National Microelectronics Applications Centre Ltd, in Limerick, was established in 1981 to provide creative electronic, software and e-business technological solutions. Over the years MAC has a developed a strong reputation and track record of working with customers and partners in the profitable application and creative productisation of advanced electronics and information society technology.

MAC delivers contract and joint venture development of Information Society products and services for Irish companies, public-sector organisations and entrepreneurs. Including total project management, technical consultancy and development of EU project consortia and proposals. Plus advice, development and hosting of public and private sector e-commerce and other interactive Internet-based applications and services.

MAC works closely with companies and entrepreneurs on its technological solutions for them, and to date has delivered over 225 product developments, 35 online services, 175 process applications, 470 consultancy projects, and has investigated over 3,000 preliminary ideas for high technology products.

MAC's shareholders are Shannon Development, University of Limerick and Industry.

MAC employs a total of 18 permanent staff, together with a varying number of short-term contract personnel.

Technological Development

Electronic, software and Information Society technology products, services and process developments including web-enabling existing products, technical consultancy and project management, and Internet/Web e-business services are carried out on a contract basis for firms.

41 projects were completed in 2000.

Expenditure figures include fee income of €845,646 and €1,351,000 in 2000 and 2001, respectively. As in previous years and in common with the expenditure figures of other agencies the expenditure figures exclude depreciation charges.

€'000	
2000	2001
846	1,351

	€'000	
	2000	2001

An Foras Áiseanna Saothar (FÁS)

The functions of FÁS, the National Training and Employment Authority, as defined in the Labour Services Act (1987) are:

The provision of training and retraining programmes for employment (whether directly provided by FÁS, or contracted out to external agencies); the provision of Employment Schemes; providing Community Groups with training and developmental supports in their enterprise and employment creation activities; providing employment and placement services, both to employers and the unemployed; assisting Irish people to obtain employment in other EU states (primarily through its SEDOC service) and providing advice and counselling for those of our citizens who wish to emigrate.

In the Spring of 2000, FÁS also assumed responsibility for providing its services to Asylum Seekers and a special Unit for this purpose was established within FÁS. That work is still ongoing.

In 2000 FÁS had expenditure, including capital, of €746.6m. Its non -capital budget for 2001 is €815.2m.

FÁS is the largest non commercial State Agency, employing a total of 2,235 staff nation-wide. During 2000, FÁS catered for 39,822 people on its training programmes (including apprentices) and on schemes catered for 58,919.

RESEARCH AND DEVELOPMENT

Planning and Research

1,650	1,840

The Planning and Research Department assists in the development of FÁS through providing planning and research inputs at corporate level. Its main areas of work include strategic and annual planning; labour market research and publication; identifying examples of Best Practice in Industry, Community Enterprise and other areas related to FÁS's overall activities; the provision of a central Library and Technical information service for FÁS; the carrying out of specific research projects and other work associated with the compilation of information and data on behalf of FÁS but funded by the EU.

Overseas Sponsorship Programmes

42	77

This programme provides Graduates, primarily from Science and Technology disciplines, with the opportunity for training and development work and experience overseas for a period of up to two years. Preparatory training is provided before these Graduates take up their placements.

In 2000 a total of 23 participants availed of this opportunity and went on placement to Japan, Taiwan and Switzerland. Provision has been made to give this opportunity to 24 people in 2001. It is expected that this programme will further expand in the future.

	€'000	
	2000	2001
Training courses with S&T input	47,012	61,627

FÁS operates a number of training courses with a Science & Technology element associated with them. These courses are aimed at a wide audience from the individual jobseekers, to business, and, on a larger scale, communities.

Jobseekers can avail of Specific Skills Training in a variety of S&T fields. While Businesses can benefit from a Training Support Scheme, courses run by the Environmental Training Unit, Industrial Training Committees and a National Training Fund.

At Community level there is a Community Training Programme.

National Standards Authority of Ireland*

Technical Services

	€'000 2000	2001
Standards	3,394	3,454
Legal Metrology Services	2,833	3,021
Certification Services	9,507	10,069

* No detailed programme descriptions were received from this agency and so only financial data can be supplied here.

Department of Education and Science

	€'000	
	2000	2001

The Department of Education and Science was established under the Ministers and Secretaries Act 1924, and is responsible for the administration of public education, i.e. first-level, second-level, and third-level.

The Department's total allocation for 2001 is €4,486m. Of this, the allocation to Science and Technology activities is €563m. This is mainly to fund scientific and technical activities in the Institutes of Technology. The Department also funds grants and scholarships to enable students to pursue S&T courses in third level colleges and a range of R&D activities.

Expenditure and programmes for the Higher Education Authority and the Dublin Institute for Advanced Studies are listed separately.

Under the 2000 – 2006 Community Support Framework / National Development Plan the Department will receive EU aid in respect of a number of the S&T related programmes operated in the Institutes of Technology under the Operational Programme for Employment and Human Resource Development and the Productive Sector Operational Programme.

The Operational Programme for Employment and Human Resources Development includes the Middle Level Technician (MLT) and Higher Technical and Business Skills (HTBS) Programme, the Undergraduate Skills and Postgraduate Conversion Programmes, Training of Trainers, Third Level Quality Assurance, the National Qualifications Framework and Education Infrastructure.

The Productive Sector Operational Programme consists of the Research Technological Development and Innovation (RTDI) Programmes including Basic Support for Research and Communications, Project-based and Individual Research, Technological Sector Research, Strategic Research which includes the Programme for Research in Third Level Institutions (PRTLI) and North/South Co-operation.

The expenditure figures listed below do not include the Department's internal administrative overheads associated with these programmes. The Department has approximately 1,100 staff.

EDUCATION AND TRAINING

Institutes of Technology	277,877	341,768

Funding of the scientific and technical activities in the Institutes of Technology.

Support for third level S&T education accounts for approximately 70% of the total exchequer grant for Institutes of Technology (Vote for Third Level and Further Education).

	€'000 2000	2001
Third Level Grants		
Provision of Higher Education grants to enable students to pursue S&T courses in third level colleges and institutions. Approximately 32% of Higher Education grant holders are pursuing S&T courses. Grants paid to students pursuing university courses are included in the Higher Education Authority figures.	28,602	55,912
Provision of Third Level Scholarships enables students to pursue S&T courses in third level colleges and institutions.	354	419
Provision of VEC and Student Maintenance grants to pursue S&T courses. These grants are included in the fees received by the Institutes of Technology. Scholarships are also paid to Irish students to attend the College of Europe, Bruges.	48,947	53,031

RESEARCH AND DEVELOPMENT

Third Level Research and Development Activities		
An allocation of €33.3m has been provided in 2001 for current spending on research and development. This provision is available to all universities and Institutes of Technology to support the development of their research capabilities, to support outstandingly talented individual researchers and to encourage co-operation within institutions and between institutions. This funding will be allocated for research in humanities, social sciences and science and technology.	13,629	33,331
The Higher Education Authority has been asked to develop proposals and mechanisms for expenditure of this research and development provision on the basis of making funding available to Universities and Institutes of Technology through a competitive process.		
The provision in 2001 for the capital component of the Programme for Research in Third Level Institutions (PRTLI) and the capital element of the Research Technological Development and Innovation (RTDI) is €2.54m.	12,697	2,539
The Department will directly support a number of educational research projects through its research and development committee.	258	385
Support is being provided for certain projects jointly with the EU. In 2000 activities will include:	568	1,290
i. LEONARDO – the Vocational Preparation and Training of young people in the context of the EU Action Programme in Education		
ii. Socrates Action Programme		
Contributions to the budget of the European University Institute (Italy) and support of Irish students to pursue research projects.	135	105
Provision of Senior Visiting Fellowships to enable senior scientists or engineers from Ireland to go to other countries to study new techniques or developments, and to enable qualified specialists from other countries to be invited to come to Ireland for a period in the capacity of advisors. The scheme is administered by the Royal Irish Academy.		
Provision of Post Doctoral Fellowships	362	413
Support for research activities in the field of education in St. Patrick's College, Drumcondra, Dublin.	1,054	1,152

	€'000	
	2000	2001
Scientific and Technological Education (Investment) Fund	25,212	41,613
The passing of the Scientific and Technological Education (Investment) Fund Bill in 1997 by both Houses of the Oireachtas resulted in the establishment of the Fund which is used to develop technology education at all levels ranging from primary schools to advanced research. The three main objectives of the Fund are: ► To review, extend and modernise the infrastructure of third level institutions, particularly in the technological sector. ► To develop new areas of activities where emerging skill needs have been identified. ► To invest in promoting innovation to maintain and further our economic growth.		
International S&T Activities	403	439
Irish contribution to UNESCO, the International Institute for Education Planning, and the International Centre for Registration of Serials.		
ICTs Programme for Schools	8,257	34,918
The Schools IT 2000 Programme aims to ensure that pupils in First and Second Level schools have the opportunity to achieve computer literacy and to equip themselves for participation in the information society. It includes a comprehensive teacher training programme in ICTs.		

Higher Education Authority*

	€'000 2000	2001
RESEARCH AND DEVELOPMENT		
General promotion of knowledge	87,679	87,496
Equipment for R&D	1,958	1,897
Agriculture Non-OP	86	152
OP Research - Marine	95	178
OP Research – Forestry	576	122
OP Research – Environment	1,571	2,863
OP Research – Agriculture	6,900	5,202
Enterprise Ireland Grant Schemes – HEA	2,795	5,720
Enterprise Ireland Grant Schemes – HEIC	844	4,114
Enterprise Ireland Grant Schemes – Science	5,127	6,133
Buildings Non-ERDF – R&D	2,887	6,822
Programme for Research in Third Level Institutions – Cycle 1	18,353	31,387
Programme for Research in Third Level Institutions – Cycle 2	-	9,523
TRAINING AND INFORMATION		
General support	203,741	216,786
Equipment for training	4,595	4,452
Buildings Non-ERDF – R&D	6,778	16,011
Skills Initiative Round 3	-	1,547
Skills Initiative Round 2	7,184	10,375
Skills Initiative Round 1	18,870	11,242
Equipment renewal grants	6,232	2,241
OTHER S&T		
Non Academic Admin	74,318	79,216

* No detailed programme descriptions were received from this agency and so only financial data can be supplied here.

Dublin Institute for Advanced Studies

	€'000 2000	2001

The Dublin Institute for Advanced Studies is a statutory corporation established in 1940 under the Institute of Advanced Studies Act, 1940. The Institute has three constituent schools – the School of Celtic Studies (not included in the Science Budget), the School of Theoretical Physics and the School of Cosmic Physics. Each school has an independent governing board. The Institute, through the constituent schools, pursues fundamental research and trains advanced students in methods of original research.

The Institute is financed by an annual grant-in-aid from the Department of Education and Science with small additional income from sales of publications and from other agencies.

There are sixty three full time staff and eighteen research scholars working in the Institute, of whom thirty two are engaged in scientific research, eight within the School of Theoretical Physics and twenty four within the School of Cosmic Physics.

Expenditure data include general overheads equivalent to an average of 32% of the figures shown.

RESEARCH

The School of Theoretical Physics

565 325

The school pursues 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

1,498 1,378

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

INFORMATION AND SPECIALIST SERVICES

The School of Theoretical Physics

183 178

Provides information and advisory services in the following areas: theoretical particle physics; classical statistical mechanics; quantum statistical mechanics, quantum electronics; probability theory applied to telecommunications.

The School of Cosmic Physics

527 502

Information on astronomical and geophysical phenomena is provided to Government Departments, to educational authorities, to the Garda Síochána and to the legal, engineering and medical professions etc. The School administers observing facilities in the Canary Islands on behalf of all Irish astronomers and co-ordinates use of the Hubble Space Telescope and provides a public education service through the Open Night Programme at Dunsink Observatory.

	€'000	
	2000	2001

Department of the Environment and Local Government

The mission of the Department of the Environment and Local Government is to ensure, in partnership with a strengthened local government system and with its specialised agencies, that Ireland has a high quality environment where infrastructure and amenities meet economic, social and environmental needs and where development is properly planned and sustainable. To this end, the Department is responsible for a range of services, provided mainly through the local government system, including environmental protection, physical planning, urban renewal, roads, road traffic, vehicle and driver licensing, water supplies, sewerage, housing, fire protection and building control. It also has responsibility for the local government system (including structures, personnel, finance and audit), construction industry matters and franchise and electoral systems.

The annual estimate for the Department in 2001 is in excess of €2.79 billion.

The Department employs over 900 staff. The Department also funds the National Roads Authority and the Environmental Protection Agency, which are considered separately in this document, as well as the Medical Bureau of Road Safety.

The Medical Bureau of Road Safety

	1,566	1,069

The Medical Bureau of Road Safety was established in November 1968 under Part V of the Road Traffic Act, 1968. The Bureau's principal function is to carry out analyses, for their alcohol content, of specimens of blood and urine, provided for the Gardaí by people suspected of drink driving offences. The Bureau issues certificates in respect of the results of these analyses, which may be used as evidence in prosecutions for such offences.

Other functions of the Bureau include:

The provision of equipment to the Gardai for the taking of specimens, the approval of apparatus for indicating the concentration of alcohol in breath, blood or urine and research on the effects of alcohol and the taking of drugs in relation to driving, including the methods for determining the amount of alcohol or drugs in a person's body. Under the Government Strategy for Road Safety in 1998 – 2002, the Bureau has been involved in the introduction of evidential breath testing by the Gardaí through the supply and testing of equipment and the provision of training. Also as part of the Strategy the Bureau commenced a major two-year drug analysis programme in 2000.

The Bureau is financed by an annual grant from the Department of the Environment and Local Government. The Board of the Bureau consists of five members, including the Director, appointed by the Minister for the Environment and Local Government. The premises and staff are provided by University College Dublin at Earlsfort Terrace on a repayment basis.

Funding of the Medical Bureau of Road Safety for 2000 was €1.566m by way of a grant from the Department. The 2001 allocation is €1.069m.

	€'000	
	2000	2001
Planning Research	86	77
This function which was formerly the responsibility of the Environmental Research Unit, monitors and evaluates the implementation of planning legislation at local authority level by providing: Annual Statistics on Planning Control and Administration; Quarterly Statistics of Planning Applications and Decisions; Annual Inventories of Environment Impact Statements and regular sample surveys of the operation of the Development Process.		
Information searches in relation to Guidance Notes and Development Plan preparation are carried out. Some work is also ongoing in relation to the use of G.I.S.		
Construction Research	126	117
A Forum for the Construction Industry was established in 1997 to oversee the implementation of almost 90 recommendations contained in the Strategic Review of the Construction Industry report.		
Technical support for the Forum for the Construction Industry was provided during the year. The parameters of sustainable construction, with particular reference to the Irish environment, are under study and specific lists of actions will be developed. Work on the development of codes and standards under the EU Construction Products Directive is continuing in association with the National Standards Authority and the Irish Agreement Board. A revised and updated edition of the Recommendations for Site-Development Works for Housing Areas was published in November, 1998. Indices for the Formula Method for price variations on construction contracts have been developed and maintained. Studies by the EU of construction price parity were completed and a new set is dealt with each year.		
Following the launch of a revised building control package in 1997, effective from 1 July, 1998, ongoing reviews of the Technical Guidance Documents to the Building Regulations will result in the publication of revised parts to the Building Regulations.		
Water Quality	15	13
Under the terms of the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Convention), Ireland and the United Kingdom prepared an environmental Quality Status Report (QSR) on that part of the North West Atlantic region extending westwards off the British mainland to the edge of the continental shelf i.e. OSPAR Region III "The Celtic Sea". This area includes all of Ireland's marine and coastal areas. This regional report feeds into the composite report for the entire OSPAR region which was completed in 2000.		
The main Irish input into this report was published by the Marine Institute in 1999 under the title "Ireland's Marine and Coastal Areas and Adjacent Seas: An Environmental Assessment". This report provides		

- a compilation of existing knowledge (physics, chemistry, biology, human activities) of the area
- an assessment of this information in relation to agreed criteria of environmental quality
- a statement of the prevailing condition of the area.

	€'000	
	2000	2001
International Collaboration	46	50

Contributions to International Organisations:

- Prevention of marine pollution from land based sources
- Long range transboundary air pollution
- Convention on climate change

€'000	
2000	2001

Environmental Protection Agency

The Agency was established on 26 July 1993 by Ministerial Order made under Section 19 of the Environment Protection Agency Act, 1992.

The main objectives of the EPA are:

- To implement and enforce a system of Integrated Pollution Control (IPC) licensing for all scheduled activities throughout the country using best available technology not entailing excessive costs (BATNEEC) to eliminate or limit releases to the environment and to minimise impacts on the environment.
- To implement and enforce a system of licences for all significant waste recovery and disposal activities, including landfills.
- To prepare and update periodically a national hazardous waste plan for implementation by other public authorities.
- To develop and implement, in co-operation with local authorities and other relevant bodies, a national integrated, decentralised, environmental monitoring programme so as to improve, standardise and expand the quality of the environment database and improve the scientific basis for better decision making and evaluation of the state of the environment.
- To oversee the pollution control and related environmental activities of local authorities and ensure that they are carried out in an effective manner.
- To assess potential and emerging environmental issues in Ireland, and relevant legislative and other developments in EU countries and internationally.
- To develop appropriate environmental quality objectives and corresponding environmental quality standards.
- To assess and verify the quality of drinking water throughout the country on a regular basis, and to develop codes of practice, guidelines and manuals for the purpose of environmental protection and to improve the management, maintenance and operation of water and sewage treatment plants and landfill sites.
- To evaluate the quantity and the quality of the nation's water resources to facilitate sustainable use, and the implementation of programmes to maintain and improve the quality to cater for all users.
- To develop a pollution emissions register (PER) and improve the quality of information to the public.
- To improve public understanding of the environment and environmental issues and to promote greater public involvement in the protection of the environment by providing greater public access to environmental information and relevant databases.
- To promote the need to take into account environmental considerations in policies, programmes and projects undertaken by all sectors of the economy, including the public sector, based on the principles of sustainable and balanced development, the precautionary approach to pollution control and the use of clean technology;
- To promote and co - ordinate environmental research.

The Agency has identified four programme areas:

- Integrated Pollution Control (IPC) Licensing and Control;
- Environmental Monitoring and Laboratory Services;
- Environmental Management and Planning (Incorporating Waste Licensing) ;
- Corporate Affairs.

The Corporate Affairs Programme deals mainly with administrative matters (IT, Finance, Personnel, etc.). The manpower and costs of this programme have been apportioned over the other three programmes for present purposes.

The Agency managed, as part of its overall programme, the Environmental Monitoring, Research and Development sub-programme of the Environmental Services Operational Programme 1994-1999.

By the end of 2000, twenty R&D projects had been supported under this programme, all of the €6.5m total budget for the R&D programme was committed, and the entire budget had been drawn down and paid out to the project participants.

THE ENVIRONMENTAL RESEARCH, TECHNOLOGY, DEVELOPMENT AND INNOVATION (RTDI) PROGRAMME (2000 TO 2006)

In addition to completing the 1994-1999 programme the Agency was asked early in 2000 by the Department of the Environment and Local Government to prepare and begin the implementation of a new programme called Environmental Research Technology Development and Innovation (RTDI). This programme is an element of the Productive Sector Operational Programme and is funded under the National Development Plan (NDP) 2000-2006. The budget for this seven-year environmental research programme is €25m.

The first call for proposals under the Environmental RTDI programme was launched in May 2000 following extensive consultation with more than 250 organisations and individuals. Subsequently 28 priority research projects were identified addressing aspects of the five main issues highlighted in "Ireland's Environment - A Millennium Report" (EPA 2000). By the end of the year 42 contracts (working on 39 projects) were awarded to researchers across a wide range of disciplines from the public and private sector and involving expertise from inside and outside the state.

The programme is supporting several groups of large scale integrated projects (costing between €317,435 and €3.3m), medium scale projects (costing between €63,487 and €317,435), desk studies (costing less than €63,487), small scale studies (€6,350) and fellowships.

The programme provides up to 100 per cent funding of eligible costs. In cases where there is a significant economic interest, contributions are sought from others in joint funding arrangements. Under the first call for tenders a total of €9.4m of the Environmental RTDI budget was allocated of which €1.8m was committed by other grant aiding bodies in joint funding arrangements. The duration of the projects ranges between 6 months and 5 years.

	€'000 2000	2001
RESEARCH AND DEVELOPMENT		
Environmental Monitoring, R&D Sub-Programme	97	-
The 2000 allocation for this sub-programme represents the balances paid on those contracts which were completed in the latter stages of 1999 and in 2000.		
The Environmental Research Technological Development and Innovation (RTDI) Programme (2000 – 2006)	198	190
The 2001 allocation under this programme is €3.75m, which is funded from the Community Support Framework via the Department of the Environment and Local Government.		
Environmental Monitoring and Laboratory Services	635	508
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.		
TRAINING, EDUCATION AND INFORMATION		
IPC Licensing and Enforcement	222	254
Services in relation to IPC licensing procedures and conditions are the main functions.		
Environmental Monitoring and Laboratory Services	825	1,016
The Agency provides general information and specialist advice to the local authorities and to the Department of the Environment and Local Government in relation to air and water quality problems and on other topics such as the implementation of EU Directives and other international agreements. Other activities include: servicing the Management Committee and the High-Level Expert Group of the European Environment Agency for which the EPA is designated national focal point; preparation of National reports on air and water quality for publication, as well as a general State of the Environment report. Other reports prepared are those dealing with revised national programmes for environmental quality monitoring and for hydrometry; development of an integrated environmental information system for Ireland.		
Environmental Management and Planning	444	508
The Agency provides specialist services on subjects being researched; air/water quality management flows, hazardous and other wastes. An advisory committee on Genetically Modified Organisms is also supported.		
Waste Licensing and Enforcement	190	190
Services in relation to Waste licensing procedures and conditions are the main functions.		

SCIENTIFIC AND TECHNICAL SERVICES

	€'000 2000	2001
IPC Licensing and Enforcement Implementation of the Agency's IPC licensing functions is the main technical service provided by this area.	3,079	4,063
Environmental Monitoring and Laboratory Services The main services provided are in national biological and physio-chemical monitoring programmes for river water quality; measurements of riverine inputs of pollutants to marine waters; collation and processing of hydrometric data; the operation of air quality monitoring stations for NO_2 and ozone; collation of data on SO_2 in smoke from local authority air quality measuring networks; estimates of national atmospheric emissions and back-up analytical services to local authorities, including the operation of a laboratory intercalibration programme; investigations of pollution incidents.	5,982	7,364
Environmental Management and Planning Services are provided in relation to the subjects being researched: air/water quality management flows; hazardous and other wastes. Implementation of licensing functions as regards waste recovery and disposal activities is a growing part of the Agency's work in this area.	678	1,079
Waste Licensing and Enforcement Implementation of licensing functions as regards waste recovery and disposal activities is the main technical service provided.	1,700	2,539

	€'000	
	2000	2001

National Roads Authority

The National Roads Authority was established by Ministerial Order on 23 December 1993. The Order was made by the Minister for the Environment under the provisions of the Roads Act, 1993.

The Authority's primary function, under section 17 of the Roads Act, 1993, is to secure the provision of a safe and efficient network of national roads. For this purpose it has overall responsibility for the planning and supervision of construction and maintenance works on these roads. In addition to its general mandate, the Authority has been assigned a number of specific functions under the Roads Act, including:

- Preparing medium term plans for the development of the national road network;
- Preparing or arranging for the preparation of road designs, maintenance programmes and schemes for the provision of traffic signs and delineation / road markings on national roads;
- Securing the carrying out of construction, improvement and maintenance works on national roads, allocating and paying grants to local authorities for these purposes;
- Carrying out or assisting with training, research or testing activities in relation to any of its functions;
- Promoting the case for Exchequer funding and EU assistance for national roads;
- Entering into agreements with the private sector for financing, operation and management of national road projects, and
- Making toll schemes for national roads.

The Research activities of the NRA are undertaken by:

- The Road Traffic, Safety and Transportation Division
- The Road Maintenance and Pavement Assessment Division.

The Divisions comprise the national centre for road research in Ireland and they perform two broad functions:

- to undertake research and development on road construction, maintenance, safety and transport matters of particular importance in Ireland; and
- to serve as a centre which can disseminate the findings of research in Ireland and other countries.

Both Divisions provide the National Roads Authority, the Department of the Environment and Local Government, the local authorities and their consultants and contractors with information, technical assistance and guidance related to all aspects of road construction, traffic, safety and transportation which enable them to formulate policy and plan, design, construct, maintain and operate the road system in the most cost effective manner. The technical and information services of the Divisions cater for these functions.

	€'000 2000	2001
RESEARCH AND DEVELOPMENT		
Road Traffic, Safety and Transportation	302	367
Research will be carried out on traffic growth, road accidents and countermeasures, speed and seat belt wearing surveys, travel times, vehicle forecasts, social attitudes to travel risk and the maintenance and updating of the national road database.		
Road Maintenance and Pavement Assessment	527	138
Research is undertaken on the development of procedures for the acquisition of road pavement performance data on construction and maintenance methods.		
TECHNICAL SERVICES		
Technical Services	1,169	1,771
The services include: surveys of condition of road pavements, including skid resistance, strength and riding quality; technical support in preparing national specifications for road works; road traffic counting and accident recording; preparation of a road signs manual; cost benefit analysis for transport investment.		
INFORMATION AND SPECIALIST ADVISORY SERVICES		
Activities include: maintenance of detailed databases on traffic counts, road accidents, skid resistance of roads, strength and condition of road pavements; provision of library and technical information services.	467	575

Department of Health and Children

	€'000 2000	2001
RESEARCH AND DEVELOPMENT		
National Cancer Registry Board	1,079	1,105

The National Cancer Registry Board was established in June 1991, under the Health (Corporate Bodies) Act, 1961. Its functions are inter alia, to research and analyse information relating to the incidence and prevalence of cancer and related tumours in Ireland and to promote and facilitate the use of data collected in approved research projects and in the planning and management of services.

Health Promotion Unit	85	76

The Department's Health Promotion Unit has a dual remit:

- a policy-formulation function within the Department of Health and Children concerned with strategic planning, priority setting, research and evaluation and the development of a multi - sectoral approach to health issues at national and local level.
- an executive function concerned with the development and implementation of national and local health promotion programmes independently or in conjunction with statutory or non statutory agencies.

In developing policy for programmes, the Unit has built up an effective and important liaison with the health boards and with national and local voluntary agencies. The Unit sponsors a Chair in Health Promotion in University College Galway.

The function of this academic Department is to engage in multi disciplinary research and teaching programmes in health promotion.

OTHER SCIENCE & TECHNOLOGY ACTIVITIES		
Advisory & Information Services and General Support	6,043	7,667

	€'000	
	2000	2001

Health Research Board

The Health Research Board which comes under the responsibility of the Minister for Health was established on 1 January 1987 under the Health (Corporate Bodies) Act 1961.

Its functions are:

(a) to promote, assist, commission or conduct medical, health and health services research

(b) to promote, assist, commission or conduct such epidemiological research as may appropriately or necessarily be conducted at national level and to assist and support other health agencies with such research

(c) to liaise and co-operate with other research bodies in Ireland or elsewhere, in the promotion, commissioning or conduct of relevant research.

Support for the HRB is provided annually by the Department of Health (estimated at €14.7m in 2001). In addition, some non-voted monies from Irish and U.S. sources, estimated at €2.0m will be received in 2001.

A total of 50 staff are employed.

Overheads, which comprise 9.8% of the 2001 expenditure, are included in the figures.

Medical and Health Services Research

	2,749	4,383

The HRB provides funding for research projects, units and fellowships with the objectives of:

- Supporting high quality health research relevant to health and social gain
- Building health research capacity by supporting careers, training and infrastructure
- Supporting the strategic development of health research in Ireland in the context of national and international developments

Drug Misuse Research

The HRB's Drug Misuse Research Division is a national centre for research on drug misuse issues in Ireland. It is involved in national and international research, and information gathering and dissemination activities in relation to drugs and their misuse.

Disability Databases

The Disability Databases Division is contracted to manage two national service planning databases on behalf of the Department of Health and Children. The National Intellectual Disability Database, established in 1995, and the National Physical and Sensory Database which is expected to be implemented nation-wide in 2002.

Child Health Epidemiology

The Child Health Epidemiology Division is involved in epidemiological research, mainly in the field of child health. The main focus of the current research programme is on neural tube defects and other congenital malformations.

	€'000	
	2000	2001

Mental Health Research

The Mental Health Research Division maintains and extends health information systems in the mental health field and initiates and supports research in the field of psychiatry and related sciences.

	€'000	
	2000	2001

Postgraduate Medical and Dental Board

The Postgraduate Medical and Dental Board was established in 1980 under the terms of the Medical Practitioners Act, 1978. It replaced the former non-statutory Council for Postgraduate Medical and Dental Education and Training (established in 1973).

The Board has the following functions:

to promote the development of postgraduate medical and dental education and training and to co-ordinate such developments; to advise the Minister for Health, after consultation with other bodies, on all matters, including financial matters, relating to the development and co-ordination of postgraduate medical and dental education and training; to provide career guidance for registered medical practitioners and registered dentists.

The Minister for Health, out of monies provided by the Oireachtas, makes annual grants towards expenses of the Board; the grant for 2001 is estimated at €5.54m.

The staff numbers 5 whole-time officers who are supplemented by 59 part-time professional staff.

Expenditure data includes general overheads of 5% of the figures given.

EDUCATION AND TRAINING

Grants to Training Bodies

	1,806	2,266

Provision and administration of financial assistance to recognised medical and dental professional bodies in their exercise of general control over programmed training for doctors and dentists. The areas grant-aided in 2000 were:

- General Practice
- Surgery
- Higher Medical Training
- Public Health Medicine
- Occupational Medicine
- Other Medicine
- Paediatrics
- Obstetrics / Gynaecology
- Radiology
- Anaesthetics
- Psychiatry
- Pathology
- Dentistry

	€'000	
	2000	2001
Co-ordination and Promotion of Postgraduate Education	2,368	3,023
Promotion, co-ordination, facilitation and provision of postgraduate education for doctors and dentists including the training of general practitioners and the organisation of courses in dentistry.		
Establishment of pilot studies on methods of providing such education.		
Advice	4	5
Career guidance activities for the medical and dental professions.		

	€'000	
	2000	2001

Department of the Marine and Natural Resources

The Department of the Marine and Natural Resources was established in mid-1997. It brought together all the functions of the former Department of the Marine along with the forestry functions of the former Department of Agriculture, Food and Rural Development, and mining and hydrocarbon functions of the former Department of Transport, Energy and Communications.

The Department's key roles and functions are:

- To support and facilitate the availability of efficient and competitive sea transport and port services;
- To maximise the long term contribution of the fisheries sector to the national economy;
- To foster sustainable and environmentally friendly development of the forestry service;
- To promote minerals and hydrocarbons exploration and development for the optimum benefit to the Irish economy, consistent with the highest standards of safety and environmental protection;
- To support the sustainable management and development of the marine coastal zone;
- To promote the sustainable development of marine tourism and leisure;
- To prevent, as far as possible, the loss of life at sea by establishing and enforcing high safety standards and providing effective emergency response services;
- To preserve and protect the quality of the marine environment;
- To support and facilitate the development of the marine and natural resources sectors through effective research and technology development;

The Department currently has 288 administrative and 193 professional / technical staff, totalling 481. Of these, about 300 are based in Dublin and the remainder of them work at a variety of locations throughout the country.

RESEARCH AND DEVELOPMENT

Forest Research

The Forest Service is a division of the Department of Marine and Natural Resources. Its objective is to develop and promote the forestry sector in Ireland. In order to achieve these objectives one of its functions is to support research and development activities relevant to forestry development.

Coillte Teoranta and Enterprise Ireland on behalf of the Department undertake forestry research.

Research work undertaken by Coillte Teoranta is production based while that carried out by Enterprise Ireland is product orientated

COFORD (Council for Forest Research and Development) was established in 1993 to co-ordinate forest sector research activity. Funding of research is mainly by means of grant-aid for project work.

COFORD's expenditure is captured in the COFORD return.

	€'000	
	2000	2001

TECHNICAL SERVICES

Exploration and Mining Division

264 | 719

The purpose of the division is to stimulate the discovery of economic mineral deposits and to maximise the contribution of the mining sector to the national economy, with due regard to its environmental and social impact.

The technical section of the division is involved in regulatory and monitoring work for all holders of State facilities under the Minerals Development Acts, 1940 to 1999. At the end of 2000 there were 480 current Prospecting Licences, largely in the central Midlands. 25 companies were visited in the field during the year, 154 licence areas were assessed for continuation, and 94 new applications evaluated.

Environmental constraints were continuously monitored.

Monitoring and assessment continued on the SMF areas (Galmoy, Co. Kilkenny; Lisheen, Co. Tipperary; and Navan, Co. Meath), and also on old mine sites at Avoca, Co. Wicklow and Kingscourt, Co. Cavan; Silvermines, Co. Tipperary and Drumgoosat, Co. Monaghan.

It was necessary in 2000 to engage the services of a number of consultants to carry out studies / examinations of various proposals submitted by Exploration and Mining Companies and to monitor development of new mines. In addition, some technical staff attended specialised training courses relating to exploration and mining. In March 2000, officers of the Department attended the Annual Conference of the Prospectors and Developers Association of Canada at Toronto and mounted a marketing / information display stand there. This was a joint effort in co-operation with this Department, the Department of Energy, Trade and Investment and the Geological Survey of Northern Ireland. Attendance at this Conference is designed to stimulate investment in mineral exploration and development.

A number of presentations were also made both nationally and internationally. Among these were:

- A presentation on regulation of tailings disposal was made at a workshop on Environmental Regulation organised by UNEP and the Government of Australia, at Perth, Australia.
- Presentations on various aspects of mineral exploration and development were made to a group from the Royal School of Mines, London, UK.

Petroleum Affairs Division

508 | 576

The technical section of this division provides the technical expertise necessary for promotion, monitoring and controlling of petroleum exploration and development activities by private enterprise under licence to the Department, specifically the creation, processing (where necessary), analysis and interpretation of geological, geophysical and engineering data supplied by licensees and the formulation of technical recommendations and advice.

At the end of 2000, one Petroleum Lease and twenty-one offshore Petroleum Exploration Licences, eight Licencing Options and eleven Petroleum Prospecting Licences were in place. Also current were two onshore Licencing Options and one onshore Petroleum Prospecting Licence.

EDUCATION AND TRAINING

17 | 23

The Petroleum Scholarship scheme was funded by certain exploration companies to assist postgraduate students undertaking studies leading to advanced degrees relating to the oil and gas exploration industry offshore Ireland. The scheme is administered by the Department.

	€'000	
	2000	2001

Marine Institute

The Marine Institute has the general functions:

'to undertake, to co-ordinate, to promote and to assist in marine research and development and to provide such services related to marine research and development that in the opinion of the Institute will promote economic development and create employment and protect the marine environment'.

Marine Institute Act 1991

The Marine Institute is also responsible for advising the Minister on policy relating to marine research and to advise the Minister on proposals relating to such research and development requiring funding from the exchequer or from any State owned or controlled organisation.

The Institute receives funding in the form of a grant from the Department of the Marine and Natural Resources - €20.57m in 2000 and €24.3m in 2001.

Organisational Structure

Operationally the Marine Institute is structured around six Divisions, each with a Divisional Director who reports to the CEO.

The Divisions are:

- Science, Technology and Innovation Services
- Marine Fisheries Services
- Salmon Management Services
- Marine Environment and Fish Health Services
- Irish Maritime Development Office
- Corporate Services Division

The Institutes main offices/laboratory facilities are located in Dublin City (38 staff); Abbotstown, Co. Dublin (70 Staff); Galway (10 staff) and Newport, Co. Mayo (17 Staff). In addition, Fishery Assessment Technicians (FATs) are located at Dingle, Killybegs, Howth, Rossavel and Dunmore East. Marine Enterprise Investment Programme (MEIP) Fund Officers are located at Tralee and Letterkenny.

Marine Science Technology and Innovation Services Division	2,306	3,455

The Marine Science Technology and Innovation Division is responsible for Marine Technology, Water-based Tourism and Leisure, Communications, the Marine Data Centre and Research Vessel Operations (RV Celtic Voyager).

Key undertakings in 2000 included the planning and implementation of the National Seabed Survey in association with the Geological Survey of Ireland and the design and deployment, in association with Met Eireann, of the first of a suite of 5 data buoys as part of a National Marine Data Buoy Network

The establishment of the pilot Marine Enterprise Investment Programme (MEIP), in co-operation with regional development agencies, marked a new approach to assisting the small but growing marine industry sector.

	€'000	
	2000	2001
Marine Fisheries Service Division	2,985	2,986
Salmon Management Services Division	2,576	2,626
Marine Environment and Fish Health Services	2,468	2,870
Corporate Services Division	2,757	5,673

Marine Fisheries Service Division

The Marine Fisheries Services Division (MFSD) provides monitoring, assessment, research and advisory services on the marine fisheries resource - a sector which produced landings of €254 million in 2000.

The preparation of the **Annual Stock Book** continues to provide information on fish stock levels in Irish waters and an essential tool for quota negotiations. In 2000, this scientific information proved crucial in implementing the Irish Sea Cod Recovery Plan and averted closure of the Celtic Sea cod fishery.

Salmon Management Services Division

The Salmon Management Services Division (SMSD) has the responsibility to deliver scientific services in relation to salmon, aquaculture, sea trout and eels. A staff of 20 scientists, technicians and field assistants are currently located at Newport (Co. Mayo), Abbotstown (Co. Dublin) and Galway City.

In 2000, SMS staff handled over 11,000 wild salmon and eels in the Burrishoole traps and over 20,000 salmon during the course of the sea lice-monitoring programme. In addition, over 140,000 juvenile and adult salmonids were reared at the Furnace facility. A major CLAMS (co-ordinated local aquaculture management) initiative was launched in Kilkieran Bay in association with BIM.

Marine Environment and Fish Health Services

The Marine Environment and Health Services Division (METHS) is responsible for a range of environmental and fish health services required under national and EU regulations. The Division comprises some 25 technical and scientific staff based at the Institute's laboratories in Abbotstown.

The Marine Environment and Fish Health Division is comprised of the following sections:

Marine Chemistry, which carries out a range of technical monitoring work in the area of the marine environment and marine food products.

Biotoxin Unit, which manages the national biotoxin monitoring programme, to ensure the safety of shellfish production in species such as mussels, oysters and scallops.

Fish Health Unit, which provides statutory and diagnostic services in the area of fish disease for the Irish aquaculture industry.

Corporate Services Division

The Corporate Services Division provides a range of services to all Divisions of the Marine Institute. Corporate Services is responsible for Finance, Human Resources, Information Technology, Administration & Legal Services, International Co-operation & Structural Funds.

Marine Research Measure – Operational Programme for Fisheries National Development Plan (1994-1999)

2000 saw the successful completion of a further 27 R&D projects supported under the Marine Research Measure and the completion of up-grading of the Institute's Newport laboratories (Co. Mayo) to provide a Centre of Excellence in salmonid research.

	€'000	
	2000	2001
Marine RTDI Measure – Productive Sector Operational Programme National Development Plan (2000- 2006)	8,436	9,199
Following a competitive tendering process, a contract was signed in December for the delivery of a new €65m multipurpose research vessel (*Celtic Explorer*) to be funded under Measure 1 of the Marine RTDI Measure.		
Maritime Ireland/Wales INTERREG-II Programme (1994-1999)	207	330
Work has been progressing satisfactorily on the completion of the 16 co-operative projects and 10 collaborative networks funded under the Measure 1.3, Protection of the Marine and Coastal Environment, of the Ireland/Wales.		

Irish Maritime Development Office (IMDO)

The Irish Maritime Development is the newest of the Marine Institute's Operational Divisions. Established in 1999, IMDO became fully operational in 2000 with publication of a framework policy for the development of the Irish shipping sector "The Turning of the Tide"

The IMDO is assisted in its role by a 19 person ministerial appointed advisory group made up from representatives from both the public and private sector.

Bord Iascaigh Mhara*

	€'000 2000	2001
Fisheries Development – Surveys (general, shellfish and finfish)	1,345	
Fisheries Development – Gear Technology	145	
Fisheries Development – E-commerce Seminar	19	
Laboratory	69	151
Aquaculture – Shellfish development	141	
Aquaculture Surveys	3	
Aquaculture – Finish Technical	29	
Aquaculture – Quality Mussel Scheme	537	
Aquaculture – Detection of viruses	25	
Aquaculture – seaweed project	32	
Aquaculture – environment quality	25	
Training		1,600
Fisheries Innovation and Sustainability		3,809
Fisheries – deepwater species		2,820
Fisheries – inshore fisheries		2,141

* No detailed programme descriptions were received from this agency and so only financial data can be supplied here.

	€'000	
	2000	2001

Central and Regional Fisheries Board

The Central and Regional Fisheries Boards were established in October 1980 under the Fisheries Act, 1980. The Boards act under the aegis of the Minister for the Marine and Natural Resources.

Their main functions are the protection, conservation, management and development of Ireland's inland fisheries and sea angling resources, and to this end they operate a general policy for the protection and improvement of inland fisheries, the surveying of sea angling resources and the protection of molluscs. Their activities include surveys, development, management protection and conservation of fisheries; research and experimental work, and management of fish farms and hatcheries.

Seven Regional Fisheries Boards, which were established simultaneously with the Central Fisheries Board, are responsible for fisheries conservation and development in their particular regions.

The Central Fisheries Board is financed by a grant-in-aid under the Fisheries Vote, supplemented in the case of the Regional Boards by fishery rates, licenses, and anglers' registration fees. For 2001 the grant-in-aid to the Boards is €14.06m for pay, €3.36m for non-pay. Non-exchequer funding (i.e. current "own resources" of the Central and Regional Fisheries Boards) estimated at €2.46m.

Scientific and Technical Services	1,724	2,032

This activity includes assessing the biological potential of freshwater lakes and rivers for fishery development; many of these databases are used to design riverine rehabilitation programmes. Surveys of salt-water areas to locate habitats of popular marine sport fish and surveys of stocks of such fish; evaluating the progress of current development programmes in terms of fish numbers, etc.; checking on conditions of fishing waters, i.e. measuring trophic/nutrient status and pollution hazards which might threaten the State's investments in fisheries; water sampling and analysis for pollution control and prosecutions.

In 2000 the CFB, on behalf of OPW, undertook environmental assessments in relation to their drainage maintenance programmes. A sum of €63,487 was made available for this work. A similar amount has been allocated for this programme in 2001.

In 2000 the CFB carried out Environmental Impact studies, on behalf of OPW, in relation to fisheries implications of proposed arterial drainage and flood relief projects. These studies provide baseline information for decision-making in regard to necessary habitat mitigation measures to be developed and implemented. The costs were in the region of €19,046.

In June 2000 the CFB together with a group of University partners (U.U., U.C.D., U.C.C., N.U.I.G.) submitted a successful tender for EPA RTDI funding. The aim of the research project is to develop a model which will relate water quality (based on the EPA Q Ratings system) to fish stocks. The overall objective is to develop an effective methodology which will establish ecosystem quality and which will satisfy the monitoring requirements of the Water Framework Directive. The overall value of the project is circa €326,323 of which the

CFB will receive €184,112 (€93,405, €58,135 and €32,569 in 2001, 2002 and 2003 respectively).

In 2000 an amount of €63,487 was made available to the Central Board by Waterways Ireland for investigations into fish stocks, the status of aquatic plants and their control and water quality in the Royal and Grand Canals, the Barrow Navigation and the Shannon-Erne Waterway. It is expected that €215,855 will be allocated for 2001.

A project which involved formulating a control / eradication strategy for Giant Hogweed on the Mulkear River catchment was commissioned by the OPW for which an amount of €19,046 was expended in 2000. An amount of €6,349 is expected to be expended in 2001.

The Central Fisheries Board was funded to the amount of €59,043 in 2000 for a project on the River Moy to develop a Geographical Information System which will assist the Fisheries Catchment Management process.

A payment of €698,355 for the construction and development of a coarse fish hatchery and rearing facilities was approved under the Tourism Angling Measure of the EU Tourism Operational Programme for which an amount of €335,211 was expended in 2000.

Two projects on the rehabilitation of sea trout stocks in the west of Ireland and on development of the River Erriff were approved under an EU Tourism Operational Programme for which amounts of €24,696 and €13,096 respectively were expended.

COFORD

	€'000	
	2000	2001

COFORD is the National Council for Forest Research and Development. COFORD manages the Forestry RTDI programme of the Productive Sector Operational Programme. Its activities are funded by the Irish Government under the National Development Plan, 2000-2006. COFORD's objectives are:

- to identify research needs and establish priorities in research and development for the forest industry;
- to co-ordinate forest research activities and channel research towards identifiable economic, environmental and social needs;
- to foster specialisation and scientific achievement among research institutes universities and Institutes of Technology.

The COFORD Board has 16 members, representative of the industrial (including growers), educational, research and state sectors. The Board has responsibility for setting the research programme, deciding on project approvals and funding levels.

The executive comprises five full time staff. The COFORD offices are located in the Agriculture Faculty at University College Dublin, Belfield.

COFORD is a member of the European Tropical Forest Research Network (ETFRN). The network promotes exchange of information on research and development in tropical forestry. COFORD is also a member of the Timber Research and Development Association (TRADA).

International collaboration is further enhanced through membership of the European Forest Institute and IUFRO, the International Union of Forest Research Organisations.

Close liaison with industry is essential in the furtherance of COFORDs' objectives. Such contact is facilitated through membership of the Irish Forestry Industry Chain. The chain brings together the different sectors of the forest industry for which it acts as a unified voice.

Total expenditure allocation by COFORD for 2001 is €1.3m. Funds transferred to Teagasc, Coillte and the Universities to carry out research are accounted for in their respective returns.

RESEARCH AND DEVELOPMENT

Research Support

490	474

Located in UCD, the Executive Unit has permanent staff of 5 people and is funded 75% from EU Structural Funds with 25% matching funds from the Department of Agriculture, Food and Rural Development.

Research Activities

885	825

The objective of projects supported is to strengthen existing facilities so as to promote research associated with forestry e.g. reproductive material, silviculture and forest management, harvesting and transport and wood processing as well as related socio-economic issues. Funding for projects in HEA colleges and non-commercial state agencies is accounted for in those agencies' programme descriptions.

	€'000	
	2000	2001

Department of Public Enterprise

The Department of Public Enterprise is primarily responsible for the formulation of high-level policy for the transport, energy and communications sectors. One of the major roles of the Department is in exercising its shareholder responsibility for ten commercial State enterprises through effective communication of the State's mandate to each organisation. The Department also has a role in providing the appropriate regulatory framework for the transport, energy and communications sectors and ensuring sufficient resources are provided so that each sector's infrastructure and services are brought to and maintained at an appropriate level.

Science and technology expenditure by the Department of Public Enterprise is incurred by the Geological Survey of Ireland and Met Éireann, which are line divisions of the Department. The Department also provides funding through Grant-in-Aid to the Radiological Protection Institute of Ireland.

In 2001 the Government decided to transfer responsibility for the Digital Hub (the new location for digital content industries in the Liberties/Coombe area of Dublin) and MediaLabEurope (the third level research facility) projects to the Minister for Public Enterprise.

The energy conservation programme formerly administered and managed by the Department is now the responsibility of the Irish Energy Centre.

Geological Survey of Ireland (GSI)

	€'000	
	2000	2001

The Geological Survey of Ireland was established in 1845 and is currently a division of the Department of Public Enterprise.

The GSI is the national geoscience agency. Its role is the provision of information and advice on all aspects of geology, especially as they relate to mineral resources and the environment in Ireland.

This is done by providing basic knowledge of the fundamental geology of the country by field and compilation mapping and the production of maps and reports depicting and describing its geology, geochemistry, geophysics, geotechnical and underground water resources; by offering technical advice to the farming community, prospectors, engineers, industrialists, and the general public; by providing geological advice to Government and local authorities; by assisting Irish geologists and other experts to participate in EU supported programmes.

The GSI has a staff of 88 (including temporary staff) comprising a mix of professional, cartographic, technical and administrative grades.

The GSI is largely financed from allocations made by the Department of Public Enterprise.

The Survey's activities and outputs are organised within five priority programme areas:

- Bedrock Mapping
- Quaternary and Geotechnical
- Groundwater
- Minerals
- Marine Geology

TECHNICAL SERVICES

Bedrock Mapping

	1,215	948

This programme is concerned with the completion of national coverage of bedrock geology at 1:100,000 scale by the end of 2001 and of a new national geology map at 1:500,000 in 2001.

Quaternary – Geotechnical

	1,072	1,388

The main work in this programme is the provision of Quaternary mapping on a county basis for use in Groundwater Protection Reports and Mineral Potential Reports. A national geotechnical database open-file service is also provided.

Groundwater

	626	1,025

The main element of this programme is the provision of Groundwater Protection Assessments to County Councils. The maintenance of national databases on groundwater resources and provision of expert advice on all aspects of groundwater are also key functions.

	€'000	
	2000	2001
Minerals The main activities of this programme are the provision of Mineral Potential Assessment Reports for Local Authorities and maintenance of a national minerals database and information service.	773	672
Marine Geology This programme has undergone a major expansion from 1999 onwards with the initiation of a major survey of the Irish seabed by multi-beam sonar systems over seven years at a total cost of €25.4m.	5,547	9,465

Radiological Protection Institute of Ireland

	€'000 2000	2001

The Radiological Protection Institute of Ireland was established on 1st April 1992 in accordance with the provision of the Radiological Protection Act, 1991. It acts under the aegis of the Minister for Public Enterprise.

Its main functions are: to advise the Government and to provide information to the public on matters relating to radiological safety; to regulate the use, transportation and disposal of radioactive materials; to prepare safety codes and regulations for the safe use of ionising radiation; to measure levels of radioactivity in the environment and assess their significance; to assist in the development of a national plan for an emergency arising from a nuclear accident; to provide a dosimetry service and to promote knowledge, proficiency and research in nuclear science and technology.

The RPII is financed by grant-in-aid (€2,216,963 in 2000) and income from contracts and charges for services. The Board's earned income in 2000 was €925,639 of which €226,013 came from Irish Industry (for export certification services); €248,869 from the Personnel Dosimetry Service and €284,421 from contracts, including EU contracts; €119,355 from licence fees and €46,980 from miscellaneous sources.

The total permanent staff complement in the Radiological Protection Institute of Ireland is 42 which includes specialists in physics, chemistry, medicine, engineering, health physics, biology and other disciplines.

39 staff are directly involved in science and technology activities.

Expenditure data includes general overheads of 14% of the figures given.

Radiation Protection in Medicine and Industry

	848	865

The programme controls by licence the use of ionising radiation in medicine, industry, research and education; prepares regulations and codes for the safe use of ionising radiation; and provides personnel dosimetry and instrument calibration services. In 2000 the combined income from these services was €413,935 and €431,711 is expected in 2001.

Monitoring of Environmental Radiation

	795	789

This programme monitors contamination of the aquatic and terrestrial environment by radioactivity from man-made sources, and related research is carried out; it also provides an export certification service to Irish industry. The total income from Irish industry was €226,013 in 2000 for export certification services and €203,158 is expected in 2001.

Radon Studies and Information Service

	782	910

The monitoring of indoor radon levels in homes, schools and workplaces, and related research to determine the extent and causation of elevated radon levels in buildings are the main elements of the programme. Information and advice to Government and other agencies on all matters relating to ionising radiation and radiological protection are also provided.

	€'000	
	2000	2001
Emergency Planning	263	367

The RPII has a key role to play in the National Emergency Plan for response to any threat of radiation exposure in Ireland as a result of an accidental release of radioactivity into the environment from a nuclear accident abroad. In such circumstances the Institute has responsibility for signalling an alert for the country and for advising initially on any countermeasures which may be necessary. Various elements of the Plan are regularly tested both on a national and international level.

The Institute operates a nation-wide surveillance network, which continuously monitors external radiation. Data from monitoring sites, located mainly at meteorological stations, is relayed to the Institute.

Met Éireann

	€'000	
	2000	2001

The Irish Meteorological Service, which adopted the corporate title of Met Éireann in 1996, is a Division of the Department of Public Enterprise and was established in 1936.

The Service is engaged in the following activities:

Collection, analysis and publication of meteorological, geophysical and geochemical data; supply of weather forecasts, statistical information and scientific advice to agricultural, industrial and public utility undertakings, the press, radio and television, maritime interests and members of the public; supply of similar information to Government Departments, Semi-State bodies, and the Defence Forces; provision of meteorological facilities for civil airlines operating to and from airports in Ireland and/or flying over Irish territory, and the supply of advice on meteorological aspects of civil aviation problems generally; development work in fundamental and applied meteorology; co-operation with the meteorological services of other countries and the representation of Ireland at meetings concerned with international co-operation in meteorology.

Met Éireann is funded directly by the Department of Public Enterprise, but a significant portion of the expenditure is recovered by the Department in the form of route charges (€7.1m in 2000) payable by the airlines for meteorological services to civil aviation, and by means of fees (€1.31m in 2000) for information and advice supplied to commercial and other interests on a repayment basis.

229 staff are employed in the Service on a full-time basis.

Scientific and Technological Information

	6,214	6,829

Meteorological information is provided on a routine basis to the media and the general public. The Premium Rate Weather Service continues to be successful and its scope has been extended to allow for provision of data and/or forecasts via fax. A Premium Rate service dedicated to aviation sector users was introduced in 1998.

More detailed information and special advice is also available directly to agricultural and marine interests, for legal and commercial purposes, to the aviation sector, for off-shore oil exploration and to other specialised interests as required. Much of this information is supplied on a commercial basis.

A warning service is provided for gales and other weather phenomena of a hazardous nature.

The Service also makes available a wide range of climatological and geophysical data in the form of bulletins, brochures and regular publications.

Research and Development

	1,065	1,335

Research is carried out in various fields of meteorology and climatology. The primary thrust of the research effort is towards the development of computer models for weather analysis and prediction and participation in an international research collaboration called HiRLAM (High Resolution Limited Area Modelling), together with Norway, Sweden, Finland, Denmark, Spain, the Netherlands and Iceland. The HiRLAM forecasting model is now in routine use.

	€'000	
	2000	2001
In 1997 Met Éireann participated, along with meteorologists from several other countries, in the operational data-gathering phase of FASTEX (Fronts and Atlantic Storm Tracks Experiment) and is currently involved in the follow-up FASTEX-CSS (Cloud Systems Study). This phase will conclude in early 2001.		
Technical Training		
Training is provided within the Service in several areas. More specialised training is obtained by sending staff to outside agencies.	352	448
International Activities		
Ireland, through Met Éireann, is a member of a number of international organisations which either concern themselves with the co-ordination and standardisation of meteorological activities on a global basis, or comprise co-operative ventures on the part of a number of countries to make available facilities which would be difficult or impossible for an individual country to provide on its own.	1,903	2,805
These include, inter alia:		
WMO: The World Meteorological Organisation is a specialised agency of the United Nations, established in 1950 with its headquarters in Geneva. Through the participation of the national meteorological services of its 185 members, it provides the framework for international co-operation in meteorology and operational hydrology.		
EUMETSAT: The European Meteorological Satellite Organisation comprises 17 European States acting in co-operation to provide operational meteorological satellites.		
ECMWF: The European Centre for Medium Range Weather Forecasts in Reading, England, is supported by 18 member countries which pool their resources for the production of high-quality computer based forecasts in the range of 2 to 6 days ahead. The Centre's products are available operationally to all the member States.		

	€'000	
	2000	2001

Department of Social, Community and Family Affairs

The main functions of the Department are to formulate appropriate social protection policies and to administer and manage the delivery of statutory and non-statutory social, community and family schemes and services.

The mission of the Department is to promote social well-being through income and other supports which enable people to participate in society in a positive way.

Monitoring and Evaluation

The main objectives are: the systematic review and evaluation of existing social welfare policies, programmes and schemes and the clarification of their objectives, in co-operation with line management; the monitoring of economic and demographic developments and their impact on social welfare; the formulation of new social policy developments and their budgeting; liaison with Government departments and other agencies on social policy matters; development of a statistical base for internal management and for publications.	1,754	1,894

48 staff are employed on these activities.

RESEARCH FUNDING

Economic and Social Research Institute (ESRI) National Survey

In addition to research projects commissioned by the Department, it has a research programme with the ESRI which relates to the national Living in Ireland (LII) survey. This survey of some 3,000 to 4,000 households is carried out annually by the ESRI as part of a European Panel Survey, undertaken by Eurostat.

Information is collected on the level and composition of household income, the employment and unemployment experience of the households' members and other information which give important insights into the living standards of households.

The aim of the annual survey is to track a large random sample of households through time to examine the nature and causes of changes in income, labour market experience and other aspects of people's lives. The data provide an important resource that has improved significantly the analyses of and public policy debate on poverty, income distribution and the effectiveness of social welfare expenditure.

Consultancy etc.

The expenditure is mainly in respect of fees and expenses for consultancy assignments and studies. The services for which provision has been made are mainly technical software support and design and development of new computer systems to support the administration of social welfare services.	2,948	27,300

	€'000 2000	2001

SCIENTIFIC AND TECHNICAL SERVICES

Anti-Poverty Programme — 3,276 — 4,473

The Combat Poverty Agency Act was enacted in 1986. 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. It produces practical resource materials, and supports training and education programmes for the community and voluntary sector as well as providing direct funding through grant schemes. It supports innovative approaches to tackling poverty through resourcing pilot programmes.

The Agency is a joint intermediary for the EU Special Support Programme for Peace and Reconciliation along with Area Development Management Ltd.

INFORMATION SERVICES

Library / Publications — 103 — 98

International Collaboration — 0 — 38

The Department is a member of the International Social Security Association, the aims of which are the protection, promotion and development of social security throughout the world.

	€'000	
	2000	2001

National Economic and Social Council

The Council was established by Government in November 1973. Its members, in addition to independents, include representatives from employer and employee unions, agricultural groups and representatives of community and voluntary organisations.

NESC's main task is to provide a forum for discussion of the principles relating to the efficient development of the national economy, the achievement of social justice, and to advise the Government, through the Taoiseach, on their application. Council reports are submitted to the Government, laid before each house of the Oireachtas, and published.

It is financed by grant-in-aid from the Department of the Taoiseach and by income from the sale of publications.

NESC employs a total of 9 staff. Consultants are frequently employed to assist in the preparation of specific research reports.

NESC conducts studies on a wide range of relevant topics in the areas of economic and social policy.

RESEARCH

Areas researched include:	609	735

review of industrial policy; farm incomes; social planning; housing requirements and population change; health and energy policy; economic and social policy assessment; manpower policy.

Since the mid-1980s, the Council has published a series of strategy reports which have identified inter-related policy measures which are appropriate to our situation: A Strategy for Development 1986-1990 (1986); A Strategy for the Nineties: Economic Stability and Structural Change (1990); A Strategy for Competitiveness, Growth and Employment (1993) and Strategy into the 21st Century (1996); and Programme for Prosperity & Fairness (2000) These reports provided the framework for negotiation of the national agreements between Government and the Social Partners over the past decade.

In 2000, research projects included:

National Progress Indicators; Benchmarking The Programme for Prosperity and Fairness; Strategic Options for Tax and Social Welfare; The Management of Public Expenditure; Evaluation of the Pilot Poverty Proofing Process.

	€'000	
	2000	2001

Central Bank of Ireland

The Bank is a member of the European System of Central Banks (ESCB). It participates fully in the policy development and operations of the ESCB which are implemented on a decentralised basis. Monetary policy is determined by the Governing Council of the European Central Bank (ECB). The Governor of the Central Bank of Ireland is one of the 17 members of the Governing Council. The ESCB's statutory objective of maintaining price stability is enshrined in Irish law as the Central Bank's primary objective.

Its other main tasks are to ensure that there is a stable and efficient banking system for taking deposits, extending credit and making payments and to act as advisor, agent and banker to the government. The Central Bank has statutory responsibility for the supervision of most financial institutions in Ireland including banks, building societies, ACC, ICC, TSB and a broad range of non-bank firms, exchanges and collective investment schemes. The Bank's expenses, including those incurred on research activities, are financed from revenue earned from the Bank's operations. No grant-in-aid is received, and the Bank transfers a sizeable amount of surplus income to the exchequer each year.

ECONOMIC ANALYSIS, RESEARCH AND STATISTICS

Economic Analysis and Research

	589	540

In the course of 2000, economic analysis and research continued to be focussed on two major areas: the Irish economy and the Euro area economy. Various studies and analyses on diverse aspects of the Irish economy were directed to informing the Bank on those matters and the public and to supplying data and analysis to the European Central Bank. Work in regard to the Euro area economy was aimed at informing and supporting the Bank in the monetary policy discussions of the ECB.

During the year, work focussed on a number of broad areas: analysis and forecasting of economic conditions, inflation, economic growth, monetary policy issues, econometric modelling, public finance and economic statistics.

Economic Intelligence and Forecasting

Four projections of the economy were produced during the year. Together with assessments of the current economic situation, these were published in the Bank's Quarterly Bulletins. Two comprehensive forecasts, based on agreed assumptions, were also produced separately as an input to the ECB's forecasts for the Euro area.

Monetary Issues

Work in the area of monetary policy dealt with a number of themes during the year. The principal focus was on assessing the transmission mechanism of monetary policy; this work was conducted in parallel with other NCBs and the ECB. Employing advanced econometric techniques has revealed that, based on historic patterns, a 1 percentage point increase in interest rates gives rise to a fall of 1/4 of a percentage point in GNP over a one-year horizon with a smaller effect on inflation. This closely mirrors the effects in the Bank's structural econometric model.

Further monetary policy work examined the term structure of interest rates, confirming the expectation hypothesis linking short to long rates.

A study was also undertaken of the level of interest rates appropriate to particular economic circumstances; this rule-based exercise established that, given present economic conditions in Ireland, interest rates ideally should be significantly higher than their recent levels.

An assessment of the evolution of asset prices, housing and commercial property, was completed during the year and published in the Autumn Quarterly Bulletin. Related to this, an examination was also undertaken of the risks of over-investment in the Irish economy.

Econometric Modelling

All fifteen EU central banks are participating in a project to establish a series of linked econometric models under the auspices of the ECB.

Development of the first Irish sub-model was completed in early 2000.

The model is being used for a variety of purposes. A first group of applications relates to ESCB projects; in particular the model is being used as an input to Euro area economic projections. It is also used for the examination of "scenario analyses", namely the impact on the Irish economy of changes in external circumstances. These hypothetical scenarios cover such events as interest rate increases, exchange rate changes, US economy "hard landing" scenarios and subsequent fall-offs in the levels of world trade. The model was also used during the year for generating consistent scenarios to analyse the stability of the Irish banking system by means of stress-testing.

Public Finance

Fiscal policy is of more significance in the single currency regime since higher public borrowing does not now increase interest sales and 'crowd out 'private spending and since monetary policy is no longer available for domestic stabilisation purposes. As part of economic intelligence work during the year, fiscal developments were kept under review. Research work focussed on a number of areas:

measurement and assessment of the structural budgetary position, i.e. the budgetary position adjusted for the state of the business cycle and fiscal sustainability regarding the ageing of the population.

Economic Statistics

Considerable time was devoted to the refinement and adaptation of statistical data pertaining to general economic and public finance areas in order to meet ECB demands. These data are being delivered in efficient electronic form to the ECB. Substantial effort was also devoted to the construction and interpolation of quarterly economic time-series for the Bank's econometric model. Until recently, quarterly National Accounts data have not been available for Ireland.

Other Work

The economic and research function also participated in the work of the Economic Policy Committee (EPC) of the European Union. The EPC dealt with a wide range of issues pertaining to the improved functioning of goods, labour and capital markets. It contributed to the formulation of the structural aspects of the Broad Economic Policy Guidelines of the EU and conducted the multilateral reviews of progress with structural reform in all fifteen EU Member States.

	€'000	
	2000	2001

Central Statistics Office

The Central Statistics Office is responsible for the collection, processing and dissemination of official statistics to meet the statistical requirements of Government departments, other public bodies, the EU, businesses, universities, research institutes and the general public. The statutory basis for this role is provided by the Statistics Act, 1993, which replaced the Statistics Acts 1926 and 1946 when it came into operation on 1 November 1994. It constituted the Central Statistics Office as a statutory civil service body under the authority of the Taoiseach, established the National Statistics Board on a statutory basis, updated existing statutory provisions for the compilation of official statistics and strengthened the Central Statistics Office's role in co-ordinating the statistics produced by other public bodies.

The CSO's activities are funded by a general vote of the Oireachtas. There are also contributions from the EU for special EU surveys. Net expenditure in 2000 amounted to €28.2m. The 2001 net allocation is €43.74m.

The number of staff provided for in CSO's 2000 Vote is approximately 585. This figure includes staff temporarily assigned for the Household Budget Survey, which concluded in 2000, staff assigned to the Census of Agriculture which was undertaken in 2000 and the Census of Population which was scheduled to take place in April 2001 but has now been deferred until April 2002 due to the Foot and Mouth disease outbreak.

PROGRAMME / ACTIVITY AREAS

Industrial and Building Statistics

3,091	3,781

A Census of Industrial Production is undertaken annually. Short-term trends are monitored by sample surveys into industrial production, turnover, employment, earnings and hours worked. Results are published on a monthly and quarterly basis.

A Census of Building and Construction is also undertaken annually together with short-term sample surveys of employment, earnings and hours worked in the building sector. Details of planning permissions granted are also compiled and published quarterly.

Short-term inquiries are conducted into employment and earning trends in banking, insurance and building societies and in the public sector. The results are published quarterly.

A quarterly CSO inquiry to Quantity Surveyors provides a short-term indicator of output in the non-residential sector.

This Section conducts on an alternating two-year basis the harmonised EU Structure of Earnings Survey and Labour Cost Survey covering the industrial, distribution, banking, insurance, building societies, hotel and restaurant sectors.

This Section conducts an annual survey of the products produced by the industrial sector using the harmonised EU product classification PRODCOM.

Services Statistics

4,749	5,770

Indices of both the value and volume of retail sales are compiled and published on a monthly basis for 14 retail business categories and all retail businesses combined.

	€'000	
	2000	2001

An up-to-date comprehensive register of businesses is required under EU regulation 2186/93 and also to meet national statistical needs.

Development work on an integrated Business Register has been evolving since 1992. An Annual Register Inquiry addressed to new enterprises and local units was initiated in 1993. A new Register Computer system is being developed. This system will accommodate a Central Business Register capable of meeting user needs. The register provides sampling frames for direct statistical inquiries and provides a framework for grossing sample results. It is envisaged that the Central Business Register will provide a valuable tool in the co-ordination of surveys and the minimisation of response burden on smaller business units.

An annual sample survey was initiated in 1992 for service sectors. This survey covers the Retail and Wholesale Sectors each year with other additional sectors being surveyed on a rotating three-year cycle. The main purpose of the survey is to provide data for the compilation of the National Accounts.

From 1996 onwards (reference year 1995), this survey has been modified to meet the needs of the EU Structural Business Statistics Regulation. The main additional requirements of this regulation are an expansion of the annual coverage of services sectors and the use of a harmonised classification system (NACE Rev. 1). In addition, the regulation requires pilot work to develop statistics for services sectors such as education, health and financial services.

A quarterly inquiry of industrial and services sectors commenced in 1996 in order to provide short-term economic data for the purposes of compilation of the quarterly national accounts. The quarterly inquiry also satisfies some of the requirements under the pending European Commission Regulation on short-term statistics. The variables collected include – stocks, capital assets, trade creditors / debtors, turnover, persons engaged, and wages and salaries.

Prices, Labour Market and Social Statistics

8,062	7,637

The Consumer Price Index measures change in the average level of prices paid by households for consumer goods and services. The index is compiled and published monthly since January 1997.

An extensive range of monthly and bi-annual statistics is compiled and published in respect of persons on the Live Register.

Vital statistics are compiled and published annually. These include marriage, birth and death data by region; infant mortality rates and natural increases in population. Less detailed statistics are published monthly.

The time interval between large scale National Household Budget Surveys has been reduced from seven years to five years. The most recent Survey was undertaken from mid-1999 to mid-2000. The survey is conducted over a twelve-month period to ensure that expenditure characteristics of different times of the year are captured. Results are published within two years of the survey and provide the basis for updating the weights of the Consumer Price Index.

Agricultural Statistics

3,047	3,037

Sample surveys of agricultural holdings are conducted annually in June and December from which estimates of the numbers of livestock, agricultural labour input and areas under crops are compiled. Surveys of pig and poultry producers are conducted in June and December.

	€'000	
	2000	2001
Special large-scale surveys on the structure of agricultural holdings are undertaken in June every two years. Size-of-herd analyses for cattle and pigs are prepared in December every two years. A special survey to determine the wages of permanent agricultural employees is also undertaken every third year (1997, 2000, etc.).		
In 2000, a complete Census of agriculture covering land utilisation, livestock numbers, machinery etc. was undertaken and preparatory work commenced in September 1999.		
Estimates of the quantity and value of agricultural outputs, inputs and resultant income arising are prepared and published annually. Monthly data on livestock and milk production are also issued. A large number of commodity supply / utilisation balances are prepared annually.		
Agricultural output and input price index numbers together with average absolute price series for the main commodities are published monthly. A land price series is issued quarterly.		
Annual releases on fishery and forestry statistics have recently been introduced.		
Special publications are occasionally issued, e.g. historical agricultural statistics (1847 to 1996) and a joint analysis of the 1991 Censuses of Agriculture and Population.		
National Accounts	1,671	1,995
Official estimates are compiled and published annually of Gross National Product (GNP), Gross Domestic Product (GDP) and related aggregates such as national disposable income. These are supplemented by detailed analyses of such items as: the distribution and expenditure of personal income; savings and investment; taxes; and the transactions of the public authorities.		
Demographic Statistics	6,926	20,836
A Census of Population is taken every five years. The results of each census are published on a phased basis.		
The 2001 Census of Population scheduled to take place in April 2000 was deferred for one year due to the Foot and Mouth disease outbreak. Much of the preliminary work had already been undertaken when the final decision was made to defer. The printing of forms and the interviewing and appointing of field staff was at a very advanced stage. The setting up of all the necessary technology to process such a major project had also been put in place to a large extent. This Census of Population will now take place in April 2002.		
Balance of Payments	1,110	1,289
Quarterly and annual balance of payments estimates are published in the Balance of International Payments Release.		
Trade and Statistical Policy	621	767
Statistics of imports and exports classified by commodity and by country, import and export price (unit value) and volume index numbers and related data are compiled each month and widely disseminated. The statistics are based on data collected by the Revenue Commissioners.		

	€'000	
	2000	2001

Economic and Social Research Institute

The Irish Economic and Social Research Institute (ESRI) is a not-for-profit organisation which was founded in 1960 as the Economic Research Institute. In 1966 the Institute assumed responsibility for social research and extended its title to the Economic and Social Research Institute. The ESRI is a company limited by guarantee with no share capital. It is a not for profit organisation and holds charitable status.

Current research is in the areas of demography, econometrics, education, health, housing, industrial development, labour market, macroeconomics, public finance & pensions, social capital, social disadvantage, regional studies, resource economics, survey research and tax & welfare. Institute research staff undertake commissioned studies, surveys and data analysis on behalf of a wide range of Irish and international organisations. With the aim of providing training and experience in research methods the Institute has a policy of recruiting recent graduates as research assistants on 2-year contracts.

The Institute is financed by a general grant-in-aid from the Department of Finance, fees from commissioned research, sales of publications, membership subscriptions, sponsorship from the corporate sector and through the Economic and Social Research Trust which funds specific research programmes.

The Institute employs 35 research staff. The Survey Unit and HIPE/NPRS Unit employ 14 and 13 technical, coding and data-entry staff respectively. There are 20 management and administrative staff providing support services and 9 service personnel.

Research

	4,743	5,247

During 2000 the Institute undertook research projects in demography, econometrics, education, health, housing, industrial development, labour market, macroeconomics, public finance & pensions, social capital, social disadvantage, regional studies, resource economics, survey research and tax & welfare.

Income from commissioned research was €1,908,873 in 2000 and is estimated at €1,787,639 for 2001. Income from membership fees amounted to €105,231 in 2000 and estimated at €107,928 for 2001.

Information and Technical Services

	2,021	2,360

The Survey Unit carries out surveys, including fieldwork, and processes data for research staff and outside bodies. Over twenty major surveys (ranging from 1,000 to 12,000 interviews per survey) are undertaken each year by ESRI's panel of interviewers. The Institute manages the Hospital In-Patient Enquiry Scheme and the National Perinatal Recording System on behalf of the Department of Health and Children.

The ESRI library, which is open to the public is a research library developed to support the research effort of the Institute. The library is particularly strong in the major national and international journals and periodicals covering the main research disciplines in the Institute. The Institute devotes considerable effort to publish the results of its research in books, periodicals and journals.

Fees from commissioned surveys, data collection and technical services amounted to €2,379,260 in 2000. The estimate for 2001 is €2,962,220. Sales of publications amounted to €67,103 in 2000 and estimated at €69,836 for 2001.

Office of Public Works

The Office of Public Works provides services to Government Departments and other agencies in the areas of property management, building construction, engineering construction, building maintenance and conservation and restoration of buildings.

OPW employs specialist staff in all aspects of architecture, engineering, valuation, quantity surveying and related disciplines. In-house resources are supplemented as required by contracting of services from private sector companies.

Over 90% of construction, maintenance and conservation work is contracted from the private sector.

Total staff employed at the end of 2000 was 1,341. The Office manages expenditure of approximately €637m per annum.

In the course of their work, OPW's professional staff carry out research and development of new building methodologies (including environmentally friendly techniques), hydraulic and hydrological research and development and specialist conservation and restoration techniques.

CAPITAL EXPENDITURE ON BUILDINGS CONNECTED WITH SCIENCE & TECHNOLOGY

	€'000 2000	2001
Department of Agriculture, Food and Rural Development		
Grange EU Vet Agency	213	215
Coosan Veterinary Laboratory	51	215
Tipperary Agriculture Offices	1,445	300
Relocation from Abbotstown:		
Transfer to Backweston	3,210	11,152
Re-roofing of Abbotstown House	-	762
Department of Marine and Natural Resources		
Transfer of Marine Institute to Galway	-	1,544
State Laboratory	556	-
Ordnance Survey Office	80	602
Department of Education and Science		
Dunsink Observatory	6	-

	€'000	
	2000	2001

Ordnance Survey Ireland

Ordnance Survey Ireland (OSI) is a non-statutory office of the civil service, under the responsibility of the Minister for Finance. OSI is headed by a Director who is responsible for the overall management of the organisation. It is intended that OSI be established as a statutory state agency to allow it greater autonomy in relation to the ongoing development of its commercial activities.

Ordnance Survey Ireland is the national mapping agency. Its main function is to provide the definitive topographic mapping databases of the country. It therefore creates and maintains a number of mapping datasets which underpin many of the administrative, legal, infrastructural, security and business functions of the State. OSI also provides topographic information for many organisations in the private sector. Development at OSI is geared towards the future needs of the information society.

Ordnance Survey Ireland employs 313 people of whom 275 are directly involved in technical mapping activities, with the remainder in administration and support activities.

Actual overhead costs are included under science and technology activities.

TECHNICAL SERVICES

Technical Services	14,048	20,895

The programme includes revision of rural and urban databases, and creation from aerial photography of a new rural large-scale database. Data is provided in both digital and paper form. Currently urban data is updated on an annual cycle.

€10,011,884 was received for the sale of products and services in 2000, while the figure for 2001 is expected to be €8,253,297.

233 staff were involved in this activity in 2000. However, in order to expedite completion of 1:5000 rural mapping programme a number of mapping assistants have been recruited on a contract basis for 3 years. There is now 275 staff involved in this activity.

State Laboratory

	€'000	
	2000	2001

The State Laboratory is an independent office under the aegis of the Department of Finance. It was established in 1924 following the merger of the Revenue Laboratory and the Chemical Laboratory of the Department of Agriculture, Food and Rural Development.

Its main function is the provision of an analytical and advisory service to Government Departments and offices. The bulk of its work is statutory in nature and the main areas of analytical activity are in the Revenue, Agricultural and Environmental arenas.

Its analytical results and advice are used for the purposes of: litigation and advice; the implementation and formulation of legislation; and assessing the potential requirements for future national and/or EU legislation.

The Laboratory is represented by its staff on National, European (EU) and International committees. It participates at both EU and international levels in the collaborative testing of analytical methods.

The bulk of State Laboratory funding comes directly from the exchequer. A less significant source of income is EU travel refunds.

In June 2000 the Minister for Finance sanctioned a new management structure and an enhanced staffing complement for the Laboratory. This has enabled the Laboratory to rebalance the workload of the analytical sections and to refocus its management activities.

The State Laboratory employs a total of 86 permanent staff, of whom 74 (including the State Chemist) are directly involved in science and technology activities; the remainder are in administration and support services.

TESTING AND ANALYSIS

Agriculture (Inorganic)	526	477

Fertilisers are analysed on behalf of the Department of Agriculture, Food and Rural Development to ascertain compliance with both EU and national legislation.

5 people are employed in this activity.

Environment and Heritage	-	573

The environmental area embraces most government departments and samples are analysed for compliance with the Safety Health and Welfare at Work Act, and similar national and EU legislation. Hydrocarbon oils are analysed for lead, sulphur and benzene levels. This area is also involved with the Department of Agriculture, Food and Rural Development and analyses samples seized in accordance with the Animal Remedies Act as well as cultural artefacts and building materials.

6 staff are employed in this activity.

	€'000	
	2000	2001
Animal Feedstuffs	771	573
Animal feedingstuffs are analysed for nutrients, growth promoters, antibiotics, mycotoxins and other naturally occurring toxic substances, also for minerals, trace elements and heavy metals. Veterinary medical products are assayed for compliance with various legislative prescripts.		
6 staff are employed in this activity.		
Microbiology	-	573
Microbiological techniques are employed to assay food and feed for the presence of antibiotics and to detect selected plant diseases. Bacteriological quality of water is determined.		
6 staff are employed in this activity.		
Technical Administration	-	97
This is a newly created area whose purpose is to compile a directory of government laboratory services and to advise the Laboratory on the introduction of novel analytical techniques.		
One person is employed in this activity.		
Residues / Contaminants Section	477	573
The activities of this section encompass the Department of Agriculture Food, and Rural Development Local Authorities and State-Sponsored bodies. Samples such as Food, Feed and Environmental samples are analysed for pesticide residues and contaminants.		
Examples of analysis are Fruits, Vegetables and Milk for Organophosphorus and Organochloride pesticides, water samples for a wide range of pesticide residues, milk and feed samples for Aflatoxins. Frequent requests for "one off" analyses are dealt with such as in animal poisoning cases or where environmental damage is suspected.		
6 staff are employed in this activity.		
Revenue (Alcohols and Oils)	477	573
The percentage of alcohol in wines and spirits. Techniques employed include distillation SCABA beer analyser and gas chromatography.		
Excise duties and rebates of duties are laid down in the various Finance Acts. In order to accurately determine the revenue accruing to the State and to prevent the illegal use of rebated products, it is necessary to analyse and characterise hydrocarbon oils. Techniques employed include UV, gas chromatography and HPLC.		
6 staff are employed in this activity.		

	€'000	
	2000	2001
Customs / CAP	830	668
The Common Customs Tariff (CCT) determines the duty payable on imported goods and chemical analysis enables the Revenue Commissioners to classify goods for this purpose. Samples are diverse in nature ranging from pure chemical to plastics to processed products like food. The analyst relies heavily on instrumental techniques such as chromatography and spectroscopy. Samples are also analysed in accordance with the prescripts of the Common Agricultural Policy of the EU.		
7 staff are employed in this activity.		
Toxicology – Human	771	857
Analysis is carried out on post mortem biological tissues and fluids of human origin in order to ascertain the cause of sudden or unexplained deaths.		
9 staff are employed in this area.		
Toxicology – Veterinary		381
Biological tissues of veterinary origin are assayed for a variety of reasons. The analyses in question are normally present at residue levels and confirmation techniques add to the analysis time.		
4 staff are employed in this area.		
Quality Control and Accreditation	100	97
In recognition of the importance of ensuring a high standard of quality control throughout the Laboratory, and of ensuring that the Laboratory is accredited by the Irish Laboratory Accreditation Board, a Senior Chemist has been appointed to oversee these activities throughout the Laboratory.		

Publication List

The 4th Framework Programme in Ireland	April 2001
Commercialisation of Publicly Funded Research *Irish Council for Science, Technology & Innovation (ICSTI)*	April 2001
The Third Report of the Expert Group on Future Skills Needs *Responding to Ireland's growing skill needs*	July 2001
Forfás Annual Report 2000	August 2001
Annual Employment Survey 2000	September 2001
Statement of Outward Direct Investment	October 2001
State Expenditure on Science & Technology, 2000	December 2001
Research and Development in the Public Sector, 2000	December 2001
Key Waste Management Issues in Ireland	December 2001
Annual Competitveness Report, 2001 & The Competitiveness Challenge *National Competitiveness Council*	December 2001
The Labour Market Participation of Over 55s in Ireland *Expert Group on Future Skills Needs*	January 2002
International Trade and Investment Report	February 2002
Biotechnology *Irish Council for Science, Technology & Innovation (ICSTI)*	February 2002
Enlargement of the European Union **Forfás Submission to the National Forum on Europe**	February 2002
Broadband Investment in Ireland	March 2002
Research & Development in the Business Sector 1999	May 2002
Comparative Consumer Prices in the Eurozone & Consumer Price **Inflation in the Changeover Period**	June 2002
Forfás Annual Report, 2001	July 2002
e-Business: Where we are and where do we go from here	August 2002
Measuring and Evaluating Research *Irish Council for Science, Technology & Innovation (ICSTI)*	August 2002
Legislating for Competitive Advantage in e-Business **and Information Communications Technologies**	October 2002
A Strategy for the Digital Industry Content in Ireland	November 2002
Annual Competitiveness Report 2002 and **The Competitiveness Challenge Report** *National Competitiveness Council (NCC)*	November 2002

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

Peter Cassells	*Chairman*
Martin Cronin	*Chief Executive,* *Forfás*
Sean Dorgan	*Chief Executive,* *IDA Ireland*
Dan Flinter	*Chief Executive,* *Enterprise Ireland*
Paul Haran	*Secretary General,* *Department of Enterprise, Trade & Employment*
Professor Michael Hillery	*Chair of Manufacturing Engineering* *University of Limerick*
Rody Molloy	*Director General, FÁS*
William Murphy	*Partner, Tynan Dillon and Company*
Feargal O'Rourke	*Partner, Taxation* *Pricewaterhouse Coopers*
Professor Yvonne Scannell	*Professor at Law,* *Trinity College*
Toni Wall	*Managing Director,* *Wall-2-Wall Ltd*
Jane Williams	*Managing Director,* *The Sia Group Ltd*