

12 July 2016 | 1100 hrs | 109/2016

In 2014, total expenditure on research and development amounted to €60.5 million, or 0.75 per cent of GDP.

Research and Development in Malta: 2012-2014

R&D Expenditure

During 2014, an increase in total expenditure on Research and Development (R&D) activities was registered by €1.5 million equivalent to 2.5 per cent from 2013. The Business Enterprise sector contributed 55.3 per cent to total R&D, whereas the Higher Education and Government sectors contributed 34.7 and 10.0 per cent respectively (Table 1).

The added R&D expenditure was triggered by higher outlays on recurrent expenditure of €4.7 million, mainly as a result of higher labour costs in the Business Enterprise and Higher Education sectors. On the other hand, outlays on capital expenditure decreased by €3.2 million mainly due to a decline in land and buildings in the Higher Education sector. Labour costs represented 63.2 per cent of total expenditure, whereas other recurrent expenditure and capital projects had a share of 18.9 per cent and 17.9 per cent respectively (Table 2).

In 2014, the highest rate of R&D activity was recorded in Engineering and Technology which accounted for 35.7 per cent of total expenditure, followed by Natural Sciences (24.2 per cent) and Medical Sciences (20.5 per cent). Year-on-year comparisons show that the highest increase was registered in Engineering and Technology by €4.5 million. Conversely, Medical Sciences went down by €2.0 million.

The majority of R&D activity in Engineering and Technology and Natural Sciences was undertaken in business enterprises whereas research in relation to Medical Sciences was mainly carried out by the Government Sector (Table 3).

Each sector mostly funds its own research, supplemented by foreign funds, mainly foreign business enterprise funds for the Business Enterprise sector, general university funds for the Higher Education sector and EU funds for the Government sector. Foreign funds for R&D reached €12.7 million, or 21.0 per cent of total funds (Table 4).

R&D Employment

In 2014, 2,310 employees were engaged in R&D work, of whom 1,363 dedicated part of their time to R&D. The highest R&D employment rate was registered in the Higher Education sector, at 1,181 employees, followed by the Business Enterprise sector, with 1,077 employees. Male employment was predominant among researchers and technicians (Table 5).

Compiled by:

Unit A2: Public Finance

Further information on data:

Mr Mark GALEA

T. +356 2599 7240

E. mark.b.galea@gov.mt

As regards employment by major field of science, in 2014 the highest employment activity in R&D was recorded in Engineering and Technology with 687 employees, followed by Natural Sciences and Social Sciences, with 653 and 358 employees respectively (Table 6).

GBAORD

In 2015, the highest outlays on the Government Budget Appropriations or Outlays for R&D (GBAORD) were recorded in the socio-economic activities related to Health (€6.5 million), Industrial Production and Technology (€4.9 million) and Culture, Recreation, Religion and Media (€4.2 million) (Table 7) ■

Kindly indicate source when quoting from this release.

The advance release calendar may be consulted at www.nso.gov.mt

Issued by: **Dissemination Unit, National Statistics Office, Lascaris, Valletta VLT 2000, Malta.**

T. +356 2599 7219 F. +356 2599 7205 E. nso@gov.mt

<https://twitter.com/NSOMALTA/> | <https://www.facebook.com/nsomalta/>

Table 1. Total R&D Expenditure as a % of GDP*

	€000s		
	2012	2013	2014
Government Sector (GOV)	4,748	5,630	6,042
Business Enterprise Sector (BES)	34,183	30,544	33,460
Higher Education Sector (HES)	20,807	22,883	21,037
Total R&D expenditure	59,738	59,058	60,539
% of GDP*	0.83	0.77	0.75

* Source: Gross Domestic Product as published in News Release No. 091/2016

Note: Totals may not add up due to rounding

Table 2. Total expenditure on R&D by type of costs

	€000s			
	GOV	BES	HES	Total
2012				
Recurrent Expenditure	934	29,590	15,868	46,392
Labour Costs	616	19,115	11,761	31,491
Other Recurrent Expenditure	319	10,475	4,107	14,900
Capital Expenditure	3,814	4,593	4,939	13,346
Land and Buildings	3,757	3,182	3,987	10,925
Instruments and Equipment	57	1,411	953	2,421
Total Expenditure	4,748	34,183	20,807	59,738
2013				
Recurrent Expenditure	773	27,276	16,985	45,033
Labour Costs	451	19,062	13,361	32,874
Other Recurrent Expenditure	321	8,214	3,624	12,159
Capital Expenditure	4,858	3,269	5,899	14,025
Land and Buildings	4,825	1,521	5,318	11,664
Instruments and Equipment	33	1,747	581	2,360
Total Expenditure	5,630	30,544	22,883	59,058
2014				
Recurrent Expenditure	744	30,085	18,902	49,731
Labour Costs	465	22,451	15,362	38,278
Other Recurrent Expenditure	279	7,634	3,540	11,453
Capital Expenditure	5,299	3,375	2,136	10,809
Land and Buildings	5,222	1,139	1,643	8,005
Instruments and Equipment	76	2,235	492	2,804
Total Expenditure	6,042	33,460	21,037	60,539

Note: Totals may not add up due to rounding

Table 3. Total expenditure on R&D by major field of science

		€000s							
		Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities	Not elsewhere classified	Total
Government Sector	2012	66	135	3,219	1,185	53	15	76	4,748
	2013	96	47	4,725	728	35	0	0	5,630
	2014	113	28	5,134	731	35	3	0	6,042
Business Enterprise Sector	2012	10,451	11,750	9,534	797	336	37	1,278	34,183
	2013	11,312	12,612	4,641	635	419	104	822	30,544
	2014	12,023	17,331	2,675	462	315	0	653	33,460
Higher Education Sector	2012	2,608	4,253	4,485	575	5,517	3,194	176	20,807
	2013	2,504	4,436	5,046	583	6,516	3,592	208	22,883
	2014	2,499	4,267	4,599	332	5,918	3,249	173	21,037
Total	2012	13,124	16,137	17,238	2,556	5,905	3,246	1,531	59,738
	2013	13,912	17,095	14,412	1,945	6,969	3,696	1,029	59,058
	2014	14,635	21,626	12,407	1,525	6,269	3,251	826	60,539

Table 4. Source of funds of R&D expenditure

		€000s											
		GOV			BES			HES			Total		
		2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
Sources of Funds													
Local Funds		1,180	794	873	26,689	23,595	28,531	18,900	20,894	18,424	46,769	45,283	47,828
	Business Enterprise	250	250	250	25,734	23,162	27,824	51	37	52	26,035	23,449	28,126
	Direct Government	930	544	623	807	346	637	3,544	4,575	1,073	5,281	5,465	2,333
	General University Funds	0	0	0	0	0	13	14,470	15,423	16,495	14,470	15,423	16,508
	Others	0	0	0	148	87	56	835	859	804	983	946	860
Foreign Funds		3,568	4,836	5,169	7,494	6,949	4,929	1,907	1,990	2,613	12,969	13,775	12,712
	Foreign Business Enterprises	30	30	0	6,093	5,727	3,372	0	0	0	6,123	5,757	3,372
	European Commission	3,538	4,806	5,169	1,398	1,222	1,307	1,117	1,181	1,594	6,054	7,209	8,070
	Others	0	0	0	3	0	250	790	809	1,019	793	809	1,269
Total		4,748	5,630	6,042	34,183	30,544	33,460	20,807	22,884	21,037	59,738	59,058	60,539

Table 5. Total employment in R&D by sex and occupation

	Government Sector			Business Enterprise Sector			Higher Education Sector			Total		
	2012	2013	2014	2012	2013	2014	2012	2013	2014	2012	2013	2014
Full-time	35	28	29	876	783	824	0	48	94	911	859	947
Males	30	23	25	691	617	659	0	27	44	721	667	728
Females	5	5	4	185	166	165	0	21	50	190	192	219
Part-Time*	20	20	23	316	240	253	1,075	1,112	1,087	1,411	1,372	1,363
Males	12	16	18	229	182	200	632	653	642	873	851	860
Females	8	4	5	87	58	53	443	459	445	538	521	503
Total	55	48	52	1,192	1,023	1,077	1,075	1,160	1,181	2,322	2,231	2,310
Males	42	39	43	920	799	859	632	680	686	1,594	1,518	1,588
Females	13	9	9	272	224	218	443	480	495	728	713	722
Researchers	37	26	25	649	552	473	756	806	849	1,442	1,384	1,347
Males	27	18	18	476	406	364	516	540	557	1,019	964	939
Females	10	8	7	173	146	109	240	266	292	423	420	408
Technicians	1	1	3	396	336	399	90	103	98	487	440	500
Males	1	1	1	344	303	356	72	83	80	417	387	437
Females	0	0	2	52	33	43	18	20	18	70	53	63
Support staff	17	21	24	147	135	205	229	251	234	393	407	463
Males	14	20	24	100	90	139	44	57	49	158	167	212
Females	3	1	0	47	45	66	185	194	185	235	240	251

* Spending a proportion of their working time on R&D activities

Table 6. R&D employment by major field of science

		Natural sciences	Engineering and Technology	Medical sciences	Agricultural sciences	Social sciences	Humanities	Not elsewhere classified	Total
Government Sector	2012	5	5	1	32	5	2	5	55
	2013	6	8	0	31	2	1	0	48
	2014	5	7	3	36	0	1	0	52
Business Enterprise Sector	2012	442	487	65	17	36	5	140	1,192
	2013	466	420	29	8	33	8	59	1,023
	2014	515	438	34	6	13	4	67	1,077
Higher Education Sector	2012	102	219	250	18	303	171	12	1,075
	2013	122	230	261	33	332	172	10	1,160
	2014	133	242	256	18	345	172	15	1,181
Total	2012	549	711	316	67	344	178	157	2,322
	2013	594	658	290	72	367	181	69	2,231
	2014	653	687	293	60	358	177	82	2,310

Table 7. Government Budget Appropriations or Outlays for Research and Development (GBAORD)

	€000s			
Socio-economic objective	2012	2013	2014	2015
Exploration and exploitation of the earth	26	9	0	1
Environment	1,940	2,032	1,834	2,203
Exploration and exploitation of space	0	0	0	0
Transport, telecommunication and other infrastructures	18	0	45	29
Energy	66	26	112	66
Industrial production and technology	3,945	4,072	3,686	4,946
Health	4,349	4,898	4,305	6,503
Agriculture	882	733	748	1,019
Education	3,888	2,433	2,086	2,400
Culture, recreation, religion and media	2,165	4,299	3,771	4,199
Political and social systems, structures and processes	2,676	3,011	2,580	2,950
General advancement of knowledge	4	0	0	0
Defence	0	0	0	0
TOTAL	19,960	21,513	19,167	24,316

Methodological Notes

1. Research and Development is defined as creative work undertaken on a systematic basis to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications.
2. R&D is classified in four main sectors:
 - *Government Sector (GOV)* - includes all Government Ministries and Departments, offices and other bodies which furnish, but normally do not sell to the community, those services, other than higher education, which cannot otherwise be conveniently and economically provided, as well as those that administer the state and the economic and social policy of the community.
 - *Business Enterprise Sector (BES)* - includes all firms, organisations and institutions whose primary activity is the market production of goods and services (other than higher education) for sale to the general public at economically significant prices.
 - *Higher Education Sector (HES)* - includes all universities, colleges of technology and other institutions of post-secondary education, whatever their source of finance or legal status.
 - *Private Non-Profit Sector (PNP)* - includes non-market, private non-profit institutions serving households and private individuals or households. This sector is not captured as it is considered to be negligible.
3. For the Government and Higher Education sectors, an annual questionnaire is compiled and sent to all the Central Government Ministries and Departments, Extra Budgetary Units, as well as Local Councils.
4. For the Business Enterprise sector, an annual questionnaire is sent to all known active R&D enterprises.
5. The data contained in this news release have been drawn up in line with the Frascati Manual (2002 edition). The definitions of the fields of science and technology and their sub-fields are available online: [http://nso.gov.mt/en/nso/Sources_and_Methods/Unit_A2/Public_Finance/Pages/Research-and-Development-in-Malta-\(Government-Sector\).aspx](http://nso.gov.mt/en/nso/Sources_and_Methods/Unit_A2/Public_Finance/Pages/Research-and-Development-in-Malta-(Government-Sector).aspx)
6. All data in this release should be considered as provisional and therefore subject to revision.
7. More information relating to this news release may be accessed at:

Statistical Concepts: <http://nso.gov.mt/metadata/concepts.aspx>

Metadata: <http://nso.gov.mt/metadata/reports.aspx?id=3> (GOV and HES)

<http://nso.gov.mt/metadata/reports.aspx?id=26> (BES)

European statistics comparable to data in this News Release are available at:

[EUROSTAT Website/Homepage/Statistics Database](http://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&code=sdg_8_10)

Data Navigation Tree

>Database by themes

>Science and technology

>Research and development

>Tables by themes

>Science and technology

>Research and development

For further assistance send a request from:

<http://nso.gov.mt/en/Services/Pages/Request-for-Information.aspx>