Work Package 2 - Deliverable 2.3

Funding Gaps for INCO- Net

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1.0 Introduction

This report presents the research capability in the Pacific and funding sources identified in Task 1.3, 1.4 and 2.1. The report also takes into account the discussions held at the Suva meeting. The report identifies gaps in funding and analyses opportunities for further investment. It also identifies key focal areas for INCO-Net.

These R&D sectors have been defined by the European Commission (EC).

Agriculture and food supply: veterinary and animal sciences; agriculture; food production and food security; agricultural biotechnology and resources of the land and sea

Biology and medicine: medicine; health, including public health and sanitation; biotechnology; life sciences; healthcare delivery/services; medical biotechnology

Energy: nuclear fission; nuclear fusion; fossil fuels; renewable sources of energy; energy storage; energy transport; energy saving; biofuels; hydrogen and fuel cells; other energy topics; clean coal technologies

Environment and climate: meteorology; environmental protection; radiation protection; waste management; radioactive waste; sustainable development; earth sciences; climate change and carbon cycle research; water resource management; biodiversity; disaster management, sanitation

Industry and industrial technology: industrial manufacturing; materials technology; nanotechnology and nanoscience; industrial biotechnology; mineral and metal mining; sea bed resources

Information and communication technology: electronics and microelectronics; information processing, information systems; telecommunications; automation; robotics; ICT application; network technologies

Social and economic concerns: social aspects; education and training; information and media; economic aspects; regional development; employment issues; safety; security; governance; private sector; poverty alleviation; gender equality; culture

Transport and construction: construction technology; transport; aerospace technology; space and satellite research; other technology not included elsewhere

For more details on type of information covered by the themes please consult the following website: http://cordis.europa.eu/themes/home_en.html

2.0 Research Projects in the Pacific

The table below was extracted from Work Package 1- Survey Study: Mapping of Organisations and Partners involved in Science and Technology Research Activities in the Pacific Island region, their Mandates, Science Focal Areas and Research Projects. The table lists the number of projects on each thematic area. These projects are funded by all kinds of funding agencies in the Pacific.

Table 1: The above table shows the number of projects per region as well as the total number of projects.

Projects in Research and Development	ACP	OCT	Regional	Australia & New Zealand	Total
Agriculture and food supply	49	7	15	3	**74**
Biology and medicine	59	54	2	4	**119**
Energy	18	1	0	3	**22**
Environment and climate	77	108	17	5	**207**
Industry and Industrial technology	27	8	0	2	**37**
Information and communication technology	13	0	0	4	**17**
Social and economic concerns	13	12	1	9	**35**
Transport and construction	1	0	0	0	**1**
Total Others: mathematics/physics	12	0	0	0	**12**
Total					***524***

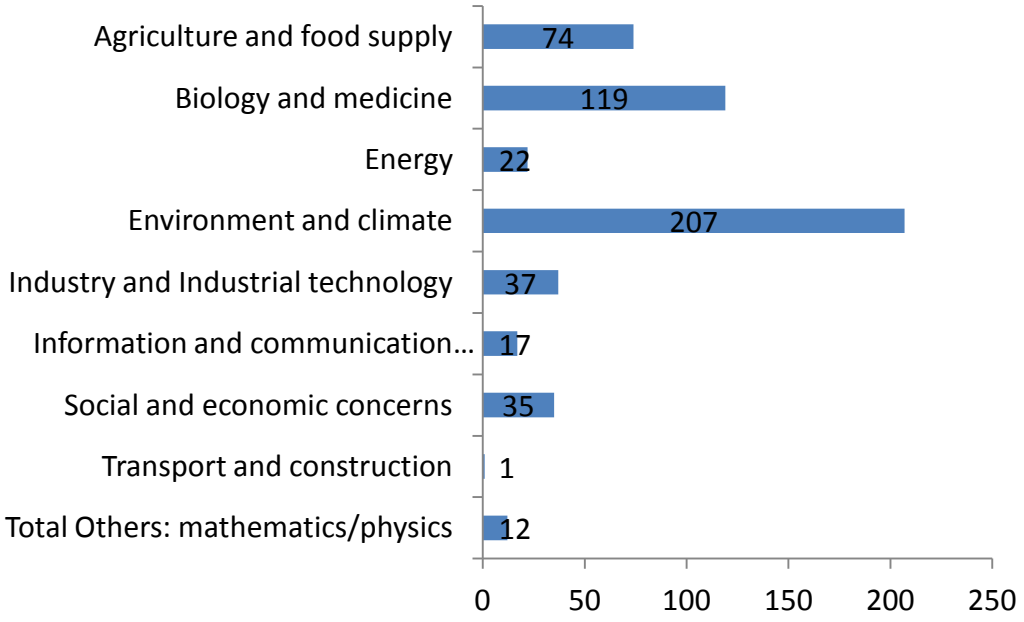

Fig 1: The graph above shows the number of research projects by R&D sector.

A total of 524 projects were registered for the Pacific. According to the overall scores collected, the majority of the research projects are undertaken in the research and development sector of environment including climate change (29%), followed closely by biology and medicine (22%) and agriculture and food supply (18%).

Some small yet significant Research and Development sector in which research projects seems to be undertaken in the Pacific ACP include energy (22%) and information and communication technology (17%) and industry and industrial technology (10%).

Also from WP 1 the number of projects funded by EU in Pacific ACP is 3, OCT is 7, Regional Organisations is 6 and only one in Australia and New Zealand.

3.0 European Development programmes in Science and Technology in the Pacific

The EU Development Programmes under each theme are listed below. There are a total of 25 EU Development Programmes taken from D 1.4 - EU Development Programmes including Science and Technology in the Pacific.

Table 2: EU development Programmes in Pacific

Themes	EU Projects
Agriculture and food supply	✓ Pacific Regional Indicative Programme ✓ INCO Net ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Environment and Sustainable management of Natural Resources Including Energy – ENRTP ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU ✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ National Adaption Strategy ✓ ACP Science and Technology Programme
Biology and medicine	✓ Pacific Regional Indicative Programme ✓ INCO Net ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU ✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ ACP Science and Technology Programme

Energy	✓ Pacific Regional Indicative Programme ✓ TEP VERTES Programme ✓ INCO Net ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Environment and Sustainable management of Natural Resources Including Energy – ENRTP ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU ✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ ACP Science and Technology Programme
Environment and climate	✓ Pacific Regional Indicative Programme ✓ Networking Tropical and Subtropical Biodiversity Research in Other Most Regions and Territories of Europe in Support of Sustainable Development NET-BIOME ✓ Global Climate Change Alliance – GCCA ✓ INCO Net ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Prevention and management of Natural Hazards ✓ Environment and Sustainable management of Natural Resources Including Energy – ENRTP ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU ✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ ACP EU Cooperation in Higher Education – Edulink ✓ Support the GCCA through Capacity Building, Community Engagement and Applied Research ✓ ACP Science and Technology Programme
Industry and industrial technology	✓ Pacific Regional Indicative Programme ✓ Rehabilitation and Re-Vegetation of Mining Sites ✓ PRIDE ✓ INCO Net ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Environment and Sustainable management of Natural Resources Including Energy – ENRTP ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU

	✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ ACP Science and Technology Programme
Information and communication technology	✓ Pacific Regional Indicative Programme ✓ INCO Net ✓ EU Asia Pacific Cooperation – EURASIAPAC ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU ✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ ACP Science and Technology Programme
Social and economic concerns	✓ Pacific Regional Indicative Programme ✓ PRIDE ✓ INCO Net ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU ✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ EU Support Programme to Cultural industries in ACP ✓ ACP Science and Technology Programme
Transport and construction	✓ Pacific Regional Indicative Programme ✓ Environment and Sustainable management of Natural Resources Including Energy - ENRTP ✓ INCO Net ✓ Forum of European-Australia Science and Technology Cooperation – FEAST ✓ Facilitating Research Cooperation between Europe and New Zealand – FRENZ ✓ Supporting EU Access to Australian Research Programmes – ACCESS4EU ✓ Supporting EU Access to New Zealand Research Programmes – ACCESS4EU ✓ ACP Science and Technology Programme

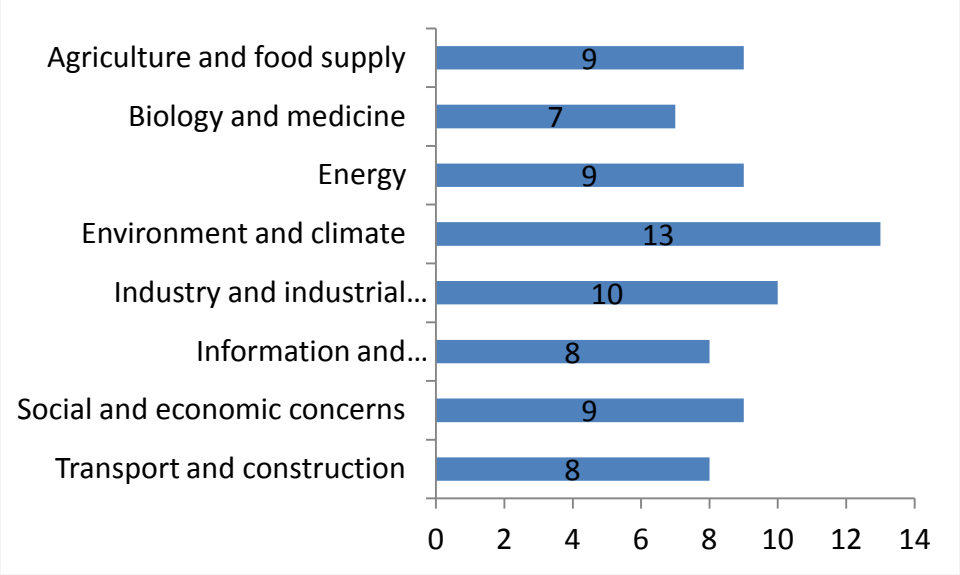

Fig 2: The graph above shows the number of EU Development Programmes by R&D sector.

The figures indicate that a significant number of EU development programmes focuses only on the issue of Environment/ Climate. However, more than 50% of the programmes have focus on all of Science and Technology themes.

Research and Development themes of the EU development Programmes is quite balanced. All the Research and Development themes are between 37%-68%. Biology and Medicine has the lowest percentage which is 37%.

4.0 Existing Science and Development Goals in the Pacific

The tables shows the development goals in Pacific by theme: (D2.1 Linkages between Science and Technology and Development Goals of the Pacific Island region and Lessons Learned)

Table 3: Pacific Development Agenda

Themes	Development Agenda
Agriculture and food supply	✓ Action Strategy for Nature Conservation in the Pacific Islands Region ✓ Alofi Communiqué ✓ Cairns Communiqué ✓ Cotonou Agreement ✓ Madang Communiqué and Kalibobo Roadmap ✓ Madang Declaration ✓ Millennium Development Goals ✓ Nadi Communiqué ✓ Niue Declaration ✓ Pacific Islands Framework for Action on Climate Change ✓ Pacific Islands Regional Ocean Policy ✓ Pacific Plan ✓ PICT National Development Plans ✓ Port Villa Communiqué

	✓ The Mauritius Strategy ✓ Vava'u Declaration
Biology and medicine	✓ Alofi Communiqué ✓ Cairns Communiqué ✓ Cotonou Agreement ✓ Madang Communiqué and Kalibobo Roadmap ✓ Madang Declaration ✓ Nadi Communiqué ✓ Niue Declaration ✓ Okinawa Partnership ✓ Pacific Islands Framework for Action on Climate Change ✓ Pacific Plan ✓ PICT National Development Plans ✓ Port Villa Communiqué ✓ The Mauritius Strategy ✓ Vava'u Communiqué ✓ Yanuca Island Declaration
Energy	✓ Alofi Communiqué ✓ Cairns Communiqué ✓ Nadi Communiqué ✓ Niue Declaration ✓ Pacific Islands Energy Policy and Plan ✓ Pacific Plan ✓ PICT National Development Plans ✓ Port Villa Communiqué ✓ The Mauritius Strategy ✓ Vava'u Communiqué
Environment and climate	✓ Alofi Communiqué ✓ Ambo Declaration ✓ Cairns Communiqué ✓ Cotonou Agreement ✓ Madang Communiqué and Kalibobo Roadmap ✓ Madang Declaration ✓ Millennium Development Goals ✓ Nadi Communiqué ✓ Niue Declaration ✓ Okinawa Partnership ✓ Pacific Islands Energy Policy and Plan ✓ Pacific Islands Framework for Action on Climate Change ✓ Pacific Islands Regional Ocean Policy ✓ Pacific Plan ✓ PICT National Development Plans ✓ Port Villa Communiqué ✓ The Mauritius Strategy ✓ Vava'u Communiqué ✓ Vava'u Declaration
Industry and industrial technology	✓ Cairns Communiqué ✓ Madang Communiqué and Kalibobo Roadmap ✓ Nadi Communiqué ✓ PICT National Development Plans ✓ The Mauritius Strategy

	✓ Vava'u Communiqué
Information and communication technology	✓ Alofi Communiqué ✓ Cairns Communiqué ✓ Madang Communiqué and Kalibobo Roadmap ✓ Nadi Communiqué ✓ Niue Declaration ✓ Pacific Plan ✓ Pacific Regional Strategy for Information Communication Technology ✓ PICT National Development Plans ✓ Port Villa Communiqué ✓ The Mauritius Strategy ✓ Vava'u Communiqué ✓ Vava'u Declaration
Social and economic concerns	✓ Action Strategy for Nature Conservation in the Pacific Islands Region ✓ Alofi Communiqué ✓ Cairns Communiqué ✓ Cotonou Agreement ✓ Madang Communiqué and Kalibobo Roadmap ✓ Madang Declaration ✓ Millennium Development Goals ✓ Nadi Communiqué ✓ Okinawa Partnership ✓ Pacific Islands Energy Policy and Plan ✓ Pacific Plan ✓ Pacific Regional Digital Strategy for Disability ✓ PICT National Development Plans ✓ Port Moresby Declaration ✓ Port Villa Communiqué ✓ The Mauritius Strategy ✓ Vava'u Communiqué ✓ Vava'u Declaration
Transport and construction	✓ Alofi Communiqué ✓ Cairns Communiqué ✓ Madang Communiqué and Kalibobo Roadmap ✓ Nadi Communiqué ✓ Pacific Islands Energy Policy and Plan ✓ Pacific Plan ✓ PICT National Development Plans ✓ Port Villa Communiqué ✓ The Mauritius Strategy ✓ Vava'u Communiqué

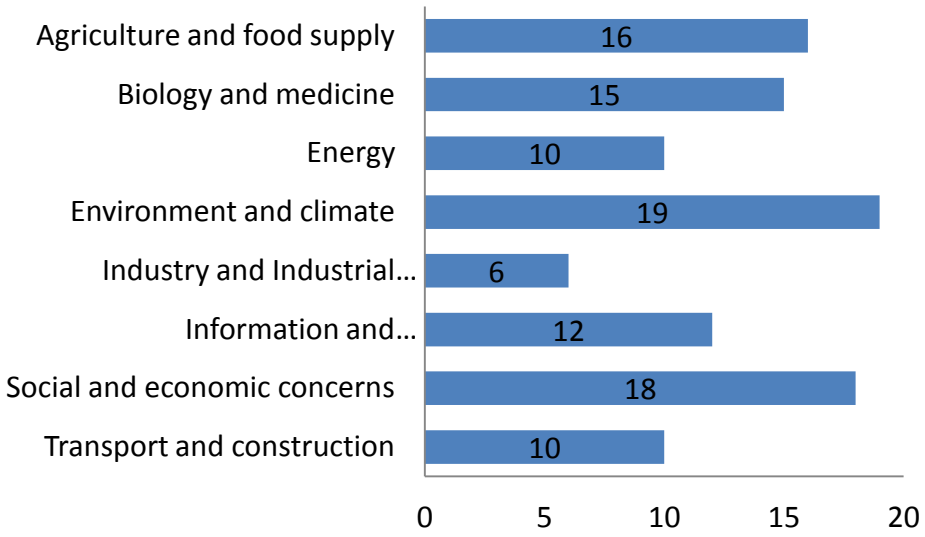

Fig 3. Number of Science and Technology Development Goals in the Pacific.

Most of the development goals are on Environment and Climate (76%) followed by Social and Economic concerns (72%). Biology and Medicine and Agriculture and Food Supply are between 60 to 64%. Industry and Industrial technology has the least percentage (24%)

5.0 Science and Technology Focal Areas discussed at the Suva Meeting

From D2.2, the important themes discussed at the Suva meeting were:

- Health and Environment,
- Renewable Energy,
- ICT and
- Sustainability (Environment and Climate).

6.0 Gaps in Funding and Opportunities for Further Funding

Table 4: Percentage of Research Projects, EU Development Programmes and Pacific Agenda

Theme	Research Projects	EU Development Programmes	Pacific Agenda
Agriculture and food supply	14%	47%	64%
Biology and medicine	23%	37%	60%
Energy	4%	47%	40%
Environment and climate	40%	68%	76%
Industry and Industrial technology	7%	52%	24%
Information and communication technology	3%	42%	48%
Social and economic concerns	7%	47%	72%
Transport and construction	0%	42%	40%

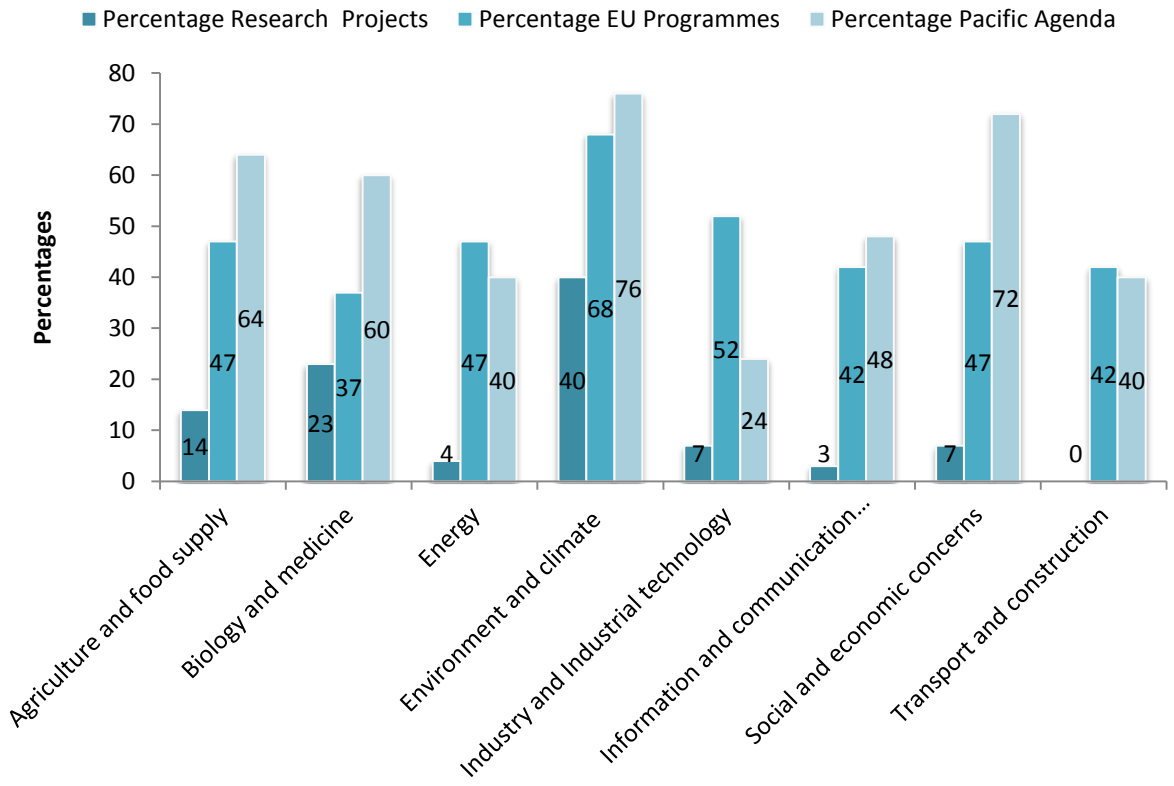

Fig 4. Percentage of Research projects, EU Programmes and Pacific Agenda Goals as per each Science and Technology theme

Agriculture and Food Supply: Since agriculture is the primary source of revenue for many Pacific countries, the sector features in many development agendas. The data shows that 64% of the development agendas/plans include this theme; however, only 14% of the

research projects have been carried out. Forty-seven percent of EU Development Programmes include Agriculture and Food Supply.

Biology and Medicine: Similar to Agriculture, the percentage of development goals in Biology and Medicine is higher than EU development programmes. Most research projects (23%) are conducted on these topics. Health was highlighted at the Suva meeting as a major focal area.

Energy: The data shows that there is more mention of energy in EU development programmes than in the Pacific agendas/plans. The number of research projects in this area is very low. Energy was discussed at the Suva meeting as an important area for research.

Environment and Climate: Despite being in most (68%) of the EU Development Programmes, Environment and Climate does not meet the development goals. Relative to goals, the percentage of research projects on this theme is also quite high (40%). Environment and Climate were also chosen as a focal area at the Suva meeting.

Industry and Industrial technology: The data shows that EU programmes give this area a much greater priority than does the Pacific. There are few research projects in this area.

Information and Communication Technologies (ICT): The percentage of ICT-related development goals in the Pacific is much higher than in the EU development programmes. However there remain very few research projects in the area of ICT. ICT is a focal research area identified at the Suva meeting.

Social and Economic Concerns: There was nothing discussed at the Suva meeting relating to social and economic concerns. However, a number of Pacific plans and agendas treated this theme as significant. Seventy-two percent of Pacific development plans/ agendas include social and economic concerns, while only 47% of the EU development programmes fund these activities. It is also disappointing to note that, despite of 42&% funding, only 7% of the research projects are carried out in this area.

Transport and Construction: The data shows that there are no research projects on this theme, despite the fact that Transport and Construction appear in 40% of development plans/ agendas and in 42% of EU development programmes.

7.0 Conclusion

The data of this report is based on Deliverables 1.3, 1.4, 2.1 and 2.2. However, Work Package 1 shows that the survey response rate was only 29.13% therefore the percentages on projects may not be correct. The percentages are calculated for number of projects, EU development programmes and Pacific agenda and are mapped in one graph (see figure 4) and from this figure EU development programmes are then compared with projects and Pacific Agenda to find gaps. Very less projects in pacific is funded by EU, the data from WP1 shows EU funded project in Pacific ACP is 3, OCT is 7, Regional Organisation is 6 and only one in Australia and New Zealand. The table 5 shows the amount of money in euros, funded by all kinds of funding agencies in Pacific, gleaned from the survey that was spent on each research and development theme for 2008, 2009 and 2010. For this table, the response rate was 20.3%.

Table 5: Amount of Euros spent in Each Research and Development Sector

R&D sectors	Year	Total per year in Euro
Agriculture and food supply	2008	37439
	2009	36488
	2010	252238
Biology and medicine:	2008	814000
	2009	581520
	2010	37240
Energy	2008	
	2009	5400
	2010	
Environment and climate	2008	1933943
	2009	2740381
	2010	855377
Industry and industrial technology	2008	444000
	2009	1428083
	2010	
Information and communication technology	2008	223875
	2009	162800
	2010	44981
Social and economic concerns	2008	461340
	2009	586846
	2010	423937
Transport and construction	2008	1332000
	2009	1036000
	2010	2981
Other (*specify*): Mathematics	2008	678053
	2009	1026204

	2010	829000
Total Budget for S&T research per year	2008	114379387
	2009	114225457
	2010	3067081

Themes which need more EU development Programmes (Funding) are:

- Agriculture and Food Supply
- Biology and Medicine
- Environment and Climate
- Information and Communication Technology (ICT)
- Social and Economic Concerns

Themes which need more research projects are:

- Agriculture and Food Supply
- Biology and Medicine:
- Energy:
- Environment and Climate:
- Industry and Industrial technology:
- Information and Communication Technology (ICT)
- Social and Economic Concerns:
- Transport and Construction: