Science, economy and society
Highlights 2010

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Science in Society
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Preface

Throughout 2010 the European Union continued to address in a collective manner the financial crisis and economic recession in the context of the challenges outlined in the Europe 2020 Strategy. As part of this it took significant steps towards a more integrated approach to its funding of Research and Innovation and the implementation of the European Research Area (ERA). The European Commission thus adopted the Innovation Union flagship to restore the capacity of Europe to innovate in all economic and social domains.

In this context, the Socio-Economic Sciences and Humanities (SSH) theme of the 7th Framework Programme for Research has become an important tool for the European Commission for the analysis of the challenges Europe is facing and the development of appropriate policy responses. 2010 saw in particular the first evaluation of a new generation of larger SSH projects on issues like ‘the role of the financial systems’ or ‘creating and adapting jobs in Europe in the context of a socio-ecological transition’ but also on other issues which will no doubt deserve more and more scrutiny in the next few years, for instance ‘democracy and the shadows of totalitarianism and populism’.

Of course, as the Innovation Union flagship clearly states, the future of Europe will be linked to its capacity to integrate science into society in even better ways than in the past. This is also the task of the European Commission through the Science in Society (SiS) theme with, inter alia, major efforts at developing the ‘Fifth Freedom’ (i.e. the free movement of knowledge) in practice through open access to scientific publications.

This report describes the current organisation of Socio-economic Sciences and Humanities, Science in Society and related research and reviews that happened during 2010 on these fronts. It specifically looks at the concept of social innovation, the role of our research in fighting poverty, the citizen at the heart of Europe, the European Union’s role on the global stage, governance and ethics in research and innovation, public engagement in science, open access to research papers, women in science and technology and modernising science education. It is intended to be of interest to colleagues in various European institutions, to policymakers at the national and sub-national level as well as all citizens interested in understanding how the Europe works and could or should be doing better in demanding times.
The key mission of the Socio-economic Sciences and Humanities (SSH) and Science in Society (SiS) programmes is to develop and implement measures to support the societal dimension of the European Research Area (ERA). The outline below provides an overview of some of the SSH and SiS programmes’ main achievements in 2010.

For the SSH programme, the year 2010 was significant for two reasons. Firstly, it marked the midpoint of the Seventh Framework Programme (FP7) that runs from 2007 to 2013. Secondly, it was the first year in which the ‘new approach’ was implemented. The new approach is characterised by a greater focus on large research projects addressing major societal challenges. Projects should also provide foresight analysis where relevant and communicate their results to key stakeholders.

Researchers responded well to the change, as the 2010 call for proposals attracted around 470 applications. The new approach also has the support of other Directorates-general of the European Commission, which are keen to make greater use of research results from the SSH programme.

There are many examples of how SSH research contributes to policymaking. Figures based on applications of modelling and data analysis from our projects were used to quantify the impacts of the research budget in 2010 and in the European Commission’s Innovation Union communication, which forms part of the Europe 2020 strategy.

Two large conferences, one on innovation and one on inequalities, gave FP7-funded projects the opportunity to present policy-relevant findings to scientists, policymakers and representatives of civil society.

The Spanish Presidency of the Council of the EU placed a strong emphasis on the social dimension of the ERA, and social issues feature heavily in the call for proposals published in July 2010. Social innovation alone is the subject of five new projects, one of which will address the challenge of creating new jobs in the social and environmental sectors. This area is emerging as an important dimension of EU innovation policy, as underlined in the Innovation Union communication and by Commission President José Manuel Barroso during the preparation of the wider Europe 2020 strategy.

Another highlight of 2010 was the final conference of the ENACT (‘Enacting European citizenship’) project, which included a special session on the situation of the Roma. ENACT focused on how citizenship is understood and exercised in practice, and the Lisbon Treaty’s emphasis on citizenship makes the project’s findings all the more relevant.

Concerning the EU’s role on the global stage, a major conference was held in April 2010 under the auspices of the GARNET (‘Global governance, regionalisation and regulation: the role of the EU’) project. The conference was opened by Commission President Barroso and touched on a number of key issues for the future of the EU’s external relations.

The conference ‘Mapping the future of the EU-US strategic partnership: policy and research perspectives’ underlined the importance of the EU-US relationship and the challenges the two parties share in areas such as the economic crisis, climate change, human rights issues or political transformations in the Middle East.
There have also been promising developments in our cooperation with China, India and Latin America. The World Expo 2010 in Shanghai, China had the theme ‘Better city, better life’, and so provided an excellent opportunity to promote SSH research into sustainable development in cities worldwide.

Forward-looking activity and foresight work are also prominent in the SSH programme due to their role in the creation of the ERA. Foresight is key to the definition of grand societal challenges and the identification of needs and gaps in terms of research, technology and innovation. As well as contributing to planning for the ERA, foresight work can be used in other societal or geopolitical discussions and initiatives such as EuroMed 2030 and Global Europe 2030-2050.

Throughout the year, the new SCOOP (‘Socio-economic and humanities research for policies’) project provided a ‘news alert’ service which picks up the latest findings from SSH research and puts them into a policy context.

The aim of the SiS programme is to promote the integration of science and technology and related policies into European society. By facilitating dialogue between the scientific community, industry, citizens and policymakers, the SiS programme helps to align research policy with the needs of society and seeks to anticipate future research needs. A number of activities in 2010 highlight the diverse ways in which the SiS programme is helping to integrate science in society.

Linking up science and society means getting the public actively involved in science. But what does the public think about science? In 2010, a special Eurobarometer survey revealed that the overwhelming majority (80%) of Europeans describe themselves as interested in science and technology, and most recognise the benefits of and opportunities generated by research. Nevertheless, only 11% consider themselves to be well informed about science and technology, and over half want scientists to make a greater effort to communicate with the public.

The issues of ethics and research governance lie at the heart of the SiS programme. Here a highlight in 2010 was the production of the European textbook on ethics in research, which has the potential to boost the ethics education of researchers, students and ethics committee members in Europe and beyond. The book focuses on research involving humans. Through case studies drawn from different disciplines and suggested discussion points, the textbook and its accompanying syllabus demonstrate the kinds of situations in which ethical issues can arise.

The free movement of knowledge is now widely regarded as the ‘fifth freedom’ of the EU, and it is essential that it be realised if Europe is to achieve its goal of becoming a smart, sustainable and inclusive economy, as set out in the Europe 2020 strategy. However, most research published in journals can only be accessed in return for a payment. The SiS programme therefore actively promotes the uptake of Open Access (OA), under which research is made freely available online. The year 2010 saw the launch of the OPENAIRE (‘Open access infrastructure for research in Europe’) initiative, which creates a network of OA repositories providing free access to knowledge generated by researchers funded under FP7.

Less than a third of the EU’s researchers are women, and tackling the gender imbalance in research represents another top priority for both the SiS programme and the EU as a whole. This is evidenced by the inclusion of the issue in the European Commission’s wider strategy for equality between the genders. The document underlines the fact that the lack of women in science hampers efforts to boost innovation and competitiveness in the EU. The SiS unit is responsible for following up a number of action points set out in the strategy.

Arousing youngsters’ interest in science and encouraging them to embark on research careers is essential if the EU is to become a truly smart economy. With this in mind, the SiS funds numerous initiatives to improve science education in Europe. Helping these diverse projects to communicate with each other and share ideas and experiences is the SCIENTIX initiative, which was launched in 2010 and aims to create a community for science education in Europe. Designed for teachers, researchers, policymakers, parents and others, SCIENTIX is a one-stop-shop for science education, providing access to teaching materials, research results and policy documents, among other things.

The 2020 Vision for the ERA, adopted in 2008, emphasises that the ERA should be ‘firmly rooted in society and responsive to its needs and ambitions’. Looking to the future, activities under the SiS programme will ensure that this vision is realised.
Social innovation – tapping into community creativity
By drawing on people’s creativity and encouraging them to take action, social innovation can help society tackle some of its biggest challenges. The EU is actively fostering research into social innovation with a view to enhancing its impact across Europe. Social innovation also features prominently in the European Commission’s Innovation Union flagship initiative, part of the Europe 2020 strategy.

Social innovation – a beginner’s guide

The term social innovation refers to innovations that are social in both their ends and their means. Specifically, social innovations can be defined as new ideas (products, services or models) that simultaneously meet social needs and create new social relationships. As such, social innovations are not only good for society; they also enhance society’s capacity to act.

A 2010 report entitled Empowering people, driving change: Social innovation in the European Union(1) explains why social innovation is so important for the EU and gives concrete examples of different kinds of social innovation. The Socio-economic Sciences and Humanities (SSH) unit contributed significantly to the report, which was put together by the European Commission’s Bureau of European Policy Advisors (BEPA) at the request of European Commission President José Manuel Barroso.

The report points out that many of the challenges facing Europe and the world today, such as unemployment, ageing and climate change, are largely social in nature. At the same time, the financial crisis has placed government budgets under severe strain. By tapping into people’s creativity and empowering them to act, social innovation is likely to become increasingly important over the next few years.

‘In this context of limited resources, social innovation offers a way forward providing new solutions to pressing social demands while making a better use of available resources,’ the report explains.

Furthermore, many issues that can be addressed by social innovation are international in nature, so it makes sense for the EU to coordinate social innovation activities and promote the exchange of ideas and best practice.

The authors identify three different categories of social innovation. Grassroots social innovations generally respond to pressing social demands, often involving vulnerable groups, not addressed by the market. An example here is the Portuguese ‘Geração’ (generation) project, which is working to cut truancy and school drop out in a deprived suburb of the capital city of Lisbon. Children who attend school regularly are entitled to participate in martial arts classes and in a youth orchestra. The project also provides daycare for young children, allowing parents to work full time. The project has touched the lives of over 1 000 people in just 3 years.

The second category of social innovation projects includes schemes that address broader social challenges and where the boundary between social and economic issues is blurred. The authors offer ‘timebanking’ as an example of this kind of project. In timebanking schemes, people ‘deposit’ time credits in a bank by helping someone else in some way. When individuals need help themselves, they can ‘withdraw’ time credits. Everybody’s time is valued equally in these schemes.

Finally, the third category of social innovation projects seeks to motivate broad swaths of society to make fundamental changes to people’s attitudes or behaviour. The EcoMap Amsterdam website allows residents of the Dutch city to see how their local neighbourhood’s greenhouse gas emissions compare to other areas, and to track the city’s progress towards achieving its environmental goals.
Crucially, the site offers users tips on how they can cut their household emissions.

**Social innovation at the heart of EU policymaking**

Launched in 2010, the Europe 2020 strategy sets out the EU’s plans to turn Europe into a smart, sustainable and inclusive economy and also recognises the importance of social innovation to this process. Social innovation features strongly in the European Commission’s communication on the Innovation Union, which is one of the seven flagship initiatives launched under the Europe 2020 banner.

Describing social innovation as ‘an important new field which should be nurtured’, the communication notes: ‘While there is no shortage of good ideas, social innovations are not yet producing the impact that they should. There must be more support for experimentation. Approaches that have clear advantages over current practice then need to be scaled up and disseminated.’

In the communication, the European Commission pledges to launch a European Social Innovation pilot project. Funded under the Competitiveness and Innovation Framework Programme (CIP), this would network social innovation activities, policies and programmes working at all levels throughout Europe. In addition, the European Commission will promote social innovation projects through the European Social Fund (ESF), and social innovation will become a core priority in the next generation of ESF programmes.

The European Commission also announced that it will support substantial research activities on the public sector and social innovation, focusing primarily on issues concerning measurement and evaluation, financing, and other barriers to scaling up and development. Measuring innovation in the public sector has proven difficult, as issues such as market share and financial rewards, which are widely used as drivers for innovation in the business sector, are less relevant in the public sector. At the same time, the public sector has a strong motivation to promote social innovation as a tool to help it address social issues, either through its own services or in partnership with other stakeholders.

As a first step, the European Commission is setting up a pilot version of a European Public Sector Innovation Scoreboard (EPSIS) to carry out an initial benchmarking study of innovation in the public sector. The results are expected to be released in 2011. A more comprehensive version of EPSIS will be developed in 2012 and if successful, an annual scoreboard on public sector innovation across the EU Member States could be set up.

**EU-funded social innovation projects**

Through the SSH Programme of the Seventh Framework Programme (FP7), the EU already funds a number of projects on social innovation. Between them, these projects are adding considerably to our knowledge of social innovation in areas as diverse as inequality and social exclusion, social innovation in the public sector, service innovation and social entrepreneurship, corporate social responsibility (CSR), societal models and governance dynamics, labour markets and social protection, education and life-long learning and territorial innovation.

For example, the SERVPPIN (‘The contribution of public and private services to European growth and welfare, and the role of public-private innovation networks [PPINs]’ project (2) is shedding new light on how PPINs work and how their performance can be improved.

Meanwhile the SELUSI (‘Social entrepreneurs as ‘lead users’ for service innovation’) project (3) is studying emerging social ventures and investigating ways of linking up emerging social entrepreneurs with established corporations in open innovation projects.

Another key project funded under the SSH programme is GUSTO (‘Meeting the challenges of economic uncertainty and sustainability through employment, industrial relations, social and environmental policies in European countries’) (4). At the heart of the project is the challenge of coping with economic uncertainty while seeking security in a globalising economy.

Homeless young people are the focus of the CSYHP (‘Combating social exclusion among young homeless populations’) project (5), which is studying how to combat social exclusion among homeless young people with different ethnic backgrounds and migrant statuses. In CSYHP, young homeless people are actively involved in the research, interviewing their peers and participating in project workshops.

**New social innovation projects**

Social innovation featured in a number of topics included in the 2010 SSH calls for proposals. Four proposals with special emphasis on social innovation were selected for funding and contract negotiations with the project consortia were completed in autumn 2010.
Social innovation – tapping into community creativity

Local welfare systems form the focus of two of the new projects. The WILCO (‘Welfare innovations at the local level in favour of social cohesion’) project (8) will probe the effect of local welfare systems on social inequalities, while FLOWS (‘Impact of local welfare systems on female labour force participation and social cohesion’) aims to study the cultural, economic, political and social conditions for female employment in different European countries.

Elsewhere, the COCOPS (‘Coordinating for cohesion in the public sector of the future’) project (9) is assessing the impacts of new public management style reforms across Europe. Finally, the NEUJOBS (‘Employment 2025: how will multiple transitions affect the European labour market’) project is analysing the implications of major socio-ecological transitions (e.g. developments in climate change, energy and culture) on the labour market in 2025.

The 2011 SSH work programme features two topics on social innovation. Projects funded under the first (6), entitled ‘New innovation processes including social innovation’, should enhance our understanding of both social innovation and social entrepreneurship.

The second topic (7) focuses on the creation of a social platform on innovative social services; projects supported through this topic would be expected to propose a research agenda focusing on the areas of health, welfare and education services.

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The rise of the social platform

A recent trend in SSH is the development of ‘social platforms’, structures which are expected to be involved in promoting social innovation in Europe. Social platforms aim to establish a Europe-wide dialogue between the scientific community, policymakers and civil society groups with a view to agreeing on a common research agenda.

Social innovation in cities

October 2010 saw the SSH team join up with colleagues from the European Commission’s Directorate-General for Regional Policy to organise a workshop entitled Challenges to Social Cohesion in Cities and Social Innovation Responses. Held during the ‘Open Days’ European Week of Regions and Cities (12), the event attracted over 100 participants. Speakers examined the challenges to social cohesion in cities from an integrated perspective and discussed how both social cohesion policies and socially innovative strategies can be effective in the fight against social exclusion. The event also included presentations of the findings of EU-funded projects in this area.

Outlook for 2011

The FP7 SSH research agenda will continue to address social innovation-related themes, including the impacts of large-scale migration, the future of European social policies, social innovation as a tool to combat inequalities, and gender in innovation policies.

Two social platforms have already been set up under the EU’s SSH Programme. Social Polis (10) focuses on cities and social cohesion, and provides a forum for debates on the economy, society, culture and ethics across the city. Meanwhile FamilyPlatform (11) aims to enhance families’ well-being by encouraging dialogue between different groups on family issues. A third social platform on sustainable lifestyles was launched in January 2011. Called SPREAD, it aims to create scenarios and patterns of behaviour for sustainable living, moving and consuming up to 2050.

Find out more

The Innovation Union flagship initiative
http://ec.europa.eu/research/innovation-union/index_en.cfm

Footnotes

(2) See http://www.servppin.com/ online.
(3) See http://www.selusi.eu/ online.
(4) See http://www.gusto-project.eu/ online.
(5) See http://www.movisie.nl/homelessyouth online.
(6) SSH.2011.1.3-1.
(7) SSH.2011.1.2-2.
(8) See http://www.wilcoproject.eu/ online.
(9) See http://www.cocops.eu online.
(10) See http://www.socialpolis.eu/ online.
SSH research – a tool in the fight against poverty
Across the EU, millions of people, many of them children, live at risk of poverty and social exclusion. Lifting people out of poverty is a top priority for the EU, which included it as a headline goal in the Europe 2020 strategy. Research has a key role to play in tackling poverty and social exclusion. Throughout 2010, activities undertaken under the Socio-economic Sciences and Humanities (SSH) programme highlighted how research can enhance our understanding of the causes of poverty and, crucially, contribute to efforts to combat it.

**Frightening figures**

Across the EU, over 80 million people (1), many of them children, live below the poverty line (i.e. their household’s disposable income is less than 60% of their national average). These people, who represent some 17% of the total EU population, may struggle to pay their bills, heat their homes or run a car. Things most of us take for granted, like holidays, colour televisions and washing machines, are simply unaffordable, and many live in fear of sudden, unforeseen expenses that could wipe out their meagre budgets at a stroke. Furthermore, poverty impairs people’s ability to play a full and active role in society.

Research shows that over the past three decades, socio-economic inequalities have continued to intensify despite economic growth during the same period. This is not just a problem for the poor; studies have consistently demonstrated that more egalitarian societies tend to enjoy higher levels of economic growth, while less equal societies are characterised by higher crime rates as well as increased levels of ill health and drug abuse.

**EU action**

The good news is that the EU is taking significant steps to tackle this scourge. Firstly, the EU and its Member States declared 2010 the European Year for Combating Poverty and Social Exclusion. Throughout the year, events were held all over Europe to raise awareness of these important issues and inspire people to take action.

Secondly, through the Europe 2020 strategy, the EU set out its plans to transform Europe into a smart, sustainable and inclusive economy. Under the ‘inclusive growth’ banner, the EU set itself the goal of cutting the number of people at risk of poverty or social exclusion by 20 million by 2020.

The European Platform against Poverty and Social Exclusion flagship initiative, published in December 2010, sets out the actions needed at all levels to achieve this ambitious target. The initiative identifies key areas where action is needed, namely preventing the transmission of poverty down the generations and tackling child poverty; using employment as a route out of poverty; and boosting efforts to integrate minority groups into the wider society and economy.

**A role for research**

The SSH programme was heavily involved in a number of activities relating to the European Year, thereby underlining the importance of research in efforts to tackle poverty and social exclusion.

One of the highlights of the year was the ‘Science Against Poverty’ (2) conference, which was held in the Spanish city of Segovia in April 2010 and was organised by the Spanish Presidency of the Council of the EU with the support of the SSH unit.

‘The contribution of all sciences is necessary to eradicate poverty,’ the conference conclusions state. ‘Research and innovation can contribute to answer poverty issues related to climate change and access to renewable energies; health; nutrition and agriculture; water and sanitation; bridging the knowledge and technological gap; and education and training in Europe and abroad.’

The conference outcomes fed into the Council Conclusions on the Social Dimensions of the European Research Area [ERA] (3), which were adopted by EU research ministers in May 2010. In the document, ministers acknowledge ‘the importance of the social dimension of the European Research Area given
the capacity of research and innovation to provide concrete responses to the demands of society.’

According to the ministers, the social dimension of the European Research Area should encompass efforts to:

- identify the most effective ways in which research can contribute to meeting social challenges;
- improve access to scientific knowledge to maximise its impacts on society;
- take research and innovation into account when designing aid policies;
- ensure that the ERA’s objectives contribute to societal objectives.

The overarching goal of this conference was to present an overview of the contribution of SSH research to the analysis of current challenges. As well as discussing trends in inequalities across Europe, attendees analysed why inequalities should constitute a key element in European politics and policies. In addition, the event demonstrated the relevance of research for policies in Europe and provided participants with an opportunity to debate which policies have the greatest potential to curb inequalities.

‘At this stage we need more thought, we need to see what works and what does not work, we can deepen our analysis of social, cultural and economic behaviours,’ said Jean-Michel Baer, Director of the Science, Economy and Society Directorate at the European Commission’s Research Directorate-General, opening the conference. ‘In other words, at the research level, we have to try harder to develop the inclusive growth agenda of Europe 2020. And that is what we shall do!’

Education – paving the way out of poverty

As part of the European Year for Combating Poverty and Social Exclusion, the SSH unit organised a media briefing in April 2010 in Barcelona, Spain, on EU-funded research focusing on education as a tool to address social exclusion. One of the projects highlighted was INCLUD-ED ('Strategies for inclusion and social cohesion in Europe from education'), which analysed both educational strategies that promote social cohesion and strategies that foster social exclusion.

Attendees visited the Mare de Déu de Montserrat primary school, which lies in a disadvantaged neighbourhood of Barcelona and has successfully implemented the strategies identified by the INCLUD-ED project. Today, the school is living proof that educational performance is not linked to the ethnic make-up of the class but rather to the implementation of best practice and evidence-based methods.

The outcomes of EU-funded projects also took centre stage at a conference called ‘New and Growing Inequalities: A Challenge for the Social, Economic and Democratic Development of the European Union’ which was held in Brussels, Belgium in November 2010. The event represents part of the SSH programme’s contribution to the EU’s wider ‘inclusive growth’ agenda under the Europe 2020 strategy.

‘The European Union needs to put policies against socio-economic inequalities at the heart of its action, for the benefit of all citizens’
Meanwhile the findings from ongoing projects will form the basis of a policy review on youth and social inclusion, which will be released at a high-level conference in the second half of 2011.

Outlook for 2011

The European Year for Combating Poverty and Social Exclusion may be over, but the EU’s commitment to funding research into these topics remains undimmed. The SSH programme’s work programme (13) for 2011 includes four inclusion-related topics.

One topic (14) calls for the creation of a social platform on innovative social services to generate research agendas for evaluating different approaches to the provision of services such as health, education and care. Another topic (15) calls for a small or medium-sized project on new innovation processes including social innovation. Here the European Commission is interested in projects that would come up with better ways of measuring social innovation, among other things.

The third inclusion-related topic (16), which is fully open to civil society participants, is entitled ‘Combating poverty in Europe: a key question of human dignity and social cohesion’. This project, which should also address youth and gender issues, could assess the potential and limits of different approaches to tackling poverty and the role of public services, for example.

Finally, the European Commission is looking to fund a large project on ‘Tackling poverty in a development context’ (17). As the title suggests, this project would take on diverse issues including the effectiveness of developing countries’ institutions, the international aid system, environmental problems in developing countries, migration from rural to urban areas, and issues of democracy, rights and power.
The citizen at the heart of the EU
Another important development in EU policies is represented by the adoption of the Stockholm Programme, which sets out the EU's priorities in the area of freedom, security and justice for the period 2010-2014. The Stockholm Programme places a strong emphasis on ensuring that EU citizens are able to take full advantage of their rights. The steps needed to achieve the goals of the Stockholm Programme are set out in an action plan published by the European Commission in 2010 (6).

**SSH research into EU citizenship**

Over the past two decades, the concept of EU citizenship has evolved steadily and is now enshrined in EU law. However, if EU citizenship is to meet its full potential as a cornerstone of a multicultural and democratic EU, research is needed to understand its evolution and multiple dimensions. Accordingly, EU-funded SSH projects cover diverse aspects of citizenship. Key questions are:

- What are the main features of the European public space and how do different means and patterns of citizen participation contribute to shaping it?
- How is EU citizenship exercised in practice by people living in the EU, regardless of their nationality and state of residence, and how does this affect the way identities are constructed and perceived in today’s multicultural society?
- How do citizens experience in their daily lives the fundamental rights and freedoms that are central to the EU's core values (such as the respect of the rule of law, the fights against racism and xenophobia, the right to non-discrimination and equal treatment, religious freedom and respect for diversity including multilingualism)?
- What are the implications of a gendered approach to citizenship?

Today, EU citizens enjoy a growing number of rights and freedoms. Turning rights into a reality requires research, however, and that is where the SSH programme comes in. EU-funded projects in this important area are exploring the meaning of EU citizenship and how Europeans use it in practice. Research also focuses on the impact on Europeans’ daily lives of the EU’s fundamental rights and freedoms, such as the right to non-discrimination and respect for diversity.

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**1 EU - 500 million citizens**

The concept of EU citizenship dates back to 1992, when the Maastricht Treaty automatically conferred EU citizenship on all nationals of EU Member States (1). EU citizenship does not replace national citizenship, but grants EU citizens with a number of additional rights, such as the right to live and work in other Member States.

The 2009 Lisbon Treaty (2) strengthened the notion of EU citizenship, for example through the introduction of the European Citizens’ Initiative (ECI) (3). This allows EU citizens to petition the European Commission to propose legislation. Under the legislation setting out the implementing rules of the ECI, a committee made up of seven or more EU citizens living in at least seven Member States have one year to get a million signatures (on paper or electronically) from citizens in at least a quarter of the Member States. The European Commission then has three months to investigate the matter and decide what action, if any, should be taken.

Elsewhere, the Charter of Fundamental Rights of the EU (4) enshrines a number of citizen’s rights, such as the right to vote and stand in EU and local elections if you live in another Member State. The Lisbon Treaty made the Charter of Fundamental Rights legally binding.

Furthermore, citizenship is now explicitly mentioned in the portfolio of European Commission Vice-President Viviane Reding, whose remit also includes justice and fundamental rights (5).
European citizenship and identity in practice

One project that has put the reality of European citizenship under the microscope is ENACT (‘Enacting European citizenship’) (7), which ended in 2010. The project’s results were presented at a conference held in Brussels, Belgium, in April.

The project reveals the gulf between the legal definition of European citizenship and the way it is claimed and exercised in practice. The researchers offer the example of Turkish citizens who are neither citizens nor residents of an EU Member State yet practice European citizenship by claiming rights such as protection for minorities or women’s rights and through campaigns targeting Turkish as well as European officials or publics. The project team suggests that policymakers could build on this willingness of Turks to act as European citizens in the accession process.

The team also highlights the case of third country nationals living in the EU who participate fully in the EU’s social, economic and cultural life. At the same time, constraints on the mobility of Roma who are also EU citizens raise challenges for the implementation of EU citizenship and a European common space of liberty, security and justice.

‘ENACT research shows how varied acts of citizenship - by both central institutions and marginal groups and individuals - challenge the reach and content of existing policy understandings and assumptions,’ concludes a Policy Brief by the ENACT partners.

One EU-funded project is investigating issues of identity and debate through the lens of the festival (8). The EUROFESTIVAL (‘Art festivals and the European public culture’) team is studying how film, literature, music and urban mixed-arts festivals act as sites for cultural expression with relevance for the creation of European identities and the European public sphere. Specifically, the project is exploring how festivals use the arts to symbolise, represent and communicate social and political life at the European and other levels. The researchers are also interested in how festivals represent sites of competition for access to resources and status. The results of this project are presented in the ‘European Arts Festivals – Strengthening cultural diversity’ report (9).

Another important aspect of identity is language, and that’s where LINEE (‘Languages in a network of European excellence’) comes in. The project, which drew to a close in 2010, presented its main findings at a conference in Brussels in September (10).

On language learning, the researchers note that many teachers fail to appreciate their pupils’ linguistic resources, yet learning languages is easier if students are encouraged to make connections between the languages they already know.

As for the role of English, LINEE revealed that far from being a threat to linguistic diversity, English can actually help people access multilingual environments where they also have the opportunity to start learning other languages from their peers.

Finally, LINEE found that language policies in Europe still largely neglect both immigrant languages and non-standard languages and dialects, even though these are key to integration, social life and the economy.

Throughout history, warring groups have destroyed their enemies’ cultural heritage in an effort to inflict pain on them. The EU-funded CRIC (‘Cultural heritage and the re-construction of identities after conflict’) project (11) is researching the conditions and ideologies that inspire groups to destroy cultural heritage in a bid to elucidate the relationships between cultural heritage, conflict and identity. In addition, the team is assessing the consequences at local, national and regional levels of both the destruction and subsequent reconstruction of cultural parts of people’s heritage.

CRIC is focusing its efforts on cases of cultural heritage destruction during a civil war, during conflict between countries, and in the context of World Wars. The CRIC team hopes to shed new light on diverse themes, namely memorialisation and commemorative events; the social importance of monuments and symbols; the role of the media in transmitting events, memories and meanings; and the effect of time as both a distancing and transformative factor.

The influence of the media on citizenship

Europe’s Arabic speakers can watch over 300 Arabic-language satellite TV channels. The MEDIA&CITIZENSHIP (‘Transnational television cultures reshaping political identities in the European Union’) project (12) is probing the influence of Arabic-language television channels on Arabic speakers in six European cities. The project has found that study subjects rely on both Arabic and local channels for both news and entertainment. The MEDIA&CITIZENSHIP project will come to an end in 2011.

Also studying the media is MEDIADEM (‘European media policies revisited: valuing and reclaiming free
Participation in political life

Taking an active part in political life is part and parcel of citizenship, but some people are more politically engaged than others. The PIDOP (‘Processes influencing democratic ownership and participation’) project (14) is analysing the processes influencing democratic ownership and participation in eight European countries. The project is focusing its efforts on young people, women, minorities and migrants, as these groups are at particular risk of political disengagement.

EUROPOLIS (‘EuroPolis: a deliberative polity-making project’) (15), which ended in 2010, dramatically demonstrated the power of deliberative democracy. The theory of deliberative democracy states that citizens can change their attitudes if provided with balanced information and the opportunity to discuss key issues with experts and politicians. In a massive experiment carried out during the European elections of 2009, the EUROPOLIS team showed that after reviewing information and participating in debates, voters tended to become more tolerant, more European and greener in their views.

Citizenship and gender

Exploring women’s experience of citizenship is the FEMCIT (‘Gendered citizenship in multicultural Europe: the impact of contemporary women’s movements’) (16) project. FEMCIT moves from the assumption that fair, full and gendered citizenship must encompass six dimensions. Three of these dimensions - political, social and economic citizenship - are well recognised, although women do not benefit fully from these. Two further dimensions, the bodily and intimate, are not yet on the political agenda, while a final dimension (ethnic/religious/multicultural) is only just emerging. By exploring the role of women’s claims in achieving a wider gender fairness, FEMCIT addresses the fundamental question of how to advance public understanding and engage policymaking in the task of developing a fuller citizenship for women - a gender-fair citizenship for all.

One project that has tackled the interaction between discrimination on the grounds of both gender and race is GENDERACE (‘The use of racial anti-discrimination laws: gender and citizenship in a multicultural context’) (17), which finished in 2010.

The GENDERACE research reveals the difficulties faced by people who deal with discrimination on multiple levels. The researchers call for improved data collection procedures in anti-discrimination cases to pick up cases of discrimination on several grounds. In addition, efforts should be made to develop a legal definition of multiple discrimination to ensure that claims are handled better. The project team recommends advancing gender equality through positive action and gender mainstreaming, with a particular focus on ethnic minorities.

Footnotes

(2) See http://europa.eu/lisbon_treaty/index_en.htm online.
(3) See http://ec.europa.eu/dgs/secretariat_general/citizens_initiative/online.
(8) See http://www.euro-festival.org online.
(10) See http://linee.info/linee/events/research-brief.html online.
(11) See http://www.cric.arch.cam.ac.uk/index.php online.
(12) See http://www.media-citizenship.eu online.
(13) See http://www.mediadem.eliamep.gr/online.
(14) See http://www.fahs.surrey.ac.uk/pidop/online.
(15) See http://europolis-project.eu/online.
(16) See http://www.femcit.org/online.
(17) See http://genderace.ulb.ac.be/online.
The EU’s role on the global stage
Both the world and the EU's role in it are changing. EU-funded research reveals how the EU manages its relations with other regions and countries, both bilaterally and multilaterally. Closer to home, studies investigate how the EU handles peace, security and human rights issues in neighbouring countries, and assess how conflicts affect the EU through the arrival of diasporas.

Recent decades have seen the EU and its relations with the rest of the world change dramatically. The Cold War has ended and the EU has expanded to take in many countries in central and eastern Europe. In addition, the EU has forged productive relationships with its neighbours in the Balkans, around the Mediterranean and in the Middle East and northern Africa.

It is also increasingly visible in international forums such as the United Nations (UN), the World Trade Organization (WTO) and at meetings of the Group of Eight (G8) and Group of Twenty (G20). This is hardly surprising when one considers that many policy areas covered by the EU, including the environment, energy, competition, agriculture, fisheries, transport, the fight against terrorism and dealing with global pandemics, are international in nature. This is also in line with the EU’s commitment to multilateralism.

More recently, the Lisbon Treaty, which came into force in 2009, sought to boost Europe’s presence on the global stage(1). By creating the role of High Representative of the Union for Foreign Affairs and Security Policy, the treaty offers an answer to the question famously posed by US politician Henry Kissinger: ‘Who do I call if I want to call Europe?’ The current incumbent, Catherine Ashton, is aided in her job by the newly created European External Action Service (EEAS)(2). In addition to her role as High Representative, Catherine Ashton is a Vice-President of the European Commission; this helps her ensure that the EU’s external policies are coherent and consistent.

Finally, the Lisbon Treaty creates one single legal personality for the EU, thereby strengthening its negotiating power, making it more effective on the world stage and rendering it more visible as a partner for other countries and international organisations.

Outside Europe, the world is evolving rapidly. New powers such as Brazil, China and India are increasingly making their mark on the international scene. Poverty remains an issue in many parts of the world, and here the EU provides extensive assistance in the form of development aid.

**Research into the EU's role in the world**

The way Europe manages its relations with the rest of the world provides the subject of countless research studies. There are several key questions in this area.

- What makes multilateralism effective, and what hampers it?
- How does the EU see its relations with other major partners such as the US?
- How is the EU viewed from abroad?
- How does the EU deal with peace, security and human rights concerns in its neighbourhood?

**Making sense of multilateralism**

Studying the EU’s aspirations as a global actor in the security sphere is the EU-funded project EU-GRASP (‘Changing multilateralism: The EU as a global-regional actor in security and peace’) (3). EU-GRASP focuses on six...
security issues that are high on the EU’s agenda: regional conflict, terrorism, weapons of mass destruction, energy security and climate change, human rights and migration. The team is working on case studies involving these issues with a view to elucidating when and how the EU uses multilateralism as a tool in security issues, and how the EU works with different partners.

The MERCURY (‘Multilateralism and the EU in the contemporary global order’) project (4) has delivered some interesting insights into the EU’s contribution to multilateralism in the 21st century. The EU’s approach to multilateralism varies depending on the policy area and the institutional context. For example, on trade, the EU presents a coherent face to the world through the WTO. In contrast, the European Commission is a founding member of the Council of the Baltic Sea States (CBSS), yet efforts to pursue a well-coordinated multilateral policy have been hampered by the fact that while countries in the region are eager to promote EU multilateralism, they also have their own interests. Finally, MERCURY has found that the EU’s multilateral efforts may be most effective when it uses its market power, and this could be exploited more in non-market areas such as climate change and security.

The EU’s role in international arenas formed the subject of a major conference held in Brussels, Belgium in April 2010 under the auspices of the EU-funded GARNET (‘Global governance, regionalisation and regulation: the role of the EU’) project and with an opening address by European Commission President José Manuel Barroso (5). Topics covered ranged from financial markets, and climate change and development, to crisis management, trade and human rights.

The EU and its neighbours

The EU’s ties with its neighbours form the focus of the EU4SEAS (‘The EU and sub-regional multilateralism in Europe’s sea basins: neighbourhood, enlargement and multilateral cooperation’) project (6). EU4SEAS is exploring how the EU uses multilateralism at sub-regional level to manage its relations in four maritime basins (the Baltic, Black, Caspian and Mediterranean Seas). The team is studying the successes and failures of multilateralism in each basin, with a view to identifying practices that can be transferred from one region to another. The researchers are also investigating the impacts of EU membership and EU policies on multilateral cooperation around the seas.

Some regions bordering the Mediterranean are the scene of war and conflict. A workshop and round table held in Brussels in March 2010 addressed the gender dimensions of the Israeli-Palestinian conflict (7). The event brought together researchers and Members of the European Parliament (MEPs) as well as representatives of political and civil society groups from Israel and Palestine. Participants discussed the gender aspects of conflict-related issues such as developing resilience in a context of violence, dealing with justice, breaking the vicious cycle of conflict and integrating the interests of future generations.

Two’s company – the EU’s bilateral relationships

The EU’s relationship with the US formed the subject of a conference held in January 2010 entitled ‘Mapping the future of the EU-US strategic partnership: policy and research perspectives’ (8). The conference was jointly organised by the Directorates-General for Research and Innovation, and External Relations, and involved scholars, diplomats (including US Ambassador William Kennard) and MEPs. The US remains a key partner for the EU on many levels; as the Conference Proceedings (9) note: ‘Both sides of the Atlantic benefit from deep economic relations and they share fundamental values as well.’ Challenges that both Europe and the US seek to address include the economic crisis, climate change, human rights issues and conflict in the Middle East. ‘These are all areas where progress has been mixed and cooperation uneven,’ the Proceedings read. ‘Nevertheless, there is a real opportunity to build upon what has been achieved and to assert joint leadership at the global level.’

The conference found that if they are to cooperate effectively, both the US and Europe need to focus less on their shared obligations to NATO (the North Atlantic Treaty Organization) and more on relations between the US Administration and the EU as a whole. This change in mindset is already starting to happen, but further progress will require solid policy research.

As for the benefits of improved cooperation, the Proceedings state: ‘Both Europe and the United States have a lot to teach one another about how to best pursue their separate and common interests in the wider world. They also have the chance to define a strategic partnership with clear operational objectives and complementary roles.’

How does the rest of the world view the EU?

Building a strong, healthy relationship with China is essential for the EU; in recent years, China has grown to become one of the biggest economies in the world and it is also Europe’s biggest trade partner after the US. However,
China and the EU do not always see eye to eye, as China’s human rights record and dealings with Tibet have often led to tensions in the EU-Sino relationship.

Enter the CHINESEVIEWSOFEU (‘Disaggregating Chinese perceptions of the EU and the implications for the EU’s China policy’) project, which is probing how major segments of Chinese society (including the general public, government officials, intellectuals, the business community, the media and activists) view the EU(10).

In addition, the project is studying certain issues that are key to good EU-Sino relations in spheres as diverse as politics, economics, energy, the environment, culture and education. The project findings should provide the EU with the knowledge it needs to forge a stronger, more effective relationship with China.

How potential migrants view the EU is the subject of the EUMAGINE (‘Imagining Europe from the outside. On the role of democracy and human rights perceptions in constructing migration aspirations and decision towards Europe’) project(15). Specifically, the project is studying how people’s perception of democracy and human rights — both at home and elsewhere — affect their attitudes towards migration. The project, which is focusing on migration-related views of people in Morocco, Senegal, Turkey and Ukraine, is also evaluating how Europe compares to other potential migration destinations.

Putting together a non-Eurocentric vision of the world and the EU’s place in it is the EUROBROADMAP (‘European Union & the world seen from abroad’) project(12). The project’s aim is to assess how people worldwide see the EU and how the EU fits into people’s views of the wider world.

Among other things, the project team is looking at how different groups of people both within and outside Europe divide up the world and where they think Europe’s borders lie. In addition, the project is investigating migrants’ views of Europe — do they see Europe as a single entity or rather as a set of countries, and does this view change during the migration process?

### Conflict and diasporas

Wars and conflicts often drive large numbers of people to seek refuge in other parts of the world. The resulting diaspora communities continue to maintain strong links with their homeland, for example by engaging in ‘long-distance politics’, sending money and supporting social development. Two projects studying these transnational communities held a joint final conference in December 2010 in Brussels(13).

The INFOCON (‘International civil society forum on conflicts’) project shed new light on how groups representing transnational communities can help prevent and resolve conflicts in Europe and abroad. INFOCOM focused on communities from Turkey, Kosovo and Africa’s Great Lakes region based in four major European cities: Amsterdam (the Netherlands), Berlin (Germany), Brussels (Belgium) and London (UK).

For its part, DIASPEACE (‘Patterns, trends and potential of long-distance diaspora involvement in conflict settings’) (14) delivered evidence-based, policy-relevant information regarding how diasporas play into dynamics of peace and conflict in their places of origin. DIASPEACE focused on the Horn of Africa, where decades of conflict have forced millions of people to leave their homes and brought about the collapse of states.

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**Footnotes**


(4) See [http://www.mercury-fp7.net](http://www.mercury-fp7.net) online.


(12) See [http://www.eurobroadmap.eu](http://www.eurobroadmap.eu) online.

(13) See [http://www.infocon-project.org/output(brussels-conference](http://www.infocon-project.org/output(brussels-conference) online.

Governance and ethics in research and innovation
Researchers and innovators applying for EU funding must address all ethical issues raised in their project, and proposals that touch on sensitive subjects must undergo an in-depth Ethics Review. The Science in Society (SiS) team delivers publications and training courses to guide researchers, reviewers and Commission staff through this process. On the governance front, EU-funded projects are demonstrating how civil society groups can play an active role in research and innovation projects.

Ethics in research: guidance for researchers

During the Ethics Review, experts from diverse disciplines (including ethics, as well as law, philosophy, medicine, chemistry, sociology and information technology) provide an opinion about the ethical soundness of a project proposal. They assess whether a project applicant has identified all ethical issues and addressed them adequately.

In 2010, the updated Ethics Review process entered its second year of operation; following the latest changes in its design, all proposals involving human embryonic stem cells, non-human primates and interventions on humans are automatically sent for an Ethics Review at the EU level. A screening exercise covering the entire Seventh Framework Programme (FP7) identifies all other projects that require an Ethics Review either at the European Commission or Member State levels. In addition, proposals that must abide by other EU legislation (such as the Clinical Trials or Data Protection Directives) are also checked from an ethical viewpoint by the relevant authorities.

During 2010, steps were taken to coordinate the Ethics Review procedure with other European Commission services responsible for managing projects in sensitive areas, and to streamline the legal and governance contexts within which research takes place. These efforts led to discussions on data protection and privacy in research within the Article 29 Data Protection Working Party, and talks with the European Data Protection Supervisor. The SiS unit has also been working closely with the Directorate-General for Trade (on dual use issues), and with the Directorate-General for the Environment (on the recent revision of the Animal Welfare Directive). Meanwhile, the SiS unit also published a reflection paper called Lessons learned in Ethics Review.

As part of their efforts to assist researchers, the SiS unit produced guidance notes(1) on the ethical aspects of research in the social sciences and humanities (SSH) and in food research. Past Ethics Reviews have shown that there is a lack of awareness as to how SSH project proposals should deal with ethical issues. The new guidance note provides applicants and evaluators with practical advice on how to handle such issues, and examines the main points that need to be considered in order to submit a complete, accurate and robust grant application.

Food research also has numerous ethical implications, as many studies involve animal studies and/or interviews with people, including children. The guidance note sets out the main ethical issues in food research and offers researcher-friendly guidance for applicants, reviewers and European Commission staff.

Looking to the future, guidance notes on the ethics of human tissue research and ethnographic and anthropological research, as well as a discussion paper on ethics and innovation, will be produced in 2011.

Introducing the Ethics Follow-up

In 2010, the Ethics team prepared the methodology for the planned Ethics Follow-up and Audit procedure, paving the way for the organisation of the first ever transnational Ethics Follow-up. In 2011, around 10% of projects that had undergone an Ethics Review will go through an Ethics Follow-up and Audit.
**Ethics education and training**

The Ethics team already runs standard training courses for project officers and reviewers. However, 2010 saw the first in-depth training course on integrating ethics into research proposals. The structure of the course was based on work done in two EU-funded research projects, ETICA (‘Ethical issues of emerging ICT [information and communication technology] applications’) and EGAIS (‘The ethical governance of emerging technologies’). Designed for all European Commission staff handling applications for research funding, the half-day course aimed to improve participants’ understanding of ethical issues and trained them to apply this understanding consistently in their jobs. Subjects covered included informed consent, interventions on animals, and research involving developing countries.

Another important product in 2010 was the *European textbook on ethics in research*. Designed for use in training science students, researchers and ethics committee members, the book covers the ethics of research involving humans. Case studies drawn from disciplines like the biomedical and life sciences, new technologies and the social sciences demonstrate the range of research settings in which ethical issues can arise, and provide a starting point for discussions of key ethical issues. An accompanying *Syllabus on ethics in research* can be used in conjunction with the textbook or independently.

**International dialogue and capacity building in ethics**

Via the SiS programme, the European Commission supports networking and capacity-building activities between ethics committees across Europe and beyond, with the overall aim of consolidating and further strengthening the infrastructure for ethics review of (research in) science and technology. Examples of such activities are the EUREC (European Network of Research Ethics Councils) and the NEC Forum (Forum of National Ethics Councils). EUREC aims to stimulate networking between local research ethics committees and develops training courses for the members of these committees. In 2010 it received a grant from the European Commission to further strengthen the network by establishing a secretariat and statutes.

The NEC Forum is an independent, informal platform for the exchange of information and best practices on issues of common interest in the field of ethics and science. In 2010, the 15th NEC Forum meeting was held in March in Madrid under the auspices of the Spanish Presidency of the Council of the EU, and the 16th forum took place in Brussels in October under the auspices of the Belgian Presidency. In addition, in July the European Commission hosted the first ever global dialogue on the governance and ethics of synthetic biology at the Global Summit of National Bioethics Advisory Bodies in Singapore.

**Ethics in ICTs and security technologies**

Many emerging technologies in fields such as information technology, security, biometrics and biomedical technology involve the storage and processing of reams of personal data. However, it is often unclear whether citizens know what data is stored, where and how long it will be kept. Furthermore, there are questions over people’s rights to access and change their data. The legal aspects of these issues are often unclear as data protection legislation struggles to adapt to the emergence of new technologies.

A November workshop entitled ‘Governance and ethics of emerging ICT and security technologies’ sought to tackle the privacy issues raised by emerging technologies in the ICT and security fields. At the event, EU-funded projects working on these issues presented some of their findings, while a round table session provided scope for further discussions.

**Ethics and nanotechnology**

Nanotechnology is a fast-moving discipline, and public debate on the pros and cons of this novel technology is still in the early stages. A publication released in 2010 builds on the findings of four EU-funded SiS projects to discuss the nature of public debate on nanosciences and nanotechnologies, and the ways in which the governance of these technologies could be improved.

**Research governance: involving civil society organisations in research and innovation**

One important way of bridging the gap between science and society is to get society actively involved in research. Civil society organisations (CSOs) are able to act as mediators between researchers and the general public. Furthermore, they often have an intimate knowledge of societal needs and can generate interesting and useful research questions. However, few CSOs currently engage in research, and projects that involve CSOs from the agenda-setting stage are rare.

Two EU-funded projects seeking to forge stronger links between CSOs and researchers are FAAN (‘Facilitating alternative agro-food networks: stakeholder perspectives on
research needs’) and CREPE (‘Co-operative research on environmental problems in Europe’).

FAAN (10) sought to encourage CSOs and researchers to work together in setting agendas and carrying out research in the area of alternative agro-food networks, i.e. systems working outside the agro-industry such as farmers’ markets, community gardens and food box schemes.

By bringing CSOs and researchers together in this way, FAAN was able to generate new knowledge on local food systems across Europe. For example, the project confirmed that local food systems deliver numerous social, environmental and economic benefits as they often promote environmentally-friendly farming practices and the production of high-quality fresh food, foster local economic and community engagement, and establish links between urban and rural areas.

Among other things, the project underlined the importance of increasing funding for projects initiated by local communities. The work also highlighted the importance of recognising local food systems in policy areas as diverse as health, environment, rural development and agriculture.

Meanwhile CREPE (11) set out to provide CSOs with the knowledge, skills and resources they need to embark on cooperative research projects on agri-environmental issues. Ultimately, the project delivered a greater understanding of what works and what doesn’t when it comes to cooperative research involving researchers and CSOs.

Footnotes

(1) Both guidance notes, as well as the Lessons learned in Ethics Review document will be made available online at http://cordis.europa.eu/fp7/ethics_en.html#ethics_sd in Summer 2011.
(2) See http://moriarty.tech.dmu.ac.uk:8080/ online.
(3) See http://www.egais-project.eu/ online.
(5) See http://www.eurecnet.org/ online.
(10) See http://www.faanweb.eu/ online.
(11) See http://crepeweb.net/ online.
From monologue to dialogue –
public engagement in science
Surveys show that while most Europeans are interested in science and technology, few feel they are very well informed about these subjects. Working to close that gap is the Science in Society (SiS) programme, which supports projects and initiatives that bring science and society together and give the public a say in science policy decision-making. In this way, the programme hopes to boost public trust in science and create a culture of science and innovation.

A Special Eurobarometer released in June 2010 shed new light on Europeans’ views of the research world (1). The poll revealed that almost 80% describe themselves as very or moderately interested in science and technology, and there is widespread agreement that science generates opportunities and improves the quality of our lives. However, only 11% feel they are very well informed about science and technology, and over half feel that scientists should make more of an effort to communicate with the public.

It is therefore clear that work is needed to forge stronger links between the public and researchers. As well as generating a better understanding of and trust in science among the public, this could also result in a greater sense of shared responsibility between science, policy and society.

The SiS programme currently finances 16 projects that are working to create proactive and innovative partnerships between the scientific community and relevant groups in society such as science event organisers, educational bodies, local groups, media and science communicators.

In addition, the SiS programme supports other activities in this area, ranging from major international events like the EuroScience Open Forum (ESOF) and the Lindau Foundation Nobel laureates meeting to smaller, local events and initiatives. The SiS unit is also proactively reaching out to the business and creative sectors. Meanwhile the SiS programme is moving with the times, as its activities recognise the fact that scientific debate is increasingly held in public spaces such as museums and the Internet.
**Bringing the public into the research fold**

In 2010, the SiS programme headed to China, where it organised a press briefing at the World Expo in Shanghai. Organised during the EU-China Science and Technology Week, the event’s theme was ‘Better city and better life – a better future for all’. It attracted 100 attendees and featured presentations from 4 EU-funded projects working to engage the public in science.

The CASC (‘Cities and science communication: innovative approaches to engaging the public’) links up groups from Europe and China to explore and develop innovative approaches to engaging the public in science. POLLEN (‘Seed cities for science’) sought to demonstrate how local communities (families, local authorities, museums, businesses, etc.) can get involved in the reform of science teaching in primary schools.

Museums form the focus of the MIC (‘My ideal city’) project, which is working on a coordinated exhibition involving different museums that will use ‘virtual worlds’ to provide visitors with alternative visions of their city and raise people’s awareness of urban planning choices. Finally, HIDE (‘Homeland security: biometric identification and personal detection ethics’) is creating a pan-European platform to promote dialogue on the ethics and governance of personal detection technologies and biometrics.

Another highlight of the year was ESOF 2010 (Euroscience Open Forum), which took place in the Italian city of Torino. The event, which had the motto ‘Passion for science’, attracted over 4 000 participants from all over Europe along with members of the public from the local area. As well as showcasing the very best of European science and technology development, ESOF includes an outreach programme for the general public covering science, careers and links with business. ESOF 2010 also saw the introduction of a new tool, WebESOF, which aimed to allow people, especially the young and underprivileged, to follow the event live online and even interact with ESOF participants.

**Science and young people**

For over two decades, the EU Contest for Young Scientists has celebrated the scientific talents of youngsters aged between 14 and 20. The competition is designed to attract young people to scientific careers. The 2010 edition was held in the Portuguese capital of Lisbon and attracted over 80 entries, which were judged by an 18-strong panel of top researchers. There were 3 first prizes worth EUR 7 000: these went to a Czech team studying carbon dioxide nanoclusters; a Polish biologist with an interest in ants’ foraging strategies; and a pair of Hungarians who came up with a computer programme to boost the popularity of the natural sciences, particularly ecology, in the classroom.

Another project working to raise youngsters’ interest in science is 2WAYS (‘Two ways for communicating European research about life sciences with science festivals and science centres/museums, science parliaments impact survey’). In December 2010, it organised the first Young Europeans Science Parliament at the European Parliament in Brussels, Belgium. The event saw pupils from across Europe tackle some of the most challenging ethical issues in life science research, such as genetic testing and the use of human embryonic stem cells.

**Science and the media**

Journalists have a key role to play in informing the general public about the latest scientific developments and their relevance to society. The Media for Science Forum held in Spain in May 2010 probed key issues in science journalism such as the role of the media, the advantages and risks of new tools, the social dimension of science and the public’s perception of and involvement in science. In a declaration, participants state: ‘Science journalists and communicators must take responsibility for encouraging understanding of research processes and the social, cultural and political implications that science has for society in our times.’ In addition, ‘the scientific community should work harder to provide scientific information of public interest.’

At the event, participants received a copy of a meta-review on the crisis in the media entitled ‘Science communication and science journalism’, edited by Vladimir de Semir of Spain’s Pompeu Fabra University. The document discusses changes in journalism, particularly the decline of science sections, in the context of the revolutions in the way the public accesses news and information.

**Putting the public into (public) health research**

What role do civil society groups such as patient organisations play in health research? Two EU-funded projects are hoping to find out. EPOKS (‘European patient organizations in knowledge society’) has found that diverse patient organisations are expert at combining scientific knowledge with patients’ experiences to engage in ‘evidence-based activism’. Furthermore, these groups forge strong links with other patient organisations as well as medical and health institutions and authorities at national and European levels.
For its part, the STEPS (‘Strengthening engagement in public health research’) project (12) is working to promote the involvement of civil society organisations in public health in the 12 newest EU Member States.

An evolution in the way research is carried out

The Europe 2020 strategy firmly places research at the centre of efforts to turn the EU into a smart, sustainable and inclusive economy (13). A seminar held in November 2010 explored how new ways of carrying out research could help Europe address societal challenges. Ideas discussed include building an online science-social network to encourage researchers to engage with the public; capacity building on science-society-policy interfaces; and the provision of seed funding for collaborations between research and civil society organisations.

Footnotes

(2) See http://en.expo2010.cn/ online.
(3) See http://www.eucasc.eu/index.html online.
(4) See http://www.pollen-europa.net/ online.
(6) See http://www.hideproject.org/ online.
(9) See http://www.twoways.eu/ online.
(10) See http://www.mediaforscience.com/ online.
(13) See http://ec.europa.eu/europe2020/index_en.htm online.
Open Access – the ‘Fifth Freedom’ in practice
Currently, barely a fifth of the research papers published every year are freely available via Open Access (OA) journals or repositories. Yet OA is key to ensuring the free movement of knowledge and advancing the European Research Area (ERA). In its Innovation Union and Digital Agenda flagship initiatives, the EU recognises the importance of OA in helping Europe to become a smart, sustainable and inclusive economy. The Science in Society (SiS) unit supports diverse activities to promote OA and explore the barriers to its wider uptake.

Every year, some 2.5 million research papers are published in 25,000 peer-reviewed journals and conference proceedings. The vast majority of these can only be viewed by subscribing to the publication or paying to read individual articles. However, up to 20% of articles published today are Open Access, meaning they are freely accessible online. Some scientific journals are entirely OA, while others allow authors to make their articles OA, although authors usually have to pay a fee themselves for this option. Furthermore, some journals allow authors to place articles in OA repositories run by their own institutions or other organisations.

OA and the EU

OA has been a part of EU research policy since 2007, when the European Commission released the communication Scientific Information in the Digital Age: Access, dissemination and preservation. This laid the foundations for EU policy on access to and the preservation of scientific information and data.

From the EU’s point of view, OA helps to turn the ‘fifth freedom’ (the free movement of knowledge) into a reality, and contributes to the creation of the ERA and the sharing of knowledge with other parts of the world. Another strong argument in favour of OA with regard to findings from publicly funded research is that the public should not have to pay to access the results of such research.

More recently, two of the Europe 2020 strategy’s flagship initiatives underline the importance of OA in helping the EU become a smart, sustainable and inclusive economy. The Digital Agenda communication states that ‘publicly funded research should be widely disseminated through
Open Access publication of scientific data and papers(5). Meanwhile in the Innovation Union communication(4), the European Commission commits to ‘promote open access to the results of publicly funded research’ and to ‘make open access to publications the general principle for projects funded by the EU research Framework Programmes’.

**OA and the EU’s research framework programmes**

Under the Seventh Framework Programme (FP7), OA publishing fees incurred by authors are eligible for reimbursement. Meanwhile, in 2008, the EU launched an OA pilot covering seven areas of FP7 (energy, environment, health, information and communication technologies [only cognitive systems, interaction and robotics], research infrastructures [only e-infrastructures], science in society and the socio-economic sciences and humanities). Between them, these areas account for around 20% of all projects funded under FP7. Under the pilot, project partners must do their best to ensure that their articles are freely available within 6 or 12 months of publication in a journal; the delay gives publishers time to exploit the economic value of an article while the results in it are still considered ‘new’ (and therefore valuable) by the scientific community. Disciplines where results date rapidly, such as health and energy research, have to adhere to the 6-month deadline, while subjects where results remain relevant for longer, such as the social sciences, must stick to the 12-month deadline.

In 2010, the European Commission launched the OPENAIRE (‘Open access infrastructure for research in Europe’) initiative, which creates a network of OA repositories providing free access to knowledge generated by researchers funded under FP7 (6). OPENAIRE also provides researchers with tools and expert assistance to help them make their articles available online. Ultimately, the project could result in new ways of indexing, annotating, ordering and linking research results, as well as new methods to automate all these procedures.

Back in 2007, EU research ministers called on Member States to ‘reinforce national strategies and structures for access to and preservation and dissemination of scientific information, tackling organisational, legal, technical and financial issues’(7). A workshop held in Brussels, Belgium, in November 2010(8) took stock of Member States’ progress in this area and provided a forum for 21 experts from around Europe to share experience, know-how and best practices.

The participants came up with a set of recommendations: the need to enhance European coordination to improve the effectiveness of Member States’ efforts; the importance of supporting initiatives to raise researchers’ and policymakers’ awareness of OA; and the need to clarify authors’ and institutions’ rights on their scientific work.

**SOAP sheds light on OA landscape**

The aim of the SOAP (‘Study of open access publishing’) project(9) was to analyse the OA landscape and provide facts and evidence to help libraries, publishers and funding agencies assess the drivers, barriers, risks and opportunities in the transition to OA publishing. Some key findings of the project are as follows.

- A total of 90% of scholars are convinced that OA journals are or would be beneficial for their field. Reasons given for this view are the benefits for both the individual scientist and the scientific community as a whole, financial issues and the public good.
- In 2009, 120 000 OA articles were published in full or hybrid OA journals, representing around 10% of the estimated global scientific output.
- Many disciplines have excellent OA journals that are in the top 1% to 2% of journals for that subject as measured by impact factor.
- Scientists who have published in OA journals say they did so because the content would be free to readers, the journal is of a high quality and no fee had to be paid directly by the author.
- Scientists who wanted to publish in OA journals but did not, cite funding problems and a lack of high-quality OA journals in their field as reasons for publishing in non-OA journals.

**New projects**

The EU is also funding projects designed to inform policy choices on access to scientific information. The call for proposals released in 2010 included a topic called ‘Assessing how research outputs and individual researcher level are evaluated and measured’(5). Among other things, projects funded under this topic are expected to shed new light on the dynamics of the European research system and the ways in which individual researchers’ outputs are measured and evaluated. Ultimately, projects should promote discussions of how the European research system affects and interacts with society, and provide policy solutions as to how this system can be improved.

Two projects funded under this topic are ACUMEN (‘Academic careers understood through measurement and norms’) and SISOB (‘An observatorium for science in society based in social models’). Both got under way in early 2011.

ACUMEN(10) aims to address certain flaws in the researcher assessment process, including the lack of resources for qualitative evaluation and the lack of...
recognition for certain types of work. The project team aims to develop criteria and guidelines for good evaluation practices, which will be based on an ACUMEN portfolio for individual researchers that draws on information from diverse qualitative and quantitative evidence sources.

For its part, SISOB (10) is developing tools to measure and predict the social appropriation of research knowledge, modelled as the product of complex interactions within and between networks of scientists, journalists, industrial groups, decision-makers and consumers. In this way, SISOB responds to policymakers’ and funding agencies’ desire to support research with a high social impact.

Footnotes


(2) See http://ec.europa.eu/information_society/digital-agenda/index_en.htm online.


(4) See http://www.openaire.eu online.


(7) See http://project-soap.eu/ online.

(8) Topic SIS-2010-1.3.3-1.


(10) See http://sisob.lcc.uma.es/ online.
Women in science and technology
Although their numbers are on the rise, women still represent less than one third of the EU’s research community. There is some good news in the data; the number of women entering science is rising fast, by almost 7% between 2002 and 2006 (for men the figure is just under 4%). In addition, 45% of PhDs are now awarded to women.

However, moving up the career ladder, the number of women falls off quickly: a mere 19% of grade A professors are women, who head only 13% of research institutions. The absence of women is particularly marked in some subjects, such as science and engineering, where about 90% of professors are male.

Why gender equality in science matters

Achieving gender equality is high on the EU’s agenda. In its Strategy for equality between women and men 2010–2015, the European Commission notes that ‘inequalities between women and men violate fundamental rights’. The Research and Innovation DG (Directorate-General) is responsible for a number of actions set out in the document, in areas as diverse as women’s economic independence, equal pay, equality in decision-making and gender equality in external actions.

On research, the document laments the fact that the target of having 25% of grade A professorship filled by women remains some way off. The European Commission recognises the fact that the lack of women in science is not just an affront to equality; it is also potentially harmful to the European economy.
Beyond Group on Women in Science entitled Gender and Research draw heavily on the 2009 position paper of the Helsinki Group on Women in Science and Technology (4). The paper highlights both the importance and feasibility of structural change in institutions.

Projects that put structural change into practice

One example of a project working to implement structural change is GENSET (‘Increasing capacity for implementing gender action plans in science’) (5), which creates a forum for dialogue among science leaders, gender experts, scientific institutions and science strategy decision-makers. A report issued in 2010 (6) sets out recommendations in four areas where inequalities and biases put women at a disadvantage: knowledge making; the deployment of human capital; institutional practices and processes; and regulation and compliance with gender-related practices.

The ministers express their support for the idea that structural change should be part of the modernisation of research institutions. ‘Noting that the inclusion of gender issues in research is a resource to create new knowledge and stimulate innovation, [the Council of the EU] stresses that this dimension should be taken into account while modernising research institutions and in any structural and cultural change, designed to improve the effectiveness and impact of the research itself,’ the ministers state.

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The EU and gender in science – taking stock of the first 10 years

The EU started formally working on the issue of women in science back in 1999, and between 2002 and 2010 it
invested over EUR 36 million on projects in this area. A report released in 2010 entitled *Stocktaking 10 years of ‘Women in Science’ policy by the European Commission 1999-2009* looks back over the activities undertaken and assesses their effectiveness (9). It includes analyses of what went wrong and what was not done, and provides suggestions as to how these omissions could be addressed.

Taking stock of past activities in this way should help the European Commission develop future policies in this area. The report also represents a useful resource for project proposers, as it provides them with extensive background information on the area as well as details of previous projects funded.

**A meta-analysis of gender and science research**

The ‘Meta-analysis of gender and science research’ project (10) is compiling and analysing gender and science research on both vertical segregation in research careers (which assess the barriers keeping women from top scientific positions) and horizontal segregation in research careers (i.e. women’s subject choices, perceptions of the attractiveness of science, the causes of success and failure at university level).

The project’s final conference was held in Brussels, Belgium, in October 2010. During the debate, participants called for better statistics and a more coordinated effort for developing tools for mainstreaming gender analysis in research. The scope of research also needs to pay more attention to excellence criteria and assessment practices, to the non-linear nature of many academic careers and to research careers outside academia.

**Footnotes**


(6) See http://www.genderinscience.org online.


(10) See http://www.genderandscience.org online.
A revolution in the classroom
– modernising science education
If Europe is to achieve its goal of becoming a smart society, it urgently needs to encourage more young people to embark on scientific careers. Studies have shown that inquiry-based science education (IBSE) is particularly effective at awakening youngsters’ interest in science and maths. A number of EU-funded projects are fostering the greater uptake of IBSE in schools across Europe.

In its Europe 2020 strategy, the EU declares its intention to become a smart, sustainable and inclusive economy (1). Achieving this will entail attracting much larger numbers of youngsters to scientific careers. Furthermore, science and innovation are increasingly part of our everyday lives, so all citizens, whether they work in research or not, benefit from an understanding of these important subjects.

However, providing young people with a good grounding in science and motivating them to pursue scientific professions require a strong science education system, and this is where the problem lies. In its communication Innovation Union (2), an initiative launched under the Europe 2020 strategy, the European Commission writes: ‘The starting point for the Innovation Union is to create an excellent, modern education system in all Member States. Although Europe has a good basic education system compared to many parts of the world, significant weaknesses remain with science teaching in some Member States.’

A different way of teaching science
Studies have shown that applying IBSE is the best way of inciting pupils to take an interest in science, technology, engineering and mathematics (STEM) subjects. Traditionally, these subjects are taught in a top-down fashion, with the teacher simply presenting information to the pupils. In contrast, IBSE taps into children’s natural curiosity; it encourages them to think for themselves and develop a proper understanding of the subject.

For example, in a conventional science lesson on hourglasses, a teacher may simply explain to the students the factors influencing the amount of time it takes for the sand to run out. However, a teacher using IBSE could present pupils with different hourglasses and encourage the children to observe that some run out faster than others. From this, the teacher may prompt the children to discuss what causes these differences and to design experiments to test their ideas.

In many ways, IBSE gives children a realistic view of the way science is carried out in real laboratories: like professional scientists, pupils have to formulate questions, design and run experiments, analyse results and come to a conclusion. Furthermore, IBSE also teaches children that science involves teamwork and communication, as pupils are encouraged to discuss their findings with others.

IBSE is suited to both girls and boys, and primary and secondary settings, and the equipment involved does not need to be complicated or expensive. It does not completely replace learning from textbooks; rather information in textbooks complements what the students work out for themselves.

However, implementing IBSE is not always easy. In many countries, STEM curricula and assessment systems may not be geared towards IBSE, and the amount of time allocated to STEM subjects may not be adequate. Furthermore, some teachers feel they lack the skills to adopt the IBSE approach. Parents and local authorities may also question its usefulness.

The good news is that there is a suite of EU-funded projects promoting the uptake of IBSE across Europe in diverse ways.

FIBONACCI – twinning teams
The FIBONACCI (‘Large scale dissemination of inquiry based science and mathematics education’) project (3), which began in 2010, is taking a grassroots approach to the spread of IBSE. During the project, 12 Reference Centres (with expertise in IBSE) are providing 25 Twin Centres
with extensive training and resources. By the end of the project, the Twin Centres should have become Reference Centres themselves and be ready to spread the word about IBSE further. In this way, FIBONACCI hopes to reach 3 000 teachers and 45 000 students Europe-wide.

A highlight for FIBONACCI in 2010 was the organisation of a major European conference on IBSE, which took place in Bayreuth, Germany, in September 2010. The event attracted over 170 teachers, teacher trainers, researchers and other people working on IBSE. The conference concluded that more discussion is needed on two key issues, namely the definition of IBSE, and the links between dissemination and research.

**PRIMAS – getting everyone involved**

Another project that got underway in 2010 is PRIMAS (‘Promoting inquiry in mathematics and science education across Europe’)(5). PRIMAS is supporting teachers and teacher trainers by providing them with both training opportunities and resources for the classroom. Crucially, PRIMAS is organising information events for parents, students, local authorities, politicians and others involved in education; this will ensure that teachers get the backing they need to fully implement IBSE methods. Ultimately, PRIMAS plans to train 20 teacher trainers in each of the countries involved in the project, who in their turn will train at least 150 teachers.

**ESTABLISH – a secondary focus**

The ESTABLISH (‘European science and technology in action, building links with industry, schools and home’) project(4) is working to promote IBSE in secondary schools (where pupils are aged from 12 to 18). Project partners are working with teachers and students to develop and put in place IBSE teaching and assessment tools that are culturally adapted to each country involved in the project. The project website also contains a wealth of project ideas for use in the classroom and for training teachers in IBSE.

The team is also collaborating with policymakers responsible for secondary-level science curricula, as well as parents, students and local industry. Finally, the project plans to investigate links between science education in secondary schools and the business community.

**S-TEAM takes on IBSE**

A further project working on IBSE is S-TEAM (‘Science-teacher education advanced methods’) (6). A survey released by the project in 2010 reveals that although IBSE is included in science teacher training in many European countries, it rarely features in professional development courses for existing teachers. According to the report, these courses tend to focus more on content (‘what to teach’) than method (‘how to teach’).

Furthermore, newly qualified teachers tend to copy the approach used in their schools, even if they learnt more innovative teaching methods during their training. The report attributes this to new teachers’ low status and lack of experience compared to their colleagues. According to the report, this finding highlights the need for better professional development systems that reflect what is taught to new teachers.

In October 2010, S-TEAM held a conference in Glasgow, UK, on the future of science education. The event attracted over 110 participants including representatives of the ESTABLISH, FIBONACCI, PRIMAS and SCIENTIX projects. They concluded that although science teachers welcome IBSE, certain factors hamper its effectiveness. For example, curriculum and assessment methods should be integrated with IBST, and the time for STEM teaching should be increased. Furthermore, there should be more collaboration between science and maths teachers, to ensure that pupils’ progress in science is not held back by poor maths skills.

Finally, participants called for the creation of a European framework for professional development qualifications in STEM teaching to provide existing teachers with the skills and confidence to implement IBSE in the classroom.

**SCIENTIX – a platform for science education in Europe**

In June 2010, the European Commission launched the SCIENTIX Web portal, which is designed to promote the sharing of news, know-how and best practice in science education(7). SCIENTIX brings together teaching materials, research results and policy documents from both EU-funded and other science education projects. The site is available in 6 languages (English, French, German, Italian, Polish and Spanish), and users can ask for teaching materials to be translated into any of the EU’s 23 official languages. The site also includes a community area where users can share ideas and experiences.

**Footnotes**

(1) See http://ec.europa.eu/europe2020/index_en.htm online.
(3) See http://www.fibonacci-project.eu online.
(4) See http://www.establish-fp7.eu online.
(5) See http://www.primas-project.eu online.
(6) See http://www.ntnu.no/s-team online.
(7) See http://scientix.eu online.
At the end of 2010, the European Commission’s Directorate-General for Research became the Directorate-General for Research and Innovation and underwent reorganisation. As a result, the SSH and SiS work is now managed by units in the European Research Area Directorate (Directorate B).

Two units within Directorate B are responsible for the scientific content of projects and related policy areas.

The Social Sciences and Humanities Unit defines and implements the research strategy on economic, social and human sciences, providing various stakeholders with input for evidence-based policymaking in the EU. In particular, activities in this unit focus on the Europe 2020 strategy and the Innovation Union flagship initiative, sustainable development, globalisation, and the new social agenda for the 21st century. In addition, the unit promotes forward-looking activities concerning world issues, technological development and geopolitics.

The Ethics and Gender Unit defines and manages research supporting EU policies in the areas of governance (e.g. civil society and citizens’ engagement in research and innovation), ethics, gender, education of science, communication and scientific culture.

Within the unit is the Ethics Sector, which manages the ethics review process and trains staff in the ethics review procedures. In addition, it runs capacity-building activities throughout Europe and elsewhere.

Finally, the Gender Sector supports research and other activities that improve the position of women researchers in both the public and private sectors.

Footnotes

(1) http://ec.europa.eu/research/social-sciences/
(2) http://ec.europa.eu/research/science-society/
How to obtain EU publications

Free publications:
- via EU Bookshop (http://bookshop.europa.eu);
- at the European Commission's representations or delegations. You can obtain their contact details on the Internet (http://ec.europa.eu) or by sending a fax to +352 2929-42758.

Priced publications:
- via EU Bookshop (http://bookshop.europa.eu);

Priced subscriptions (e.g. annual series of the Official Journal of the European Union and reports of cases before the Court of Justice of the European Union):
In 2010 the European Union continued to address the challenges of the Europe 2020 Strategy by funding Research and Innovation and implementing the European Research Area. A key element of this was the funding from the 7th Framework Programme for Research (FP7) devoted to Socio-Economic Sciences and Humanities research (SSH). Research which is an important tool enabling the European Commission to analyse the challenges Europe is facing and to support its development of appropriate policy responses. Furthermore the future of Europe is linked to its capacity to integrate science into society and this is supported by the European Commission through the Science in Society (SiS) theme of FP7 with, inter alia, its major efforts at developing the “Fifth Freedom” (i.e. the free movement of knowledge). This report describes the current organisation of SSH and SiS and what happened during 2010 under these headings.