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## **Final Activity Report**

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Project coordinators: **Stefano Ciccone, Luciano d'Andrea**

Project coordinator organization name: **University of Rome "Tor Vergata"**

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# Executive Summary

## Summary description of project's structure and objectives

Within the Sixth Framework Programme for Research and Technological Development. (Priority 7 – *Citizenship and Governance in a Knowledge-based Society*, Research Area 8 - *Actions to promote the ERA in SSH*), a network of European research institutions promoted the project “**Social Sciences and European Research Capacities**” (SS-ERC).

The project's **overall objective** is that of enhancing the role of social sciences in order to increase the quality levels of European scientific and technological research, in the strategic perspective established at the Lisbon Special European Council, held in March 2000. More generally, the project is intended to be part of the efforts made both at European and at national levels to support scientific and technological research and to make it, at the same time, more transparent and open to citizens.

The European Commission's aim within the context of priority 7 is “to mobilise in a coherent effort, in all their wealth and diversity, European research in economic, political, social sciences and humanities that are necessary to develop an understanding of, and to address issues related to, the emergence of a knowledge-based society and new forms of relationships between its citizens, on the one hand, and between its citizens and institutions, on the other”.

The SS-ERC project intends to contribute to this aim through an action aimed at enhancing the role of social sciences in the knowledge and governance of the social factors involved in scientific and technological research processes. The project, which was started up on 1 May 2006, will last for 36 months and is organised into the following workpackages:

- the workpackage “**Study**”, aimed at generating new knowledge on the current and potential role of social sciences in scientific and technological research processes;
- the workpackage “**Experimentations**”, geared to obtaining a greater understanding of the social aspects involved in research processes, the factors which can facilitate or hinder full recognition and effective control, as well as the “added value” that the skills connected to social research can create to the advantage of scientific and technological research;
- The workpackage “**Draft of the first version of the handbooks**”, aimed at drafting **four handbooks**, devoted respectively to the themes of social research on science and technology, evaluation, scientific communication and mediation, in order to turn the results obtained through the research and experimentation activities into theoretical and operational directions addressed to the actors of scientific and technological research;
- The workpackage “**Draft of the final version of the handbooks**”, geared to validating the handbooks and producing their final version.
- The workpackage “**Dissemination and sensitisation activities**”, aimed, in general, at increasing the awareness of the actors of scientific and technological research regarding the social processes embedded in science and technology, also through a specific action of dissemination of the project products.

- The workpackage “**Management, evaluation and assessment**”, geared to assuring adequate quality and efficiency to the project.

## **Contractors involved**

The **network** is made up of six organisations:

- University of Rome Tor Vergata (**TVR**) (project coordinator);
- Danish Center for Studies in Research and Research Policy of the University of Aarhus (Denmark) (**UA-AR**);
- University of Maastricht (Netherlands) (**UM-TSS**);
- Laboratorio di Scienze della Cittadinanza (Italy) (**LSC**);
- Science and research Centre of Koper, University of Primorska (Slovenia) (**UPZRS**);
- Fundacion La Rioja (Spain) (**FUR**).

## **Co-ordinator contact details**

### **University of Rome Tor Vergata**

#### Legal Representative:

Rector Renato lauro  
Via Orazio Raimondo, 18  
00173, Roma

#### Contact Person (Project Co-ordinator):

Dott. Stefano Ciccone  
Via della Ricerca Scientifica, Ed. PP1  
00133, Roma  
Tel.: +39 06 72594896  
Fax: +39 06 72594783  
e-mail: [ciccone@uniroma2.it](mailto:ciccone@uniroma2.it)

#### Websites:

<http://www.uniroma2.it/>  
<http://www.romascienza.it/>

# Section 1 – Project Execution

## Overview of general project objectives and current relation to the state-of-the-art

The project is based on the identification of a «stake» involved in scientific and technological research justifying a specific effort towards a higher integration of social sciences in S&T. The questions at stake can be summarised in the following points.

**A. The increasing relevance of S&T.** In a context where knowledge is the main resource for dealing with problems or for grasping the existing opportunities, a country or a local community that loses ground in the research sphere runs the risk - in the long run - of being not only slowed in its economic and social development, but more generally hit in its very identity, that is, in its capacity to have control over itself and over the environment (social, economic or physical environment) in which it acts. Therefore, to an increasing extent, the «social fates» of a local or national community depend on the capacity to promote scientific and technological research and to fully use its results.

**B. Changes in S&T production.** This fact appeared all the more evident in the light of the great changes taking place in S&T over the last decades, usually thematised as a shift from "mode 1" to "mode 2" in scientific and technological research production. These changes made broader, more complex and pervasive the relations between science, technology and society, leading to a great increase in the weight of social factors in research processes.

**C. Gap in the management of Science-Technology-Society relationships.** All this has occurred in a very short period of time and often in chaotic and contradictory ways. This caused dangerous mismatches between the increasingly rapid pace of scientific and technological research and the time needed for setting up effective «regimes» to manage the growing «co-penetration» between science, technology and society, to exploit its potentials and to control the risks it could produce. Perhaps, in this regard, it is no exaggeration to talk in terms of a gap still to be filled which directly concerns research governance, but involving also many spheres of social life, including the very participation mechanisms of citizens in democracy.

**D. The socialisation of scientific and technological research.** The aforesaid elements focus the attention on what seems to be the main issue to be dealt with, and namely the socialisation of research. Socialising research essentially means recognising, interpreting and treating the social elements involved in scientific and technological research. Forms of socialisation of research have undoubtedly always existed, in most cases embedded in the usual scientific practice. This fact has also sustained the belief that within science there are peculiar rules and norms that are different from the ones prevailing in other sectors of social life. However, within the "mode 2" context, the socialisation of research can take place only through more complex processes requiring, for example, the mobilisation of specialist high level knowledge and skills, the mobilising of many different subjects, the forming of new professional figures or the dissemination of innovative ways in managing research programmes and institutions.

**E. The role of social sciences.** In all this, the social sciences have a decisive role to play. They have, on the whole, already had the great merit of enabling a new vision of scientific

and technological research, also overcoming a cultural battle as well as a scientific one on the very social nature of S&T, denied for such a long time. However, there is another hurdle to overcome. Many aspects of the socialisation of S&T are unknown and still do not have a "name", while for many others there is a lack of information necessary to describe their salient features; there are few tools available for measuring, evaluating or governing the dynamics of socialisation. The socialisation of scientific and technological research thus raises a broad range of issues that can be dealt with only through substantial and strong commitment on the part of social researchers.

**F. Technological responsibility.** What has been said so far shows how the socialisation of S&T does not represent just a phenomenon to be investigated, but also an objective to be pursued. As we have tried to show, a "hyposocialised S&T" incapable of handling one's relations of co-penetration and co-evolution with society, exposes itself and the society to serious dangers. Hence the importance of grasping the role of the social sciences also in a broader horizon, that is, from the expansion and dissemination of "technological responsibility", meant as the commitment to supporting scientific and technological research, to combating its decline, to valorising it and steering it. More than from an ethical standpoint, technological responsibility should thus be interpreted – in a broad sense – within a "technical" dimension, that is, as a sort of "regime" enabling each actor to "make his own contribution" to make the research proceed.

The aforesaid six points allow providing a clearer interpretation of the aims of the SS-ERC project.

Its general aim is to favour an **increase in socialisation of scientific and technological research** within the European Research Area, by greater and more strategic **recourse to the social sciences** enabling the full use of their potentials, both as regards the knowledge they produce and as regards the skills they can sustain.

More specifically the project intends to generate new knowledge and gain elements of evaluation on two sets of issues for which the available knowledge is inadequate or asystematic:

- the **weight** (role and added value) of **social sciences** in the context of scientific and technological production in the ERA;
- the **factors hindering and facilitating an increasing socialisation of S&T** as well as a greater involvement of social researchers into systems of scientific and technological production.

Starting from this knowledge basis, the project intends to pursue two other objectives:

- to identify **policies** and **measures** aimed at a broader integration between social sciences and European S&T;
- to increase the **level of awareness** of the various actors involved in the European research on the S&T socialisation dynamics.

## Methodology

The project, which was started up on 1 May 2006, has lasted for 38 months and was organised into **four main actions**.

- The first action consisted of a **research**, aimed at generating new knowledge on the current and potential role of social sciences in scientific and technological research processes. In the framework of the research, 75 in-depth interviews to experts and key persons were supposed to be conducted and 10 focus groups to be organised. Moreover, two inventories were planned, one on the themes dealt with by the social sciences pertaining to science and technology and the other on the European organisations carrying out activities connected to the socialisation of scientific and technological research.
- The second action was focused on the carrying out of **four experimentations** geared to obtaining a greater understanding of the social aspects involved in research processes, the factors which can facilitate or hinder full recognition of, and effective control on, them, as well as the "added value" that the skills connected to social research can create to the advantage of scientific and technological research.
- The third action was aimed at drafting **of a handbook** on socialisation of scientific and technological research, devoted respectively to the themes of social research on science and technology, evaluation, scientific communication and mediation. The handbook aims to turn the results obtained through the two previous activities into theoretical and operational directions addressed to the organisations actively involved in the European Research Area. The handbooks had to be validated through the involvement of a panel made up of experts and social researchers.
- Lastly, the project included a broad action of **dissemination** and **sensitisation** activities aimed, in general, at increasing the awareness of the actors of scientific and technological research regarding the social processes embedded in science and technology. To this end, the project provided for the setting up of a website, the dissemination of the project's products, the drafting and dissemination of an online newsletter and the organisation of two seminars to be held in Brussels and four national presentations of the results.

# Description of Work

## Workpackage 1 “Study”

As for the **workpackage 1 “Study”** the following activities have been carried out:

- the draft of the project executive design;
- the draft of the Review of the international literature on social sciences and the scientific and technological research, which represents the first research report delivered by the project;
- the draft of a questionnaire on socialisation of S&T and the role and added value of social sciences for conducting the interviews provided for the workpackage;
- the draft of the **discussion outlines** on socialisation of S&T and the role and added value of social sciences to be used for organising the focus groups provided for the workpackage;
- the conducting of 57 interviews with key persons in Denmark, Italy, the Netherlands, Slovenia and Spain and of 6 interviews with experts;
- the organisation of 11 focus groups in Denmark, Italy, the Netherlands, Slovenia and Spain (51 participants overall);
- the set up of a computerised inventory of the themes dealt with by the social sciences on S&T-related issues;
- the set up of a computerised inventory of European social research institutions specialised on S&T-related issues;
- the consultation of 6 experts for the validation of the inventory of the themes;
- the draft of 5 working documents on the results of the activities carried out respectively in Denmark, Italy, the Netherlands, Slovenia and Spain;
- the implementation of the final studies aimed at drafting the final report of the workpackage “Study”

In July 2007, the workpackage “Study” has been completed. On the basis of the fieldwork ended in April 2007 and the National Working Documents delivered in May 2007, the Final Research Report has been drafted and delivered.

The Report is organised in four parts.

- The first part is the introductory one and describes the institutional framework and the theoretical and methodological structure of the research.
- The second part, made up of four chapters, focuses on the results of the research related to the socialisation of S&T.
- The third part, which includes two chapters, deals with the role and added value of social and human sciences with regards to scientific and technological production as well as the relationship between science and society.
- The last part provides a summary of the report and makes some final considerations.

## Workpackage 2 “Experimentations”

As for the **workpackage 2 “Experimentations”** the following activities have been carried out:

### The experimentation planning process

In the second reporting period, the planning process of the four experimentations has been completed. This process included:

- the organisation of a visit carried out by the project scientific co-ordinator and the Tor Vergata project co-ordinator to Logroño (meeting with the La Rioja University Foundation on November 15-16 2007), Koper (meeting with the Primorska University on November 26-27 2007) and Brussels (meeting with the Danish Center for Studies in Research and Research Policy of the University of Aarhus on December 4 2007);
- the drafting of the experimentation plan;
- the discussion and formal approval of the experimentation plan at the Project Steering Committee Meeting held in Koper on February 11 and 12 2008;

Starting from January 2008, the four experimental activities have been activated. The four experimentations have been carried out respectively in Italy, Spain, Slovenia and Denmark. Maastricht University provided scientific support in the experimentation planning and start-up. All the experimental activities follow the same overall scheme, which includes four main phases:

- an in-depth study on the actors and processes the experimental activities are focused on;
- the implementation of on or more pilot initiatives;
- the analysis and the evaluation of the activities carried out;
- the production of an activity report.

#### The experimentation in Italy

The experimentation in Italy - jointly carried out by the Tor Vergata University and Laboratorio di scienze della cittadinanza - was focused on the socialisation of scientific practices. The experimentation **involved two research groups** based at the Tor Vergata University, one of which specialised in immunology and vaccine development and the other specialised in mechanical engineering and technology.

In the first phase of the experimentation, all the members of the two research groups as well as some of their institutional counterparts and partners have been interviewed in order to investigate on nature and characters of the research groups and to identify the main social, economic, cultural and political factors influencing their scientific practices.

The interviews (more than 30, each one of around 75/90 minutes of length) have been completed at the end of second year and the final information processing phase started up with the set of the two pilot initiatives.

#### The experimentation in Spain

The experimentation in Spain has been undertaken by the General Foundation of the La Rioja University and was focused on scientific mediation, that is the heterogeneous and little formalised set of activities managing the relationships between scientific and technological research and the different social “micro-environments” in which it is embedded.

The experimentation involved two research groups in bio-agricultural research (specialised in vine cultivation) at the La Rioja University in Logroño. Using a direct observation approach, an in-depth study of the two groups have been carried out, showing, on the one side, how university environment (and, in particular, teaching duties and management of research) are strongly constraining the dedication of scientists to substantial activities of research and, on the other side, how complex are the relationships between research groups and private companies.

### The experimentation in Slovenia

In Slovenia, the Primorska University carried out an experimentation on scientific communication, geared to improve the way in which the university communicate with the local actors, with special reference to the business sector.

The study undertook in the first phase of the experimentation included a documentation analysis aimed at a better understanding of the problems met by the Primorska University in developing an effective communication with the outside and a set of initiatives aimed at data gathering and consultation, i.e.: a focus group involving the principals of the seven Institutes of Scientific and Research centre operating in Koper; 10 in-depth interviews with researchers at the Institute for Mediterranean Humanities and Social Studies; an in-depth interview with the Prorector of the Primorska University.

The second phase revolved around the development of a university portal specifically addressed to the business sector, in order to, on the one side, disseminate information among the local enterprises on the research activities carried out by the university and, on the other side, to facilitate forms of partnerships and co-operation between university and local firms. The phase included the establishment of a communication unit inside the University and the development of a work plan implemented after the completion of the experimentation.

### The experimentation in Denmark

The experimentation in Denmark was carried out by the Danish Center for Studies in Research and Research Policy of the University of Aarhus. It pertained the use of S&T information and evaluation on the part of the members of Danish Parliament.

During the first phase, a State of the Art on evaluation of S&T knowledge and policymaking has been drafted and a questionnaire on the use of scientific information and evaluation has been administered to the members of Parliament.

A consultation-based experimental activity was then carried out with the involvement of Danish MPs and experts, through which models for better integrating scientific knowledge in decision making processes have been developed. The experimentation included a final assessment of the models through a panel of experts.

### The role of Maastricht University

The University of Maastricht, through Wiebe E. Bijker, provided a strong support to the workpackage, from two different points of view. In the experimentation planning process, Bijker contributed in defining the objectives and overall features of the workpackage and in ensuring a high level of consistency between the experimentations and the broader aims of the project. Moreover, during the implementation of the experimental activities, he provided the partners with suggestions and advice about the best strategies to devise in order to maximise the experimentations' outcomes both in scientific terms and in the perspective of policy making.

In the period May 2008 – January 2009, the workpackage “Experimentations” has been completed. After the end of the experimentation planning process, it was decided to organise two experimentations in Rome, one focused on scientific practices (as previously planned) and one on innovation. Therefore, the experimentations carried out have been five, of which:

- one in Denmark, on evaluation, implemented by the the Danish Center for Studies in Research and Research Policy of the University of Aarhus;
- two in Italy, respectively on scientific practices and on innovation, conducted by the Science Park Office of the Tor Vergata University and by Laboratorio di scienze della cittadinanza in Rome;

- one in Slovenia, on scientific communication, carried out by the Primorska University of Koper;
- one in Spain, on scientific mediation, under the responsibility of the General Foundation of the La Rioja University, in Logroño.

All the experimentations were based on a **similar underlying structure**:

- a preparatory phase (contacts with the potential counterparts, establishment of the experimentation staff, project idea, experimentation project design);
- an interpretative phase (study, analysis, literature review, etc.);
- an operational phase (experimental tests of actions and improvements, consultations, etc.);
- an interpretative phase (a final output: guidelines, programmes, reports, etc.).

A **common drive** of the experimentations was that of analysing the relationships between social sciences and natural scientists and identifying factors and constraints hindering a fruitful co-operation (a “pact”) between social researchers and natural scientists. Common it was also the **overall timetable**.

### **Workpackages 3-4 “Handbook”**

As for the **workpackages 3-4 “Handbook”** the following activities have been carried out:

- At a first glance, Wiebe E. Bijker, of the University of Maastricht, in order to collect information useful for developing the structure and defining the contents of the handbook on S&T socialisation, started an intensive exchange with the other partners on the experimentation activities. In this framework, on March 6 and 7 2008, Bijker visited the Tor Vergata University (for the experimentation on scientific practices) and on April 21 a second meeting was held in Brussels about the experimentation underway in Denmark. Both the meetings were attended by the Project scientific co-ordinator.
- May-June 2008 – SS-ERC scientific coordinator, Luciano d’Andrea, prepared a first project proposal on handbook, including aims, targets, and a tentative structure (organisation in parts and chapters).
- June 23 and 24 2008 – The proposal was presented to the contractors in the framework of the Fourth Steering Committee Meeting held in Maastricht (Netherlands). The proposal was discussed, amended and approved.
- July-September 2008 – On the basis of the outputs of the Steering Committee Meeting, d’Andrea prepared an advanced proposal on the handbook contents and structure.
- October 16-17 2008 – The advanced proposal was presented to the members of consortium in the framework of the Fifth Steering Committee Meeting held in Brussels. The proposal was discussed, amended and approved.
- October-December 2008 – On the basis of the advanced proposal, each designed author prepared a note on the part/chapter he/she was responsible for.
- December 10 2008 – The notes were discussed at the Sixth Steering Committee Meeting held in Brussels.
- December 2008 – Wiebe Bijker (University of Maastricht), as co-editor, provided all the authors with written suggestions and comments.
- February 2009 – All the authors delivered a first version of the texts.
- March-April 2009 – The reviewing process was carried out. Sally Wyatt, researcher of the Virtual Knowledge Studio for the Humanities and Social Sciences of the Royal Dutch Council for Arts and Sciences (KNAW) and former president of the European Association for the Study of Science and Technology (EASST), reviewed the text from

the scientific point of view; Erik Aarden (University of Maastricht) reviewed the text from the substantive and linguistic perspective; Luciano d'Andrea coordinated the reviewing process, directly interacting with the reviewers and the authors; Gian Luca Porinelli (Tor Vergata University) coordinated the activities related to the design of the handbook lay-out (the design was carried out by the firm SECTIO of Rome).

- April-May 2009 – A provisional version of the handbook was sent to the DG Research scientific project officer Maria Louisa Anastopoulou and evaluated by two officers at the DG Research. After a meeting held in Rome on May 13 between Ms. Anastopoulou, Luciano d'Andrea and Gian Luca Porinelli, the publishing process was started.
- May-June 2009 – At the end of May, the first printed version of the handbook was delivered. The draft was reviewed by Luciano d'Andrea.
- On June 14 2009 the printed version of the text was delivered by the printing firm.

The handbook is edited by Wiebe E. Bijker and Luciano d'Andrea. The authors are as follows:

- PART A: Luciano d'Andrea (SS-ERC Scientific coordinator) and Marco Montefalcone (Laboratorio di Scienze della Cittadinanza);
- PART B: Erik Aarden (University of Maastricht);
- PART C, Chapter 1: Luciano d'Andrea and Brigida Blasi (Tor Vergata University);
- PART C, Chapter 2: Miguel Martínez López (Sociology II Department, Universidad Complutense de Madrid) and Elena Cuesta del Rey (General Foundation of the La Rioja University);
- PART C, Chapter 3: Ernest Zenko, Peter Sekloča and Blaz Lenarcic (University of Primorska);
- PART C, Chapter 4: Evanthia Kalpazidou Schmidt (Danish Centre for Studies in Research and Research Policy of the University of Aarhus);
- PART C, Chapter 5: Karen Siune and Niels Mejlgaard (Danish Centre for Studies in Research and Research Policy of the University of Aarhus);
- PART C, Chapter 6: Luciano d'Andrea and Sandra Romagnosi (Tor Vergata University).

## **Workpackages 5 “Dissemination”**

As for the **workpackage 5 “Dissemination”** the following activities have been carried out:

### Maintenance and updating of the Project website

At the beginning of the project the official project website was created and, during all project's duration, the maintenance and the updating of the Project website ([www.techresp.eu](http://www.techresp.eu)) have been ensured. This includes, in particular, the upload of all the documents and reports produced in the framework of the SS-ERC Project.

At the beginning of third year of activities, the SS-ERC project website ([www.techresp.eu](http://www.techresp.eu)) has been profoundly improved, through a process of re-designing, allowing to:

- facilitate the access to the different sections of the site;
- enlarging the scope of the site, in order to focus it, not only on the project activities, but overall on issues related to science and technology socialisation.

### Newsletter and Mailing list

During project's duration, as established on the Project design document, twelve issues of the Project Newsletter have been published and disseminated via e-mail (around 2,500 addresses).

### Presentation note

As first tool for disseminating project's initiatives and objectives a Presentation Note was realized and disseminated at the very beginning of the project.

### First Seminar in Brussels

In the framework of the workpackage, a seminar titled "Social Sciences for the Scientific and Technological Advancement. Dialogue on governance and development policies of the European Research Area" was held at the European Parliament in Brussels on October 16th 2007.

The seminar was devoted to the socialisation of scientific and technological research and on the role of social sciences in support of the European scientific and technological development.

The speakers at the seminar – chaired by Alfonso Alfonsi, Consultant of the Laboratorio di scienze della cittadinanza – were: Jean-Michel Baer, Director of the Directorate "Science, Economy and Society, DG Research, European Commission; Rocco Antonio Cangelosi, Ambassador, Permanent Representative of Italy to the European Union; Andrzej Jan Rys, Director of the Directorate "Public Health and Risk Assessment", DG SANCO, European Commission; Augusto Bonucci, Director of the Directorate "Resources", DG Energy and Transport, European Commission; Luisa Prista, Head of the Unit "Surface Transport", DG Research, European Commission; Gerd Wolf, European Economic and Social Committee; Andrea Ceroni, Professor, University of Milan-Bicocca; Antonio Di Giulio, Head of Unit "Food, Health and Well-being", DG Research, European Commission; Alessandra Perrazzelli, Head of International Affairs, IntesaSanpaolo Spa; Giuseppe Roffi, EU Liaison Office, Italian National Research Council. Two members of the European Parliament – Pia Locatelli and Antonio Tajani – also participated in the event.

Different representatives of the institutions involved in the SS-ERC project participated in the seminar, and namely: Wiebe Bijker, University of Maastricht; Evanthia Kalpazidou Schmidt, Danish Centre for Studies in Research and Research Policy of the Aarhus University; Ernest Zenko, University of Primorska, Koper; Paolo Signore, Director of Laboratorio di scienze della cittadinanza; Stefano Ciccone, Science Park Office, University Tor Vergata, Rome; Luciano d'Andrea, Scientific Director of the SS-ERC Project.

### Production of new dissemination tools

Following up a meeting held in Brussels on December 5 2007 between Maria Louisa Anastopoulou (project officer at the DG Research, in charge of following the SS-ERC project) and a delegation of the SS-ERC Project, made up of Stefano Ciccone and Gian Luca Porinelli (Tor Vergata University) and Luciano d'Andrea (scientific co-ordinator), a new dissemination strategy has been developed.

In this framework, several dissemination tools have been produced:

- a Project Policy Brief, developed in the period January-March, in close interaction with the DG Research
- a Project Brochure, developed on April in its first version
- the production and diffusion of a 30-page summary of the Handbook on the socialisation of scientific and technological research, titled "Highlights" (which took the place of the foreseen Second Policy Brief);
- the production and diffusion of a 3-page project identity card;

- the production of a discussion paper for the final workshop in Brussels.

All products have been disseminated by project's partnership.

### National Seminars

Four national seminars have been organised, respectively in Denmark, Italy, Slovenia, and Spain for presenting the final outputs of the experimentations and the project.

The first seminar was organised in Denmark, by the Danish Center for Studies in Research and Research Policy of the University of Aarhus just at the end of the experimentation (March 4-5 2009). It has been organised in Copenhagen in the framework of a larger event titled "Science and Democracy". The presentation focused on the experimentation results, with special reference to the **consultation** carried out in the context of the experimentation with some chairmen of the research committees of parties in the Danish Parliament.

The second seminar was organised in Koper by the Science and Research Center of the Primorska University, on June 11 2009, at the Forestry of the University. The event was titled "**Creative challenges: research between the academia and entrepreneurship**". After the short presentation of the SS-ERC project, there was a discussion among representatives of academia, entrepreneurial sector and civil society on the most burning questions and possibilities for effective collaboration in the field of scientific research in the framework of the socialisation processes.

The third national event was organised in Rome by the Science Park Office of the Tor Vergata University, with the external support by Laboratorio di scienze della cittadinanza. The event was structured as a two-day conference (June 17-18 2009), addressing a wide range of issues, revolving around science and technology socialisation, with special reference to the key question of science-based innovation. Titled "**Research and innovation: promoting a new development within knowledge society**", the conference has been structured in two one-day sessions, respectively devoted to the role of innovation in the framework of economic and social development policies and to practices and tools for innovation. The event saw the participation of around 30 speakers, from university, industry, innovation agencies and networks, science centres, local authorities and governmental bodies. During the first session, Stefano Ciccone (Tor Vergata University Science Park Office, SS-ERC Coordinator) gave the introductory speech, while Luciano d'Andrea (SS-ERC scientific coordinator) presented the Handbook. Around 150 people attended the conference.

The fourth national event planned in Spain consisted in a workshop at academic level scheduled for June 24 2009. The workshop was attended by research group of sociologists which performed the experimentation, the two research groups of natural scientists, specialized in the fields of agriculture, biology and chemistry, object of the research activity, and representatives of academia and other research groups interested on debating the theme of "scientific mediation". After the short presentation of the SS-ERC project, there was a discussion among researchers about the potential impact that a "scientific mediation model" for managing teaching, bureaucratic duties and social obligations, may have so that research capacities shouldn't be underperformed.

### Final workshop

The SS-ERC project final workshop was held in Brussels, on June 26 2009. Hosted by the European Economic and Social Committee (EECS), at the Trèves Building (Rue de Trèves, 74, 7<sup>th</sup> floor), the event was focused on the presentation of the Handbook on the socialisation of the scientific and technological research, which represents the main product of the project.

The workshop's title was "**The Socialisation of the European research in the perspective of the Knowledge Society. Interpretations and policies with the contribution of social sciences**". The programme of the event has been as follows.

- **Welcome addresses:** Gerd Wolf, Councillor, The European Economic and Social Committee; Pierre Valette, Head of the Unit L2, DG Research, European Commission; Stefano Ciccone, SS-ERC Project Coordinator, Science Park Office, Tor Vergata University;
- **Introductory Papers:** Luciano d'Andrea, SS-ERC Scientific Coordinator; Wiebe E. Bijker, Maastricht University;
- **Comments on the Handbook:** Sally Wyatt, Virtual Knowledge Studio for the Humanities and Social Sciences, KNAW;
- **Discussion:** Vittorio De Crescenzo, Attaché for research and nuclear issues, Permanent Representation of Italy to the EU; Fabio Feudo, Laboratorio di scienze della cittadinanza; Evanthia Kalpazidou Schmidt, The Danish Centre for Studies in Research and Research Policy, Aarhus University; Eleni Kopanezou, Adviser, DG TREN, European Commission; Jos Leijten, Joint Institute of Innovation Policy and European Association of Research and Technology Organisations (EARTO); Miguel Martinez Lopez, Complutense University of Madrid; Rodolfo Piedra de Furundarena, Representative of the Spanish Office for Science and Technology; Luisa Prista, Head of Unit L4, DG Research, European Commission; Peter Sekloča, Science and Research Center of the Primorska University of Koper; Wim Passchier, Department of Health Risk Analysis and Toxicology, Maastricht University;
- **Conclusions:** Luisa Anastopoulou, Unit L2, DG Research, European Commission.

Around 70 people attended the workshop. A welcome coffee and a light buffet lunch have been offered to speakers and attendees.

For the preparation of the workshop, the following operations have been carried out:

- contacts and agreement with the Presidency of European Economic and Social Committee for its involvement as hosting entity;
- identification of and contacts with the potential speakers;
- production and distribution (May 2009; around 2,500 addresses) of the workshop preliminary programme;
- production and display of posters on the events;
- production and distribution (June 2009; around 2,500 addresses) of the workshop final programme;
- production of the workshop discussion paper;
- preparation of the meeting hall and organisation of the security aspects;
- documentation of the event.

# Main achievements

## Workpackage 1 “Study”

The following achievements of the activities related to WP1 can be mentioned.

### a. Theoretical approach

The project allowed to take a step forward in the development of a **more advanced theoretical approach** for analysing science-society relationships. This approach turns around the concept of socialisation of scientific and technological research and identifies 6 main “socialisation areas”.

- **SCIENTIFIC PRACTICE** - This area includes the set of human and social elements (relational, economic, political, psychological ones and so on) inevitably present in scientific practice (such as in laboratory activities, in interactions between researchers, in solving theoretical disputes etc.), which affect its quality and relevance, although not affecting researcher autonomy.
- **SCIENTIFIC COMMUNICATION** – This area includes both the communication involved in science and technology production (such as for disseminating the results of research activity or for promoting new programmes to be financed), and as the one linked to the valorisation of research and to the construction and dissemination of a generalised scientific culture.
- **SCIENTIFIC MEDIATION** – This area includes the heterogeneous and little formalised set of activities linking scientific and technological research to different social “micro-environments” within which it is produced, such as the informal relations between researchers and technicians, the management of research institutes or projects, the design activities for accessing research funding, the interactions between research and teaching or the occupational dynamics affecting careers in science.
- **EVALUATION** – This area includes the set of practices, programmes or measures aiming to measure and evaluate all the aspects directly or indirectly linked to science and technology (such as the validation of research results, the economic valorisation of these results, the allocation of funds, the forecasting of research programme impacts, etc.).
- **INNOVATION** – This area includes every kind of impact of an economic, social or cultural nature linked to science and technology, regardless of whether it is caused by programmes, measures or actions.
- **GOVERNANCE** – This area includes the set of practices, activities and policies (carried out at international, national or local level) geared to steering scientific research towards objectives of collective interest, to linking science and technology to other sectors of policy intervention (territorial development, environment, health etc.) and to managing, supporting or channelling the participation of civil society and of citizens in decision-making concerning science and technology.

This approach provides the structures needed for an comprehensive analysis, on the one hand, of the main fields in which science and technology meet society and, on the other hand, of the areas in which the contribution of social sciences to the study and interpretation of S&T tend to concentrate.

### b. International literature review and Inventory of the themes

The review of the international literature on “social sciences and the scientific and technological research”(First Research Report) as well as the inventory of the themes dealt with by the social sciences on S&T-related issues allowed the development of an

**accurate picture of the more significant themes** linked to S&T socialisation coped with social sciences.

The review and the inventory took into consideration 9 different disciplinary approaches:

- anthropology, ethnography and cultural studies;
- communication sciences;
- economics;
- evaluation sciences;
- management sciences;
- political sciences;
- psychology;
- sociology;
- science and technology studies (STS).

This is the first attempt aimed at taking into consideration within a unique framework the contribution made to the study of S&T by a so wide range of disciplinary approaches.

#### c. Inventory of social research institutions

For the first time, an **inventory of European social research institutions** specifically involved with the study of S&T-related issues has been developed. Even though the inventory might be enriched and enlarged in the following phases of the project, it already provides a large information base (concerning 217 institutions) for drawing a profile of the main features of the social research on S&T in Europe, both in institutional and in substantive terms.

Together with the inventory of themes, the inventory of the European social research institutions offers a first quantitative background for the study of the dynamics of social sciences involved with the study of science and technology.

#### d. National working documents

The five national working documents delivered in the framework of the workpackage “Study” give a **comprehensive analysis** of the levels and trends about S&T socialisation as well as on the **role and added value of social sciences** in this domain, at least as they are perceived by a qualified set of experts and key persons.

The workpackage “Study”, completed with the draft of the Final Research Report, allowed to produce some important achievements in terms of the generation of new knowledge on socialisation dynamics.

In particular, it made possible:

- to develop, refine and partially validate a model of S&T socialisation, organised in six main areas: scientific practices, scientific mediation, scientific communication, evaluation, innovation and governance;
- to develop a first map of factors hindering S&T socialisation;
- to document the presence of strong tendencies toward a “hypo-socialisation” of science and technology affecting, to varying extent, all the countries considered in the research (Denmark, Italy, the Netherlands, Slovenia and Spain);
- to provide relevant information about the dynamics of social sciences working on S&T-related issues, with special reference to the identification of two “disciplinary coalitions” (the “EP coalition”, including a core of strongly interconnected consolidated disciplines, and namely political sciences, economics, management sciences and evaluation sciences, and the “SA coalition”, revolving around sociology and brings together three “emerging” disciplinary approaches in the S&T field: science and technology studies, anthropology and psychology) and to the use of social sciences in the field of S&T, i.e.

the widespread interpretative use (social sciences interpret S&T and the relations between science and society), the less widespread functional use (social sciences provide useful tools and knowledge for handling, steering, measuring and guiding S&T); the rare substantive use (social sciences cooperate with natural sciences on common research programmes) and the sporadic practical use (social researchers play professional type roles concerning, for example, science communication, research management or the mediation of conflicts on technologies);

- to document the increasing engagement of social sciences on S&T as well as the limited impact and influence on scientists and policy makers of the knowledge generated by social sciences on S&T;
- to show the low level of interaction between natural scientists and social researchers as well as some of the causes of this phenomenon.

## **Workpackage 2 “Experimentations”**

The experimentations has been successfully planned and activated in Italy, Spain, Denmark and Slovenia. In all experimentations, the phase of study has been completed and the process of definition of the pilot initiatives has been started.

It is too early for evaluating the outcomes of the experimentation in terms of knowledge generation on socialisation dynamics and of directions useful for policy making. Nevertheless, on the basis of the first results, some elements can be already stressed.

- At the first glance, information and data emerging from the experimentations seem to suggest that the problem of an inadequate socialisation of science and technology seems to be largely experienced by the actors involved (researchers, university officials, etc.). To certain extent, problems related to socialisation appears to be even more serious than expected.
- The experimentations raised interest and expectations among the actors involved. In the following phases of the experimentation, it will be important understanding whether these interest and expectations will result also in a good level of mobilisation and practical involvement.
- At least in two cases out of four (Italy and Slovenia), experimentations are expected to activate a process of change which could last beyond the project's end.
- On the basis of the first exchange among the project's partners, the phase of in-depth study is already providing useful elements for a theoretical refinement of the socialisation-based approach and its more effective orientation towards policy making.

The workpackage “Experimentations”, allowed producing some achievements in terms of the generation of new knowledge on socialisation dynamics, in addition to and completion of those previously gained through the workpackage “Study”.

In particular, it made possible to test forms of cooperation between social researchers and natural scientists/engineers, allowing to map main obstacles and opportunities and to improve the model of S&T socialisation, with special reference to:

- the pivotal role played by research groups in socialisation dynamics in the context of scientific practices;
- the dimensions involved with scientific mediation (governing, teaching, networking, designing/promoting, managing knowledge);
- the weight of micro-interactions in scientific communication, the hidden models (internalist, neutral, externalist) used by policy makers in accessing and interpreting scientific data in the framework of scientific evaluation:

- the complex fabric of social, cultural and organisational factors influencing university-industry relationships within innovation programmes.

Moreover, the experimentation provided a deciding set of information useful to single out and map the practical implications of the model in terms of policy making.

The final output of the workpackage was represented by four national reports describing experimentation results.

### **Workpackages 3-4 “Handbook”**

The production of the Handbook on the socialisation of scientific and technological research can be considered the main achievement of the project.

The relevance of this product can be appreciated from three different standpoints.

- **Providing a model.** For the first time, the handbook offers a model to approach social components implied with scientific and technological research as a whole and within a single analytical framework, providing a unique “profile” of social dynamics embedded in the research production and use.
- **Speaking to policy makers and stakeholders.** The handbook is conceived in a way allowing research actors and stakeholders to increase their awareness on and to develop appropriate measures for coping with social dimensions concerned with S&T research, fully using relevant knowledge gained by social sciences, usually underrated by or scarcely accessible to those actors.
- **European policies.** Finally and more specifically, the handbook provides a support in terms of knowledge, interpretations and policy orientations to the policy action increasingly promoted by DG Research aimed at favouring a closer and sounder relationships between science and society (special reference is made here to “Science in Society” programmes).

The **Handbook on the Socialisation of the Scientific and Technological Research** (S&T) represents the final product of the SS-ERC project. It collects and melts the results of the previous phases of the project and, in particular, a research on the current trends in S&T carried out in five EU member states (Denmark, Italy, the Netherlands, Slovenia and Spain) and five experimentations conducted in four countries (one in Denmark, two in Italy, one in Slovenia and one in Spain) where forms of co-operation between social researchers and natural scientists/engineers have been tested.

The Handbook is aimed at providing research actors (scientists, administrators of research institutes, policy makers, entrepreneurs and their representatives, leaders of civil society organisations) with theoretical and practical orientations for identifying, interpreting, managing and driving the profound changes that are presently modifying the way in which science and technology are produced, communicated and valorised in view of common economic and social objectives.

### **Workpackages 5 “Dissemination”**

The overall aims pursued through the dissemination activities are mainly three:

- disseminating the project’s results;
- increasing the awareness of actors and stakeholders on the relevance of the contribution by social sciences in the advancement of the European research;

- fostering an open debate on S&T socialisation, involving social researchers, natural scientists and practitioners.

During first reporting period, as for these aspects are concerned, the objectives were those of **establishing the infrastructures** for and **starting with the dissemination activities**. An effort have been made, in order to enlarge the target of the dissemination activities, to improve the dissemination strategy (for example, promoting a two-way communication system) and to strengthen the diffusion of the project's deliverables.

During the second reporting period, a process of refinement and improvement of the dissemination and sensitisation strategy of the project has been started up.

Particularly important it has been the organisation of the Seminar "Social Sciences for the Scientific and Technological Advancement. Dialogue on governance and development policies of the European Research Area", held in Brussels at the European Parliament on October 16 2007. The initiative allowed to discuss, for the first time, on S&T socialisation with policy makers, mainly working at the European institutions, and to gather relevant information about the different points of view, needs and expectations on these issues at the policy level.

Moreover, also thanks direct contacts with and the support of the DG Research, some important steps forward has been made towards the development of products specifically aimed at policy makers and other relevant stakeholders. In particular, the process of development of the Project Policy Brief allowed to define a way for "communicating socialisation-related issues" which could be attractive for and largely understandable by non-experts in social sciences. This could be fruitfully represent an important base for the drafting of the Handbook on S&T Socialisation.

During the third reporting period, dissemination and sensitisation activities were put at the core of the project activities. The aim pursued was that of making accessible, both in technical and communicational terms the project outputs to targets not accustomed with the debate on S&T within social disciplines but having responsibilities and/or interests related to scientific and technological production.

In this perspective, the efforts made produced some important results, which can be fully appreciated in the middle run. However, some points can be underlined:

- the introduction of the concept of S&T socialisation allowing to politically approach a broad range of phenomena previously dealt with under different headings and by different circles of experts and policy makers;
- the production of an interpretative scheme to be easily adopted by policy makers and stakeholders at different levels;
- the production of a set of dissemination tools (Handbook, Highlights, Website) potentially reaching a vast audience able to communicate socialisation-related issues to non-expert actors;
- the involvement of key actors within DG Research on a debate on S&T socialisation, providing them with ideas and tools for strengthening the action already carried out by the same DG in addressing social issues related to S&T and in creating the conditions for a closer cooperation between natural sciences/engineering and SSH.

# Section 2 – Dissemination and use

## Dissemination of the Consortium

A Web site for the SS-ERC project been created. The web address is:

<http://www.techresp.eu> .



All information concerning the project progress, main results, and available reports will be displayed as the project progresses.

A quarterly Newsletter is actually delivered to a mailing list of 1.600 experts (expected 5.000 before the end of the project) informing about project' activities

Logo adopted on official documents:



Following is the table form including held dissemination activities during project' duration:

| <b>Planned dates</b> | <b>Type</b>  | <b>Type of audience</b>                             | <b>Countries addressed</b>      | <b>Size of audience</b>     | <b>Partner involved</b> |
|----------------------|--|---|---------------------------------|-----------------------------|-------------------------|
| September 2006       | Project web-site   | Public  | Europe                          | Public                      | TVR                     |
| September 2006       | Project Presentation Note  | Public  | Europe                          | Public                      | LSC                     |
| Quarterly            | Project Newsletter   | Direct e-mailing                                    | Europe                          | 2.800 at the end of project | ALL                     |
| 17-18 February, 2007 | Conference - "The Humanities and Social Sciences on the Periphery: Sciences or Technocratic Instruments?"                                | RTD Institutions                                    | Slovenia                        | 100                         | UPZRS                   |
| 19 March 2007        | Workshop METRIS  | EC Officials – EU Funded Projects Leaders in SSH    | Europe                          | 20                          | LSC, UA-AR              |
| October 2007         | Seminar – "Social Sciences for the scientific and technological advancement. Dialogue on governance and development policies of the ERA. | EC Officials – EU member states delegation – EU MPs | Europe                          | 100                         | LSC, UM-TSS             |
| January 2009         | Publication of Policy Brief 1  | Public Institutions                                 | Europe                          | Public                      | ALL                     |
| March 2009           | Publication of Project's Brochure  | Public Institutions                                 | Europe                          | Public                      | ALL                     |
| March, April 2009    | 4 Conferences in each of participating country   | Research  | Italy, Spain, Slovenia, Denmark | 200                         | ALL                     |
| June 2009            | Publication of Handbook and Highlights   | Research  | Europe                          | Public                      | ALL                     |
| June 2009            | Seminar in Brussels for Project' presentation of results (Folder)  | Public Institutions                                 | Europe                          | 60                          | ALL                     |

For further information please consult Plan for Using and Disseminating Knowledge.

**Official published document, illustrating all results and outputs from project's activity, is the Handbook on the Socialisation of Scientific and Technological Research, presented during final seminar held in Brussels on June 2009.**