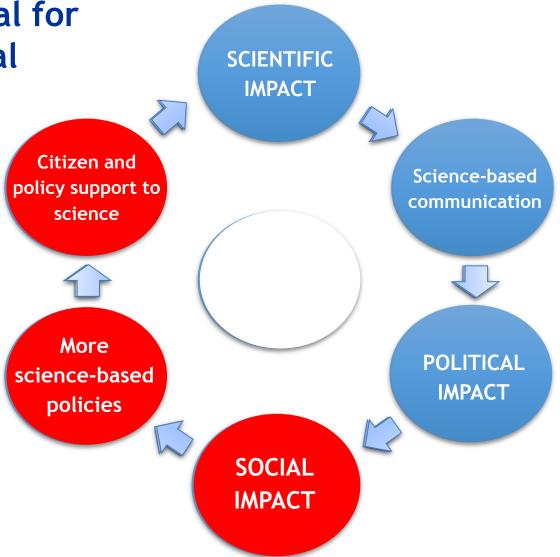
Assessing scientific, political and social impact of research and widening actions. Explanation and practical cases

Workshop: The key factors for impact in strategic research and innovation funding in a view of widening actions
Tallinn, 10-11 October, 2017

Marta Soler-Gallart, CREA Community of Research University of Barcelona http://crea.ub.edu

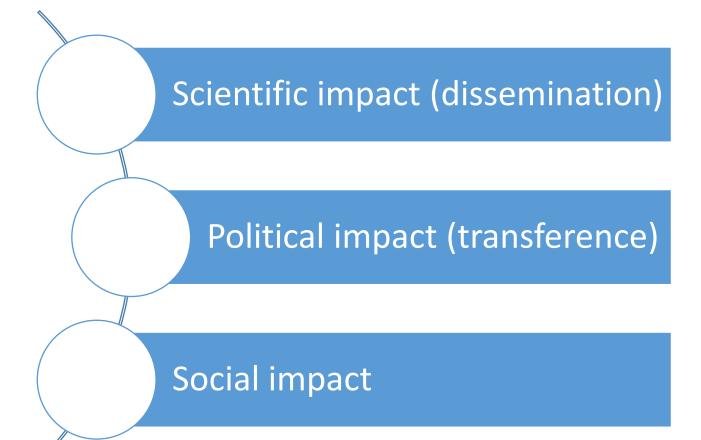


Social impact is crucial for the social and political support to science

















Political impact (transference)

Social impact

When the scientific community (peers), but also institutions, NGOs and citizens and large get to know the research results.

When policy makers, institutions, companies and citizens at large **use the research**results to plan their interventions (or develop products).

improvements experienced by individuals and society (according to societal objectives) resulting from the transference of the research results.











Impact evaluation (last call FP6, FP7) Ex-post evaluation FP7, SSH

- On-line questionnaire, 473 SSH projects in FP6, FP7, HERA, NORFACE and ERC-Ideas
- Analysis of CORDA data
- Analysis of 162 SESAM reports from FP7 projects
- 26 interviews with main researchers
- 15 interviews with Officers from DG Research
- Bibliometric analysis of a projects' sample
- Webometric analysis of FP6 and FP7 projects

Case studies on Successful and Non successful FP7 SSH projects

- 14 Top Success and 8 Non successful projects
- Interviews to researchers, policy makers, stakeholders, and end users
- Analysis of documents

Comparative policy analysis of SSH National Evaluation Frameworks



- 12 case studies of European member states and Australia, US, Brazil
- 102 interviews with representatives of national agencies (i.e. NSF, HEFCE, ANR, CNPq etc.) and stakeholders



Interim evaluation H2020, Challenge 6



- Analysis of CORDA data
- On-line questionnaire (on steps done and planned to achieve social impact)
- Analysis of policy and H2020 documents

Development of impact indicators

- Integrative panels: scientific, political and social impacts
- Delphi panel on political impact
- Piloting on selection, monitoring and evaluation of SSH research in National Agencies (foreseen)

Research Evaluation, 2017, 1–11 doi: 10.1093/reseval/rvx025 Spec Issue



A review of literature on evaluating the scientific, social and political impact of social sciences and humanities research

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Abstract

Recently, the need to contribute to the evaluation of the scientific, social, and political impact of Social Sciences and Humanities (SSH) research has become a demand of policy makers and society. The international scientific community has made significant advances that have transformed the impact of evaluation landscape. This article reviews the existing scientific knowledge on evaluation tools and

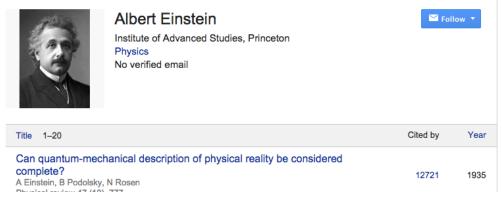
^{*}Corresponding author. Email: emanuela.reale@ircres.cnr.it.

Scientific impact assessment: metrics

- ✓ Impact factor (journal level)
- √ H-index (author level)



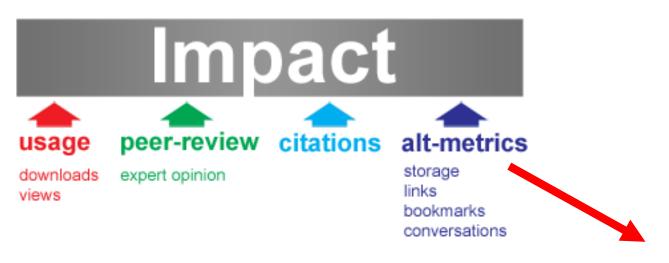






Scientific impact assessment: metrics

✓ Altmetrics (article level)





















citeulike [











Scientific dissemination (but impact?)

✓ Outreach activities from scientists to broader publics





www.nezeh.eu

March 2016 - PR No. 7

PRESS RELEASE

"NEARLY ZERO ENERGY HOTELS FOR ACHIEVING LOW CARBON GROWTH IN EUROPE"

High Level Event at the European Parliament - 17th March 2016 in Brussels

The neZEH High Level Event "Nearly Zero Energy Hotels for Achieving Low Carbon Growth in Europe" hosted by Member of the European Parliament Mrs. Maria Grapini (S&D Romania) took place at the European Parliament in Brussels on the 17th of March 2016, with great success.

The event aimed at steering the attention of regional, national and European policy makers to commit to nearly zero energy growth in the tourism sector, to reduce legislative barriers and to introduce supportive measures. More than 65 participants took part of the event, representing policy makers, as well as private sector representatives from the tourism and energy efficiency arena.

The distinguished panellists, composed of Members of the European Parliament from Romania, Hungary and Croatia, the European Commission Directorate General for ENER and GROWTH, the Executive Agency for Small and Medium-sized Enterprises (EASME), the Region of Île-de-France in France, the Croatian Ministry of Tourism, UNWTO, the European Hotel Association HOTREC and NECSTouR, shared their reflections and proposed suggestions on how to scale up neZEH results and move from 16 pilot projects to a critical mass of hotels achieving neZEH status in Europe.

A fruitful discussion was held around the working version of the neZEH project's Position Paper







Social and political impact assessment

- ✓ Qualitative data (i.e. case studies) most used for evaluating social impacts and broader benefits for society
- ✓ Narrative descriptions of the potential (ex-ante) or achieved (ex-post) benefits for society.
- ✓ Descriptions try to include as robust as possible evidence of these benefits

Assessment tool	Method
Payback Framework	Using mixed methods case studies to gather the policy benefits from undertaking research between researchers and different actors, such as policy makers, stakeholders, and social movements
SIAMPI Social Impact Assessment Methods for research funding instruments	Using case studies to assess the "productive interactions" between researchers and stakeholders generating socially relevant applications
Agora Model	Multi-actor interaction to improve science and society relationships engaging scholars and stakeholders in open debates
Opportunity approach	Analysing opportunities that are intended, provided, perceived, and mobilized by policy actors and beneficiaries of research programmes using case studies
Successful actions	Checking actions based on results coming from research efforts that were successfully implemented thus generating efficiency and equity through participatory methods and techniques.

Social impact assessment. Methods:

- ✓ Case studies: Units are required to provide societal outputs and narratives
- ✓ Case studies: Involve self-assessment and Panel expert evaluation
- ✓ Identification of "Success stories"

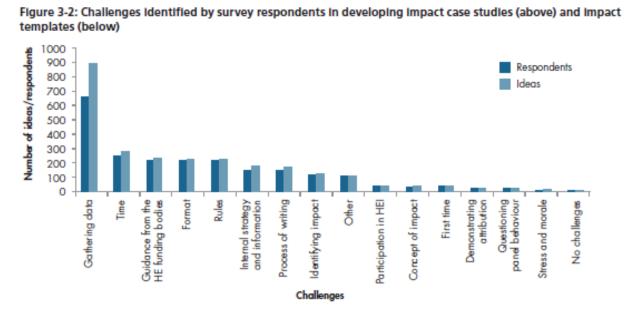




Social impact assessment. Methods:

the basic principle is that peer review lies at the heart of the evaluation process, but that peer review needs to be informed by whatever data is available and useful (Interview, responsible at HEFCE, UK)

In REF2014, the biggest challenge in preparing impact case studies was the requirement to 'evidence' impact (gathering data)



Manville, C. et. Al. (2014). Preparing impact submissions for REF 2014: An evaluation. RAND Europe, p. 16



- Initiative to create a repository of data and tools that will be useful to assess the impact of federal R&D investments.
- Focused (Level I) on job creation, using data from research institutions' existing database records.
- Goal: to utilize existing administrative data from federal agencies and match them with existing research databases on economic, scientific and social outcomes.
- From January 2016, redirected to Federal RePORTER is an initiative of STAR METRICS® to create a searchable database available to the public.





Participation Agreement



Participation Guide



Common Data Challenges



Indirect Cost Proposal



Data Dictionary



Job Classification Guidance



Employment Calculations



Technical Specifications



Join InCommon



Social impact assessment. Methods:

- **✓ SISM: Social Impact in the Social Media**
- ✓ Identify what is relevant for citizens and society
- ✓ Identify quantitative and qualitative evidence on how research outcomes are shared in social media
 - ✓ Two ways: 1) define keywords from projects' outcomes2) use project acronym











Top Down Approach

- List of keywords
- Social media: Facebook, Twitter,
- Online sources: Youtube, Wikipedia

We can search for keywords from projects and programme priorities.



Bottom-up Approach

- List of topics which emerge from primary and secondary sources, from citizens
- Social media: Facebook, Twitter
- Online resources: Wikipedia

We can identify topics which are relevant for society but not covered by programmes.













Social Impact Open Repository

Responds to the open demand of measurable parameters of social improvements generated by scientific projects, promoting a necessary alternative to the stagnation of scientific results and enabling real social impact.

Non-profit initiative launched by the IMPACT-EV consortium (EU) http://www.ub.edu/sior/





SOCIAL IMPACT CRITERIA



- Connection to UN Sustainable development Goals, EU2020 targets or other similar official targets
- Percentage of improvement achieved in relation to the starting situation
- Transferability of the impact, the actions developed based on the project's findings have been transferred to other contexts besides the original one
- Publication in scientific journals (with a recognized impact), governmental or nongovernmental official bodies
- Sustainability, the impact achieved by the action developed based on the project's findings has showed to be sustainable throughout time

Social Impacts definitions



Using the conception of Social Impacts as described in the EC Better Regulation "Toolbox":

- Economic impact
- Societal impact
- Environmental impact and
- Human rights impact





Search Upload About Criteria Help Log In

Atapuerca project



Creation of employment, economic growth and cultural development in the region

1. Creation of employment

Evidence:

1130 Jobs

Creation of 11 workplaces in different categories at Universitat Rovira i Virgili (Tarragona, Spain) between 1995 and 2004 (10 of them were new creations with permanent contracts linked to the project).

3 years Predoctoral Grants provided by Atapuerca Fundation during 2000-2004.

Source: Official report (external from research team)

nup://www.icvl.es/icvl/patrimoniocultural/atapuerca/Documentosonal_ampanan.pd

2. Creation of intangible cultural happiness

Evidence:

Around 815,700 visitors

The attractiveness of Atapuerca connects directly to the meaning that visitors attribute to humanity and its origins. The intergenerational groups (like families) have an incredible opportunity to talk and transmit to the youngest important issues like the relations between sciences, religions and ideologies.

Source: Official report (external from research team)

http://www.jcyl.es/jcyl/patrimoniocultural/atapuerca/DocumentosQueAcompanan.pdf



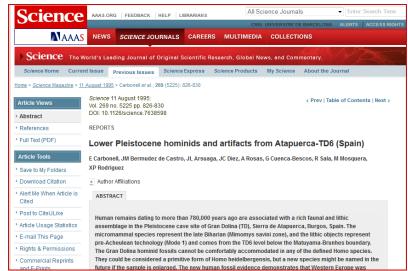














Oldest hominin DNA

sequenced Max Planck

researchers sequence the





Creation of employment



Museum of Human Evolution (created in 2010):

- 500.000 visitors
- More than 1130 new jobs
- Economic impact: 53 million €



Noticias agencias

Visitas a Atapuerca se duplican tras apertura del Museo de Evolución Humana



• Creation of Companies with core business (CNAE Activity) related to the Atapuerca findings (20 companies):

SCHOLA ACTIVA SIERRA DE ATAPUERCA SL



• Development of industrial and ICT sector:





SCHOLA ACTIVA SIERRA DE ATAPUERCA SL en Atapuerca

• Creation of other **new jobs** in the region from tourism development and other services related to this sector.





Farm School, Youth Hostel, rural houses, restaurants, etc...

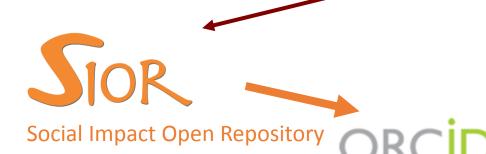
• Promotion of economical growth in the region.

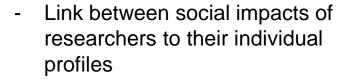






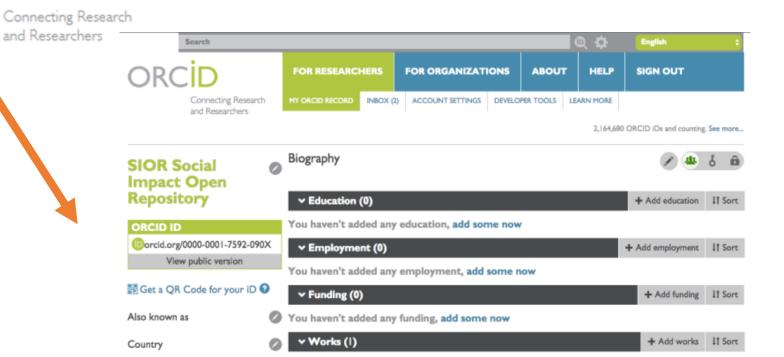








- Link between social impacts of research projects and entries in Wikipedia
- Collaboration to open peer review of social impact to all citizens







The open repository scores research on metrics such as social improvement, transferability to diverse populations or social contexts, and sustainability.

SIOR data are also used to back research proposals.

Nature, 528, 193 (Dec 2015)



November 8, European Parliament





Recognizing fundamental contributions and trajectories



Research Enabling Social Impact (RESI):

The cumulative impact of the theory and research that has contributed to further research which in turn has achieved social impact.

In order to find a solution there are many research projects and scholarly work exploring different avenues. They have all been necessary to find the solution, facing both failures and successes on the way.

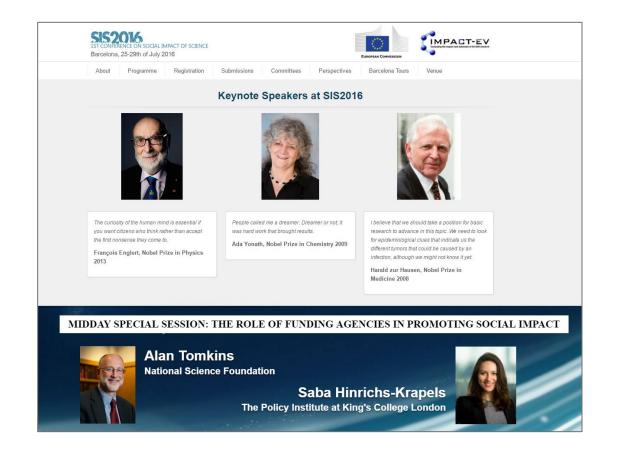


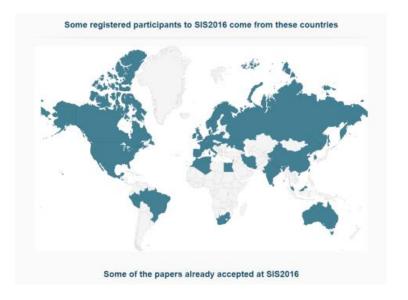




SIS2016 1ST CONFERENCE ON SOCIAL IMPACT OF SCIENCE

Barcelona, 25-29th of July 2016





- Researchers from all disciplines, 40 countries
- Agencies (NSF, RCUK, DG.RTD,...)
- Publishers (PLOS, Nature, Thomson Reuters, ...)

EXAMPLE 1:

Social Impact of Research: combating cancer disease

Research Impact enabling Social Impact: research about the possible connection between infection agents and human cancer.



Harald zur Hausen **Nobel Prize in Medicine** 2008

"In the late 1960s Herpes simplex type 2 (HSV-2) emerged as the prime suspect based on some seroepidemiological observations. I had asked my colleague Heinrich Schulte-Holthausen to use the same technique to search for HSV-2 sequences in cervical cancer biopsies. All attempts, however, failed."

Later "Up to 20% of sera from human adults also revealed neutralising antibodies to this virus. Our attempts to isolate a human correlate, however, failed."

"I have devoted my scientific life to the question to what extent infectious agents contribute to human cancer, trusting that this will contribute to novel modes of cancer prevention, diagnosis and hopefully later on also to cancer therapy. I am of course pleased to see that at least part of this programme has been successful."







EXAMPLE 2:

Social Impact of Research: 1) creation of employment and economic growth in the region and 2) creating intangible cultural happiness, from the discovery of homo antecessor and the related Museum of Human Evolution.

Research Impact enabling Social Impact: Groups of paleontologists working in Atapuerca Mountains since 1863.



Atapuerca Project

1863: the first discoveries of fossils were found.

1976: first human remain is found

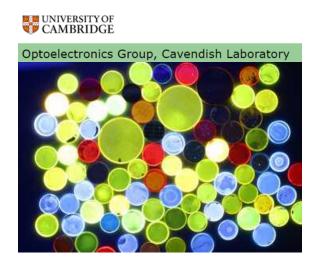
1997: discovery of a new human species: *homo antecessor*

More than a century of research has been developed in Atapuerca, which eventually enabled the discovery of homo antecessor, as one of the earliest known human species in Europe.

EXAMPLE 3:

Social Impact of Research: Polymer photovoltaic diodes **promise to enable** very low cost solar cells. Then, **potential to succeed** in current lighting technologies.

Research Impact enabling Social Impact: Many groups and studies are working to identify alternative energy sources.



The strong focus of our activity is on the scientific understanding of the electronic properties and fundamental physics of this novel class of semiconductors. Conjugated polymers are low-dimensional semiconductors with strong electron-phonon and electron-electron interactions, and their physics differs dramatically from those of conventional inorganic semiconductors such as silicon. It is a field where new fundamental scientific discoveries are still waiting to happen.

Optoelectronics Group Cavendish Laboratory, University of Cambridge

What's next?

- Need to improve the gathering of evidences on social impact (difficulties for doing by the researchers themselves)
- Need to improve peer review procedures
- Need to connect research to improvements in citizens' lives



Register of Commission expert groups and other similar entities

Subscribe to this group

Name	Nationality
AUGUSTYN Anna Maria	Poland
CHEVAL Sorin	Romania
DE GENNARO Michele	Italy
FLECHA José Ramón Chair	Spain
KODRATENKO Irena	Belgium
MAIMETS Toivo	Estonia
MOHLER Christine	Germany
PALAT Milan	Czech Republic
PASKALEVA Krassimira	Bulgaria
PEJIC BACH Mirjana	Hungary
PLESCAN Angela Christina	Romania
RADAUER Alfred	Austria
SORENSEN Karen Hanghoj	Denmark
SOUTHWOOD David	United Kingdon
VALTA Katerina	Greece
VAN DEN BESSELAAR Peter	Netherlands
WIDERA Barbara	Poland

Details	Additional Info	rmation	Subgroups	Statistics	Members		
	Name:	_	roup on evaluand ex-post e				Active
	Abbreviation:	EG METH	0				
	Policy Area:	Research	and Innovatio	n			
	Lead DG:	RTD - DO	RTD - DG Research and Innovation				
	Type:	Formal, P	Formal, Permanent				
	Scope:	Limited					
	Mission:	The Expert Group on the Evaluation of Social Impacts of EU Framework Programmes will identify, adapt and/or develop methodologies for the assessment of the social impacts since FP4 until now using a portfolio analysis.					
	Task:	Assist the Commission in the preparation of legislative proposals and policy initiatives					
	Composition:	Environment, Space and Satellites (research), Agriculture, Statistics, Climate, Other (Big data, evaluation, Social assessment, Private consumer engagement and Energy, Energy, Data analysis and transport, Micro, macro-migration, labour market, ICT, creative industries, SMEs, Raw materials, IT and health, Impacts and micro-steal, Data mining, resource efficiency, Exports and competitiveness)					
Public	ation in RegExp:	24 May 2	016				
	Creating Act:	Commiss	ion Decision C(2016)1349 -	9 March 201	5	
	Link to Website:	http://ec.europa.eu/programmes/horizon2020/en/ 명					
	Last updated:	01 Jul 20	16				



ANEP (National Agency of Evaluation and Prospective)

 Interviews with the 50 responsible researchers of the different scientific areas of ANEP, to identify research projects and groups achieving social impact in Spain

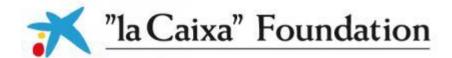


Agència de Gestió d'Ajuts Universitaris i de Recerca

- Modification of the Guide for Proposers for Beatriu de Pinos Postdoctoral Reseach Grant in relation to social impact
- Inclusion of monitoring system to support researchers gathering their social impact.

DG Scientific & Technological Research General Secretariat of Research Projects

- Modification of the Guide for Proposers
 (National Plan RTD) in relation to social impact
- Inclusion of social impact criteria in the Guide for Evaluators (National Plan RTD)



- Modification of the Guidelines for Evaluators for Recercaixa Programme, in relation to social impact. Webinar training for evaluators.
- Inclusion of monitoring system to support researchers gathering their social impact.

	What information we gather from projects	What information is missing	How can we monitor this impact? RESEARCHER DRIVEN	How can we monitor this impact? INSTITUTION DRIVEN
SCIENTIFIC IMPACT (science dissemination)				
POLITICAL IMPACT (transference)				
SOCIAL IMPACT (i.e. societal, economic, environmental, human rights)				