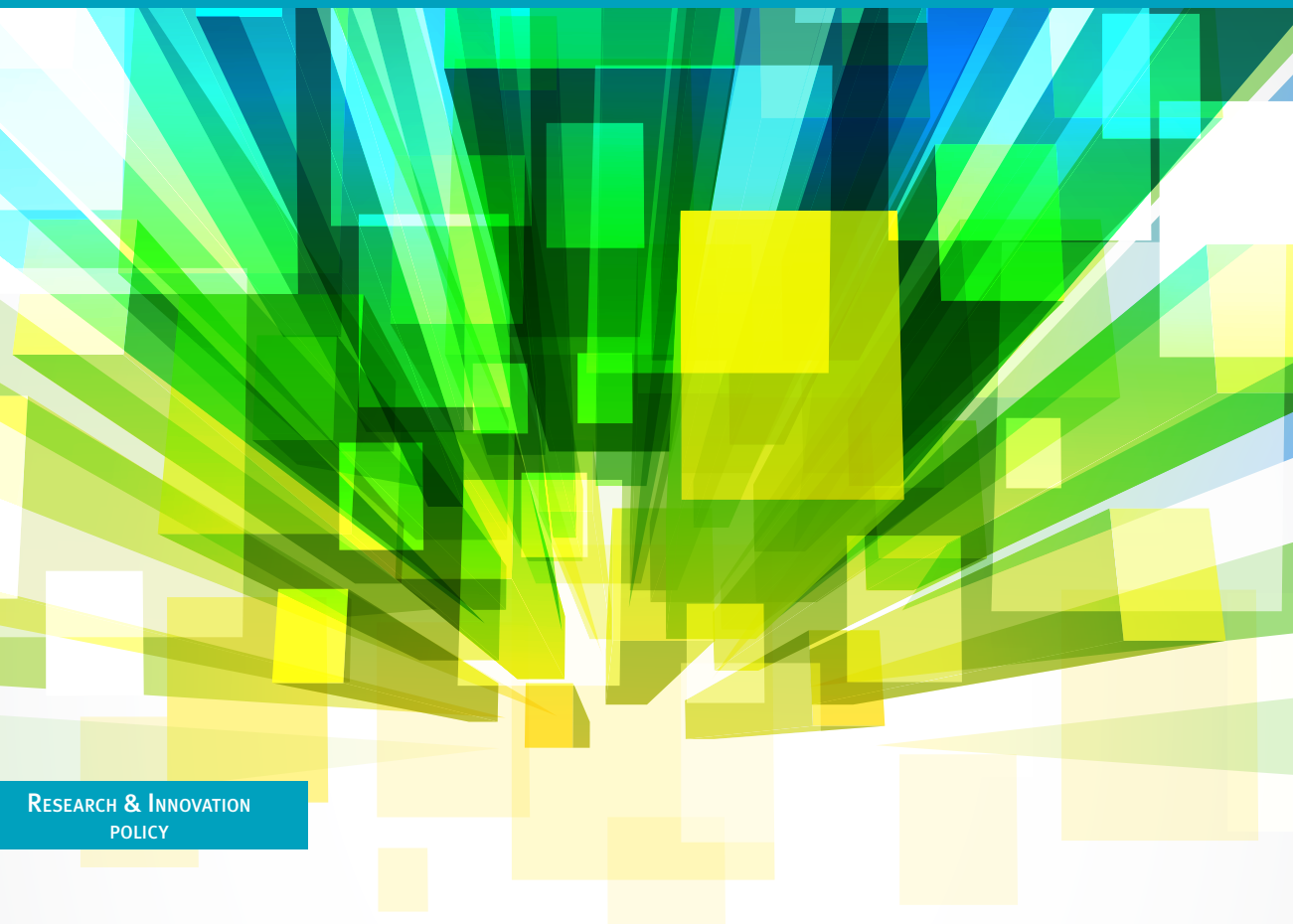
EUROPEAN COMMISSION / European Research Area / 7th Framework Programme

National Open Access and Preservation Policies in Europe

Analysis of a questionnaire to the European Research Area Committee



RESEARCH & INNOVATION POLICY

EUROPEAN COMMISSION

Directorate-General for Research and Innovation
Directorate B – European Research Area
Unit B.6 – Ethics and gender

Contact: Jean-François Dechamp

Office SDME 03/16
B-1049 Brussels

Tel. (32-2) 29-61462
Fax (32-2) 29-84694
E-mail: jean-francois.dechamp@ec.europa.eu
RTD-OPEN-ACCESS@ec.europa.eu

EUROPEAN COMMISSION

National open access and preservation policies in Europe

Analysis of a questionnaire to the European Research Area Committee

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Contents

Foreword

Researchers rarely start from scratch but build on data that has already been generated, and on results that have already been published. In today's "internet age" researchers are faced with new challenges for sharing this type of scientific information in digital form. For example, what data to keep, where and in what format? And the ever-increasing subscription costs of scientific journals makes easy access to peer-reviewed articles difficult. All this can lead to wasteful duplication of research – much of which was publicly funded in the first place. As we move towards Horizon 2020 - the next Framework Programme for Research and Innovation and the completion of the European Research Area, we must start thinking about ways in which knowledge circulation can be improved.

Knowledge circulation is not a trivial issue. It includes access, dissemination, preservation, as well as use and re-use of scientific information. Open access – the practice of granting free-of-charge access over the internet to research results – is central to knowledge circulation. Studies show that open access leads to better visibility and better impact of research results and that it has the potential to save governments and research institutions tax payers' money. Open access is not a means in itself, but a gateway to the exploitation of science and research. Despite the recognised benefits of open access, its implementation is a challenge. For instance, it is not yet recognised at all levels that the dissemination of research results (including costs related to open access) requires specific and sustained investment. A further difficulty is the lack of concrete support for researchers to practice open access. Open access also raises legal issues, linked in particular to how researchers exercise their copyright, as well as technical questions such as the setting of common standards for repositories that host open access material.

This report gives an overview of how open access is developing in the European Research Area. It is based on a survey conducted via the European Research Area Committee. It shows that open access is backed by a growing number of universities, research centres and funding agencies across Europe, and it highlights the dynamic growth of open access. It also underlines, however, that national initiatives and practices are still fragmented, thus preventing the European Union from realising its full research and innovation potential.

We have excellent researchers in Europe and I am determined to give them the conditions they deserve. Open access is one of these conditions. The European Commission is committed to sustaining open access, in line with specific statements made in the EU Flagship Initiatives Innovation Union and Digital Agenda. We need a European Research Area that is interconnected, structured, mobile and efficient; a unified research area that brings together people and ideas in a way that catalyses science and world-leading innovation. Open access can help make this vision become a reality.

Commissioner for Research, Innovation and Science

Máire Geoghegan-Quinn

Executive summary

Access and dissemination

It has been extensively demonstrated that widespread and efficient access to and dissemination of scientific information (in particular journal articles and research data), is imperative for all parties involved in research and innovation activities. New information technology tools have evolved and will continue to change the way in which researchers can access, share and use scientific information among their peers, as well as disseminate it to the public-at-large. Much of the debate revolving around access to scientific information has focused on peer-reviewed scientific publications in journals (publications resulting from research projects partly or fully publicly funded), but further areas are also crucial, for example doctoral and masters theses and research data. Research results are generated and circulate within specific environments and raise specific legal issues such as copyright and VAT rates for electronic products. Moreover, repositories play a crucial role in collecting, preserving, and disseminating digital intellectual output from research. Other issues deal with access and dissemination activities at national level. They include overall national policies regarding publications and data, the development of repositories, and stakeholder involvement.

Implementation of the 2007 Council Conclusions

In addition to asking respondents to describe the policies in place for dissemination of and access to scientific information, some closed questions were included in the survey, for example whether, generally speaking, the situation regarding open access has improved since 2009 (previous survey), and whether the country has experienced problems implementing the 2007 Council Conclusions. The general impression is that, compared to 2009, the situation has improved in many countries. Only very few respondents have replied that there has been no improvement at all in their country.

General policies and strategies

Respondents were asked to describe the policies in place for dissemination of and access to scientific information, including information on how these policies are financed. A growing number of countries has put or is currently putting in place clear strategies regarding access and dissemination, usually with a focus on open access or repositories. Open access has been incorporated into national strategy for science and research in some countries. As regards infrastructure, national archives for open access content or national harvesting systems that can access open access material through national portals have been set up in some countries.

Open access to publications resulting from publicly-funded research

Open access refers to free-of-charge accessibility of outputs, e.g. research articles, over the internet. A frequent bottleneck to achieving a more widespread use of open access and faster development of policies is lack of awareness and understanding of open access amongst researchers and policymakers. The questionnaire asked respondents to describe policies and other arrangements in place aiming to provide open access to peer-reviewed scientific journal

articles resulting from public research funding. Some countries have made considerable progress on open access, while others are slower to initiate developments. At institutional level, individual universities have launched projects on open access, and there has been progress on the development of deposit and curation points. Some countries have high-level policies on open access and preservation. At national level, arguments for open access have successfully been taken to the governmental level in some countries, and in some cases even incorporated into national strategy for science and research. Where national-level or institutional-level policies have been adopted, there is success in increasing the amount of material openly available and in raising awareness of open access amongst authors. Policies usually make the case for open access and are accompanied by guidance to researchers. However, a relatively good level of policy development does not mean that open access has been fully achieved in the European Union.

Open access to other publicly-funder research results

While the debate on open access has up to now focused on scholarly literature, research data (be they numerical, graphical, audio, video files, etc.) and the general objective of gaining open access to data ("Open Data") is increasingly in the spotlight : Open Data. The importance of research data is likely to grow in the coming years as information society tools have made it possible to access data directly, and because new information services are combining journal articles and data, hence applying new search techniques such as data mining. There are already many policies from research funding agencies covering the accessibility of data created during work they have funded, and the number is expected to grow. Further developments are linked with e-science infrastructures and with relevant intellectual property rights issues. Policies on open access to research data remain less developed than policies on open access to publications, but the general concern for unlocking the full value of scientific data is growing, as reported in the 2010 Final report of the High Level Expert Group on Scientific Data 'Riding the wave: How Europe can gain from the rising tide of scientific data'. Several respondents referred to European projects such as EUROPEANA and e-infrastructures, activities that are typically covered in the Commission by the Directorate-General for Information Society and Media (DG INFSO). Some respondents also mentioned activities in the European Bioinformatics Institute (EBI), which is a centre for research and services in bioinformatics that manages databases of biological data and provides free access to all its data resources. Less in the public eye than publications and data are doctoral and masters theses. Open access to this highly valuable resource is progressing rapidly in Europe and is encountering fewer obstacles than publications and data.

Repositories of scientific information

Well-designed e-infrastructure can enhance access and dissemination. In infrastructural terms, Europe is doing well. Replies to the question about repositories show a great deal of successful national activities, and many of these look to standards developed at European level. There are too many initiatives in Europe to be reported in an exhaustive manner, but they are all paving the way towards open access. Several countries have created national repository infrastructures. As reported by one respondent, this is both a complex and dynamic situation since the infrastructure is provided and supported by a number of independent organisations, including funders and universities. As illustrated in the comment of another respondent, there are many important initiatives that are growing fast, but they can easily remain 'islands' that are not sufficiently interconnected.

Specificities of research results

The Internet makes instant access to and dissemination of information possible. New information and communication tools offer innovative ways to add value. The rapidly increasing use of digital content in research and in the dissemination of knowledge has quickly become a main characteristic of modern science, challenging traditional ways in which research is conducted. Repositories are important places to store knowledge, but scientific journals still hold a central role within the scientific information system. The peer review process remains the central quality control mechanism, and journals remain a main vehicle for spreading research results. Technological changes have offered publishers tremendous opportunities that they have embraced in a creative way, but they also brought about complexity in areas such as copyright and VAT rates. Business relationships with publishers remain of a complex nature for all actors involved. Despite the fact that most governments keep investing in the dissemination of scientific information, research libraries often have to find creative solutions with a limited budget, and despite their increasing responsibilities in access and dissemination. Moreover, journals are still central for scientists' careers in connection with journal Impact Factors, the criticised, but much-used bibliometric indicator. Finally, open access is developing rapidly but ways of measuring its growth and impact are still under development.

Long-term preservation

Long term preservation is a closely related, yet distinct issue from access and dissemination. Preservation concerns ensuring the long-term storage, care and continuing free accessibility of (research) outputs. It is something that has largely fallen to national libraries to tackle, or other national-level organisations. There are also significant players in the area of preservation on an international scale. While many of the responding countries have put in place notable initiatives or strategies regarding the digital preservation of cultural heritage in general, specific attention to the preservation of scientific information needs to be further developed within most existing national policies and legislative frameworks. Moreover, researchers do not seem to always be aware of preservation of scientific information articles and data as a key issue, although some progress has been made.

Co-operation and co-ordination

Global challenges call for global responses. The question regarding co-operation focused on co-ordination among Member States in order to define common national funding body principles on open access, to improve the transparency of the contractual terms of 'big deals' financed with public money, to assess the possibilities for achieving economies of scale, and to achieve the interoperability of repositories. There are many networks, national or international events, as well as projects and conferences in which professionals and relevant stakeholders meet. The goal is often how to identify common agendas and how to implement common initiatives. The role of international organisations and umbrella structures is regarded as crucial. The involvement of all stakeholders is very important, whether on the topic of revisiting agreements with publishers, co-ordinating advocacy activities, or encouraging the sharing of good practices.

Role of the European Commission and the European Union

Discussions involving the Commission, other European institutions and European governments help define the Commission's guidance for national authorities and bodies. The question asked in this section was about the role that respondents see for the European Commission/ European Union. Answers sometimes went further than considering how and when, in a sector where both public and private interests are strong, the European Union can speak with a 'single voice'. Respondents were generally very favourable regarding the role that the Commission and/or the EU has or could develop further, whether on specific topics (data, copyright, etc.) or regarding the benefits that Member States could derive from Community action. As one respondent underlined, there is considerable potential for international bodies to play a leading role in co-ordinating both nationally and internationally funded work. It is increasingly important that national infrastructures, embedded in national university and research environments, are seen as the basis on which international developments build in many disciplines, perhaps especially outside 'big science'. It was generally felt that the European Commission has the position and visibility to play a leading part in the debate on access to and preservation of scientific information.

Introduction

Background

In late 2008, the European Commission prepared a questionnaire on open access and preservation policies in Europe, with a view to taking stock of the status of implementation of the 2007 Council Conclusions on scientific information in the digital age [1]. The questionnaire was presented to CREST Members and Observers [2], who in some cases designated national experts to respond to it. After replies were collected, a Summary of Responses [3] was prepared, released and presented to CREST in 2009. It highlighted that many initiatives existed at the level of universities, research councils and other non-governmental organisations, but that national policies were still lacking.

Policy regarding scientific information is gradually entering a phase of consolidation, in which a increasing degree of coordination and efficiency can be detected. In the light of the new ambitious goals in the context of the European Research Area (ERA) and the Innovation Union to create a Europe-wide open space for knowledge, research and innovation to thrive, the Commission has taken the initiative of updating the collective knowledge available on the situation in Europe with a second questionnaire to ERAC Members and Observers. This was done in parallel to a workshop on the topic of open access and preservation in the ERA with national experts that was organised in November 2010 [4].

Methodology

The questionnaire was sent to all ERAC Members and Observers on 25 November 2010. The Commission received 29 responses between 21 December 2010 and 11 March 2011: 25 from EU Member States (Bulgaria and Hungary did not respond) and four from ERAC Observers (Iceland, Montenegro, Norway and Switzerland).

A preliminary analysis of the results was conducted in April-May 2011. A first impression of answers received was presented to Member State representatives on 31 May 2011 in a special Member States session that followed a public hearing on access to and preservation of scientific information [5] on 30 May 2011. The preliminary analysis was sent for feedback to all respondents in July-August 2011. The final report, which incorporates some corrections and additional information, was prepared in September-October 2011.

The second questionnaire was identical to the first one, except for twelve closed questions added for the purpose of clarity. Detailed answers per country are not given in this summary report, but collective answers have been used to draw twelve charts. Contrary to the 2009 Summary of Responses that followed the order and wording of the 2007 Council Conclusions exactly, the 2011 Report presents answers in a slightly more reader-friendly way with graphs and diagrams, and contains more detailed information. In many places, direct quotes from responses have been used to

1. http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/intm/97236.pdf
2. CREST became ERAC in 2010: http://ec.europa.eu/research/era/partnership/process/crest_en.htm
3. http://ec.europa.eu/research/science-society/document_library/pdf_06/scientific-info-results-crest-final-090609_en.pdf
4. http://ec.europa.eu/research/science-society/document_library/pdf_06/oa-preservation-in-era-110819_en.pdf
5 Agenda: http://ec.europa.eu/research/science-society/document_library/pdf_06/stakeholder-meeting-agenda_en.pdf

make the text more lively. These should not under any circumstances be interpreted as official statements of respondents' governments.

Annexes include a table containing names of responding institutions, useful links, and the questionnaire text.

Acknowledgements

The Commission would like to express its thanks to the ERAC Members, ERAC Observers and all national experts who have taken the time to provide the Commission with extensive and highly valuable contributions.

Factual errors should be reported to jean-francois.dechamp@ec.europa.eu.

Chapter 1 **Access and Dissemination**

Access and Dissemination

It has been extensively demonstrated that widespread and efficient access to and dissemination of scientific information (in particular journal articles and research data), is imperative for all parties involved in research and innovation activities. New information technology tools have evolved and will continue to change the way in which researchers can access, share and use scientific information among their peers, as well as disseminate it to the public-at-large. Much of the debate revolving around access to scientific information has focused on peer-reviewed scientific publications in journals (publications resulting from research projects partly or fully publicly funded), but further areas are also crucial, for example doctoral and masters theses and research data. Research results are generated and circulate within specific environments and raise specific legal issues such as copyright and VAT rates for electronic products. Moreover, repositories play a crucial role in collecting, preserving, and disseminating digital intellectual output from research. Other issues deal with access and dissemination activities at national level. They include overall national policies regarding publications and data, the development of repositories, and stakeholder involvement.

1.1 Implementation of the 2007 Council Conclusions

In addition to asking respondents to describe the policies in place for dissemination of and access to scientific information, some closed questions were included in the survey, for example whether, generally speaking, the situation regarding open access has improved since 2009 (previous survey), and whether the country has experienced problems implementing the 2007 Council Conclusions. The general impression is that, compared to 2009, the situation has improved in many countries. Only very few respondents have replied that there has been no improvement at all in their country.

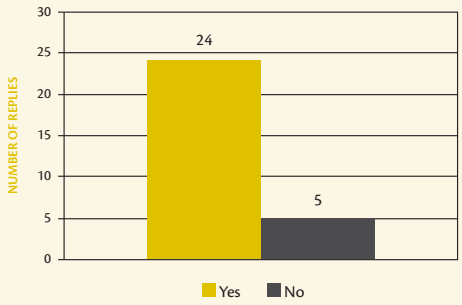

Figure 1: "Generally speaking, the situation has (even slightly) improved since 2009"

In the case of most respondents, there has been no major problem with the implementation of the 2007 Council Conclusions. Even when there is no specific policy on open access, applicable provisions typically exist. **Cyprus** for instance has no specific initiative for open access, yet a policy is in place to promote the dissemination of scientific results. Despite reporting "no general improvement", **Latvia** noted that the situation would likely improve in 2011 with the launch of the long-term information provision project Latvian Academic Network. As expressed by **Greece**, one can generally say that "*there is much greater awareness about the significance of the issue* [and a] *greater number of infrastructures to support dissemination of and access to scholarly material.*"

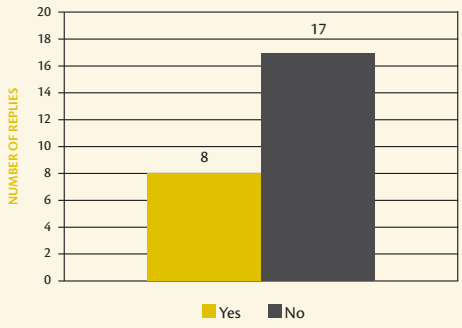

Figure 2: "Your country experienced problems in the implementation of the 2007 Council Conclusions"

1.2 General policies and strategies

Respondents were asked to describe the policies in place for dissemination of and access to scientific information, including information on how these policies are financed. A growing number of countries has put or is currently putting in place clear strategies regarding access and dissemination, usually with a focus on open access or repositories. Open access has been incorporated into national strategy for science and research in some countries. As regards infrastructure, national archives for open access content or national harvesting systems that can access open access material through national portals have been set up in some countries.

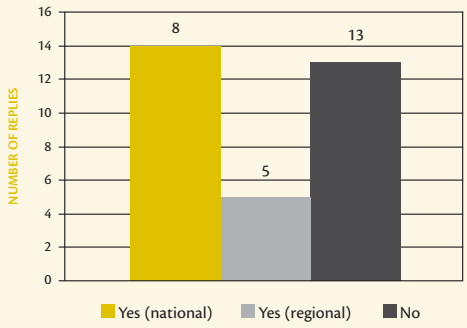

Figure 3: "Policies (or overall strategies) are in place"

1.2.1 National level

Among the Nordic countries that traditionally are advanced regarding access and dissemination issues, **Denmark** has made significant progress during the last couple of years. The Danish Open Access Committee published recommendations on how the Council of the European Union's Conclusions on scientific information in the digital age should be implemented at a national level. These recommendations were scrutinised during a public hearing calling on the participation of all concerned stakeholders. On this basis, , the Open Access Committee published in February 2011 its final Recommendations for implementation of Open Access in Denmark. The Ministry then launched a series of meetings with stakeholders with a view to finalising a Danish national open access strategy. **Sweden** has a national open access programme organized by the National Library's Department for National Cooperation. In addition, all universities are legally obliged to provide to the public information on the research they conduct, including "*research results for commercial exploitation.*" Recommendations for the promotion of open access in scientific publishing may have been set up years ago, as the case in **Finland**. They can also be accompanied by a growing number of university mandates.

In **Germany**, different actors (universities, organisations, funding organisations…) have chosen to develop strategies not at a national but at a stakeholders' level. In the case of **Greece**, "*the awareness about the significance of dissemination of and access to scientific information has been considerably raised among […] Greek scientists as a result of the extensive development of digital repositories […]*". Although "*[…] there is no formulated national policy yet, there is […]a national strategy that concerns the availability of scientific information in the digital world, as well as the development of the digital infrastructures that will enable research.*" The Greek government is implementing a national digital strategy and one section of this national strategy is devoted to scientific information. There is also debate on the possible addition of a provision on dissemination and open access in a new law on research and technology. The feeling is that the "*time is ripe for institutional and national policies and mandates soon to follow.*" In the **Netherlands**, the scientific community and libraries are very active at national (and international) level despite severe budget cuts and a new government that, while is supports the principles of access to and dissemination of scientific information, does not intend to invest substantially in the furthering of open access and preservation.

In 2010, **Estonia** adopted the Research Infrastructures Roadmap, which "*is a long term (10-20 years) planning instrument that lists research infrastructures of national importance, either new or in need of upgrading.* […]. *[T]he roadmap will be used as an input for the investment decisions under preparation.*"

Many other countries have a variety of policies, some new and others under development. **Spain** is one example, with a project that concentrates and coordinates national policies on open access and repositories. Another is **France**, where "*the open archiving issue is part of a ministry program to establish a large digital library for scientists and researchers in state-run institutions.*" Despite the fact that there are no policies or mandates in **Slovenia** for depositing publications or data from publicly financed research activities, the government is preparing a review

of the situation regarding research data and has launched a review project in 2010, the results of which should pave the way for a proposed action plan. The Slovenian Research Agency requires open access to all published scientific output which has been co-financed with public funds. Among other things, the Research and Innovation strategy of Slovenia 2011-2020 emphasises the need for free access to research data from public funding. The action plan for free access to data from public funding will be completed by 2014.

Ireland recently put in place a network of institutional repositories and a "national harvester". Some countries finance subscriptions to scientific journals, for instance, since 2010, most of the content of the Virtual Library of Science in **Poland** "*is freely available to all academic institutions in Poland on the basis of national academic licenses fully financed by the Ministry of Science and Higher Education.*" However, Polish funding bodies have as yet not defined any principles on open access. **Portugal** also has a 'big deal' of this type managed at national level. In **Italy**, laws or legal provisions encouraging or mandating open access are in place at national level, but for theses only. In **Austria**, "*the awareness of open access is small but growing very fast*". All research institutions and universities are autonomous, but the umbrella organisation Universities Austria (the Austrian Universities' Conference) ratified the European Universities Association's "Recommendations from the EUA Working Group on Open Access" and signed the Berlin Declaration in 2004. In 2010 Universities Austria also published its recommendations for the enhancement of open access policies in Austria and the University of Vienna declared officially to implement a policy. In some countries, as is the case for **Slovakia**, policies exist only at institutional level.

There is no national policy yet with regard to dissemination of and access to scientific information in **Switzerland**, but there is general support, as well as many activities in the field. In **Iceland**, the Science and Technology Policy Council, has in its current 2010-2012 policy a section on open access – it has also sent a letter to the Boards of competitive research funds, to universities and research institutions to encourage them to set policies for publishing results in open access. In **Norway**, policies or overall strategies are already in place at national level and, as stated in the White Paper on Research, all publicly funded research articles should, as a principle, be open access. **Montenegro** describes itself as being "*at the initial phase of creation and implementation of policies regarding dissemination of and open access to scientific information*".

1.2.2 Regional level

Belgium, where a "*policy of the Flemish region consists of financing Flemish universities accordingly to the number of peer reviewed publications they produce*", is an example of a policy that has apparently influenced output. **Spain** also has initiatives at the regional level, in particular regarding repositories in several autonomous regions.

1.3 Open access to publicly-funded publications

Open access refers to free-of-charge accessibility of outputs, e.g. research articles, over the internet. A frequent bottleneck to achieving a more widespread use of open access and faster development of policies is lack of awareness and understanding of open access amongst researchers and policymakers. The questionnaire asked respondents to describe policies and other arrangements in place aiming to provide open access to peer-reviewed scientific journal articles resulting from public research funding. Some countries have made considerable progress on open access, while others are slower to initiate developments. At institutional level, individual universities have launched projects on open access, and there has been progress on the development of deposit and curation points. Some countries have high-level policies on open

access and preservation. At national level, arguments for open access have successfully been taken to the governmental level in some countries, and in some cases even incorporated into national strategy for science and research. Where national-level or institutional-level policies have been adopted, there is success in increasing the amount of material openly available and in raising awareness of open access amongst authors. Policies usually make the case for open access and are accompanied by guidance to researchers. However, a relatively good level of policy development does not mean that open access has been fully achieved in the European Union.

1.3.1 Laws and legal provisions

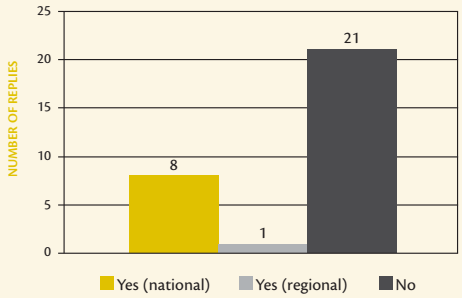

Figure 4: "Laws or legal provisions encouraging or mandating OA are in place"

Spain made a big step forward by passing a new law on Science, Technology and Innovation including two articles specifically dedicated to Access and Dissemination of Science. It says in particular that researchers whose activity is financed through state funds will publish a digital version of the final copy of any of their contents accepted for publication as soon as possible and made Open Access, no later than twelve months following the official publication date. There are also regional regulations in place for some of the 17 autonomous regions of the country, which promote in particular the population of open repositories with peer-reviewed scientific articles.

The 2009 Law on Science and Studies of the Republic of **Lithuania** continues to create pre-conditions for the more speedy development of the open access throughout the country and is progressively being implemented.

It is also worth noting that the **United Kingdom** government's position on open access is that the broad objective of increased transparency should also respect, where appropriate, the need for ensuring the successful commercial exploitation of research.

1.3.2 Funding bodies

Funding bodies across Europe have put in place a multitude of initiatives. For instance in **Romania**, the funding agency UEFISCDI has put in place "*a pilot platform to facilitate open access to publications emerging from the national programmes* Ideas *and* Partnership in Priority

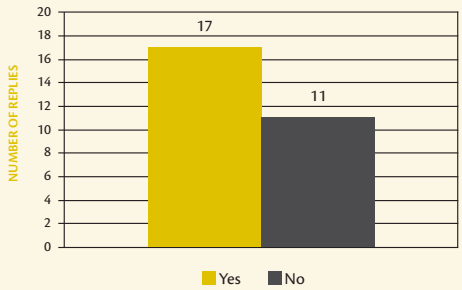

Figure 5: "Some funding bodies have OA policies"

Areas." In the **United Kingdom**, the Research Councils are currently re-examining their policies in the light of a review carried out in 2008. Most research funders in this country have clear policies mandating open access deposit and several universities have now adopted policies requiring their researchers to deposit their research papers into an open access repository. In **Austria**, the Austrian science fund (FWF) has developed an open access policy for all research programs they finance. In

Germany, many of the funding organisations, for example the Deutsche Forschungsgemeinschaft (DFG), have an Open Access policy.

It is also interesting to mention Telethon in **Italy** that asks that all research articles that it funds be deposited in UK PubMedcentral or published in an open access journal via the author-pays model (cost are covered).

In some cases, funding bodies have signed the Berlin Declaration but have not yet have finalized their open access policies (e.g. National Science Foundation in the **Czech Republic**). Open access publishing is sometimes the focal point, as is the case for the National Research Fund (FNR) in **Luxembourg**, which "*does not have an explicit strategy for the dissemination of and access to scientific information except for the fact that it provides funding for publication costs*".

In **Switzerland**, the National Science Foundation, which is the major national funding agency, has issued regulations on open access which oblige grantees to guarantee open access (green or gold road).

1.3.3 Universities and research centres

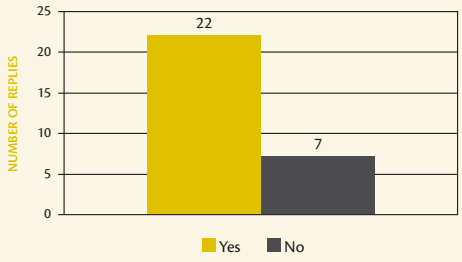

Figure 6: "Some universities and research centres have OA policies"

The situation has improved since 2009 in many countries as in **Belgium**, **France**, **Ireland**, **Portugal**, **Romania**, **Spain**, and **Sweden** to name a few. Moreover in the **Czech Republic**, despite the absence of national policies, some universities are developing mandates, as has the Academy of Science in October 2010; in the **Netherlands**, "*all Dutch universities have a green open access policy, although not each of them has the same policy*" and they do not make open access compulsory. The Academy of **Finland** is preparing a strong initiative for mandatory open access, although it already recommends its researchers to publish in OA journals or to deposit publications in OA archive. In **Austria**, the Academy of Sciences has developed an open access policy and created a repository.

In **Germany**, "*The major research organisations and quite a few universities have open access policies or are in the process of defining one. There is a general consensus to encourage publication in open access journals or depositing in open access repositories". Researchers who received* [public] *funding are required to make project results including final reports available to the German National Library of Science and Technology* [...]. *In addition, the recipients of funds are obliged to make the result of the project available to interested specialist offices in the Federal Republic of Germany within nine months of completion of the project in a suitable way (e.g. at specialist conferences) or to publish it in another suitable way (e.g. in specialist literature)*".

In **Switzerland**, "*a remarkable process in the field of the humanities can be observed*" since publishers of scientific journals funded by the Swiss Academy of Humanities and Social Sciences (SAHS) are obliged to allow their authors to deposit article in an open access repository. In addition, the Rector's Conference of Swiss Universities addresses open access with the long-term aim of implementing regulations for all Swiss Universities. In a similar fashion, in **Norway**, there is "*economic support to small national scientific journals, especially within the humanities and social sciences, to sustain important national, Norwegian–language publication channels within these disciplines*".

1.3.4 Incentives

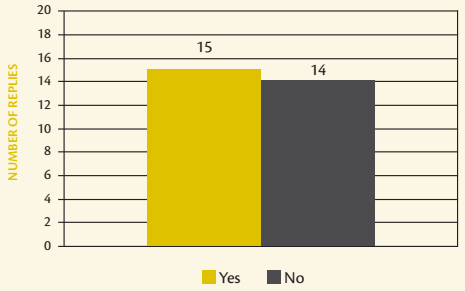

Figure 7: "There are special incentives in place to encourage researchers to provide OA"

Incentives to encourage researchers to provide open access to their publications are in place in 15 out of 29 responding countries. In many countries, policies do not differentiate between various types of publication outputs but refer in a broad sense to 'research results'. In some cases, incentives will be made more explicit when a national open access strategy is in place, e.g. in **Denmark**. As mentioned in the case of **Greece**, sometimes there are not many national peer-reviewed scientific journals (e.g. in natural sciences). However, Greek-authored publications in non-Greek journals increasingly appear as open access publications, as a result of a progressive campaign on authors' rights run by the National Documentation Centre. Activities are also increasing in the field of humanities thanks to pioneering policies in digitization and public access.

Estonia is due to amend the Organisation Research and Development Act in order to "*reform the main research funding instruments (targeted funding, grant funding).*" The working group that is drafting the future conditions and terms of future funding instruments has discussed the issue of open access and "*the general position is that costs of publishing in open access journals should be eligible, but [that] there probably will not be a strict obligation to publish research results in open access journals.*" It is interesting to note that, in **Estonia**, the Consortium of Libraries Network and the research libraries have created very good conditions and access to scientific journals and electronic databases for national researchers, which is probably "*why Estonian researchers do not feel the need for specific open access policies.*" In addition, "*the current research funding conditions favour publishing in journals with [a] high impact, but usually they are not OA journals.*" The general approach is that "*the goal should be to provide conditions where all publishing opportunities are available and accessible.*"

In **Austria**, the Science Fund (FWF) in most cases expects the results of the research it supports to be made public and when possible published in a digital form, and to be made open access within six months (twelve in the case of books). FWF will "*offer money to Austrian scientific publishers so that books also can be used in open access if the FWF has supported the research.*" The costs for open access publishing are covered up to three years after the end of the project. Moreover "*the University of Vienna created an open access database (PHAIDRA)* [in which] *other Austrian universities can participate.*" The Academy of Sciences of the **Czech Republic** has also established a special fund to encourage open access publishing. The Academy of **Finland** recommends publication in open access journals if they are of quality, and covers the related open access publishing costs.

The national research council of the **Netherlands** (NWO) encourages that research results acquired with NWO funding are accessible to the public. It has an "Incentive Fund Open Access", a pilot in the humanities for starting open access journals, and has launched a call for proposals for all disciplines served by NWO for starting open access journals. It should be noted that NWO also co-finances OAPEN (Open Access Publishing in European Networks) – a European project now turned into an organisation – focusing on open access publishing of books.

In **Romania**, "*there are prizes for the authors of ISI publications*". In **Spain**, "*the only incentive recorded is the Uni-*

versity of Alicante's direct funding of research departments and groups depending on the number of documents they have archived in the institutional repository." In some cases, for example **Sweden**, there is no extra financing of this type. However, the policies and mandates progressively being established at different organizational levels aim to enable open access to peer-reviewed scientific journal articles in institutional or thematic repositories.

Through a project co-financed by structural funds, **Romania** provides subsidies to ensure access at national scale to scientific platforms such as *ScienceDirect*, *SpringerLink* and *Ovid*. Other countries such as **Lithuania** and **Latvia** have mechanisms of financial support in place. In **Norway**, there are no special incentives in place at the national level but some higher education institutions have implemented economic incentives to encourage open access among their researchers: the Oslo University College has developed a negative incentive, in which "*Scientific articles not made accessible through the institutional open archive will receive only 50 % of the ordinary result-based allocation in the internal budget allocation model*" (this is relevant only if the publisher allows self-archiving). Other universities have developed positive incentives, with extra allocation of funds for open access publishing.

In **Sweden**, one arrangement that makes Swedish open access publications visible is SwePub, a search system for Swedish scientific publications that was created by the National Library of Sweden by collecting information from university publication registries. Articles that are published open access in university registries in parallel also automatically appear in SwePub. In the **United Kingdom**, "*some repositories and open access journals offer usage statistics and other feedback to authors. Some repositories automatically populate researchers' personal web pages*".

In **Slovenia**, the Legal Deposit Law requires the deposit of all Slovene publications, including scientific journals, to the National and University Library (NUK). It also obliges NUK to provide access to their contents. In the **Czech Republic**, the Legal Deposit Law requires the deposit both of periodical and non-periodical publications into several libraries where access to these publications is provided. It does however not mention or specify how to handle digital publication.

In the **United Kingdom**, the Research Councils expect their funded scientists to make their papers freely accessible either by depositing them into an appropriate repository, usually within six months of the publication date, or by publishing in an open access journal. Some Research Councils have established, or fund, subject repositories into which grant holders should deposit their research papers. Others ask grant holders to deposit their papers into the most appropriate repository; funds are made available within the grant award to cover related costs. It also is interesting to mention the UK Open Access Implementation Group, established in 2010 with the aim to add value to the work of the member organisations in order to increase the rate at which the outputs from UK research are available on open access terms. In addition, the group acts as a forum in which the member organisations can coordinate their policies and actions in support of OA. Other arrangements include the exploration of a broker service that would direct papers to the appropriate open access repository for deposit (Open Access Repository Junction).

An annual control of the progress of the journals adds to the strategy to encourage researchers to provide open access to their publications. The project Cristin (Current Research Information System in **Norway**) was established in 2010 as: "*not only a technical infrastructure for open access but also a strategic body working to increase the number of scientific articles in open access*".

It is also interesting to take note of a global issue as reported by **Lithuania**: "*scientists are not motivated to publish their research to public access databases, because it is not ranked during their certification and it is not taken into account during the competitions*".

1.3.5 *Specific references to open access in grant agreements*

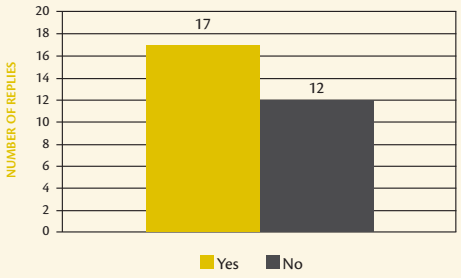

Figure 8: "In the case of funding body policies on open access, research contracts / grant agreements include a specific reference to providing open access"

As reported by **Austria**, it is difficult to collect examples of the phrasing and references to open access in research contracts or grant agreements, as these are usually created autonomously by the various institutions Europe-wide or, as in the case of the **United Kingdom**, too numerous to mention. In **Ireland**, the Health Research Boards "*requires electronic copies of any research papers that have been accepted for publication in a peer-reviewed journal after 1st January 2010, which are supported in whole or in part by HRB funding, to be made available through UKPMC as soon as possible following the date of final publication.*" This is one of the examples of wording used in the case of whole or partial public funding.

In **Spain**, the Autonomous Region of Asturias calls for deposit in the Institutional Repository of Asturias and will respect an embargo period of not more than six months before proceeding to its dissemination through the institutional repository. The Autonomous Region of Madrid, calls for the deposit of a copy of the published article or its final version, together with working papers and in particular research data and an embargo no longer than six months for the technological areas and biosciences and of months for the social sciences and humanities.

In **Germany**, the German Research Foundation (DFG) expects the research results to be published and made available, where possible, digitally and open access. Contributions should either be deposited in discipline-specific or institutional electronic archives (repositories) following conventional publication, or should be published in a recognized peer-reviewed open access journal. When contracting with publishers, scientists participating in DFG-funded projects should as far as possible permanently reserve a non-exclusive right of exploitation for electronic publication. Embargoes vary from six to 12 months.

The Academy of **Finland** recommends that researchers publish their results in open access academic publications, where they are qualitatively on the same level as traditional subscription publications.

In **Norway**, general terms and conditions for projects funded by the Research Council state the "*obligation to ensure, in so far as possible, that peer-reviewed scientific articles based on research wholly or partially funded by the Research Council are stored in appropriate, open access digital archives. It is presumed that such storage does not in any way conflict with the author's academic and legal rights.*"

1.4 Open access to other publicly-funded research results

While the debate on open access has up to now focused on scholarly literature, research data (be they numerical, graphical, audio, video files, etc.) and the general objective of gaining open access to data ("Open Data") is increasingly in the spotlight : Open Data. The importance of research data is likely to grow in the coming years as information society tools have made it possible to access data directly, and because new information services are combining journal articles and data, hence applying new search techniques such as data mining. There are already

many policies from research funding agencies covering the accessibility of data created during work they have funded, and the number is expected to grow. Further developments are linked with e-science infrastructures and with relevant intellectual property rights issues. Policies on open access to research data remain less developed than policies on open access to publications, but the general concern for unlocking the full value of scientific data is growing, as reported in the 2010 Final report of the High Level Expert Group on Scientific Data 'Riding the wave: How Europe can gain from the rising tide of scientific data'. Several respondents referred to European projects such as EUROPEANA and e-infrastructures, activities that are typically covered in the Commission by the Directorate-General for Information Society and Media (DG INFSO). Some respondents also mentioned activities in the European Bioinformatics Institute (EBI), which is a centre for research and services in bioinformatics that manages databases of biological data and provides free access to all its data resources. Less in the public eye than publications and data are doctoral and masters theses. Open access to this highly valuable resource is progressing rapidly in Europe and is encountering fewer obstacles than publications and data.

1.4.1 Research data

As exemplified by the response of the **United Kingdom**, it is generally thought that data access principles can promote new and extended uses of data: "*Responsible sharing of data allows testing of new hypotheses and analyses, linkage and pooling of datasets, and validation of research findings. These activities not only reduce duplication of data creation but also enhance the long-term scientific value of existing data. This benefits the wider research community and generates new opportunities for advancement towards the longer-term goal of improving human health.*" Not all countries have explicit policies or arrangements for research data, but some funding bodies are encouraging making research data openly accessible (as in **Luxembourg**), supporting various initiatives or pilots (as in **Italy** or **Portugal**) or, as in **Iceland**, have dedicated working groups focusing on primary research data. This is also the case of **Germany**, which has set up Research Data Centres that "*represent the attempt to establish a model for a new form of data access.*" In **Germany**, the Alliance of German Science Organisations also adopted 'Principles for the Handling of Research Data' in 2010. Among other things, the Research and Innovation strategy of **Slovenia** 2011-2020 emphasizes the need for free access to research data from public funding.

As pointed out by **Ireland**, "*international developments on open access in research data (and related activities [...] known as e-science) are a natural extension to open access in publications. However, the scale of the enterprise would strain national capacities in Europe although the need is pressing*" adding that "*EU stimulation of these activities, especially open access to data*" in addition to further coordination on a EU level "*will be essential*". The **United Kingdom** Research Councils are "*developing a key set of principles for the curation and sharing of data arising from the research they fund.*" It is also interesting to note that the Information Commissioner has convened a group to consider the ways in which the UK Freedom of Information Act applies to universities and, in particular, to data collected or used by researchers therein. Further guidance on this topic was expected in 2011.

Finland published a report on public data policy in 2010, which includes many aspects such as economic issues, metadata or copyright, and now has extensive guidelines in the field. The report gives several recommendations on data for the legislator, universities, public authorities, etc., stating in particular that all publicly funded research data and other materials should be made publicly available. Moreover, public funding for research infrastructure includes open digital data. **Romania** also addresses the issue of public access to research data in its programmes.

As part of its Research Infrastructures Roadmap adopted in 2010, **Estonia** is also setting up an archive and information network in the field of natural history, including a central infrastructure for natural history archives. One of the purposes of this initiative is "*to create a public information system that could utilize most of the existing Estonian biodiversity information for conducting analyses*." In **Lithuania**, it is the creation of a free, on-line and exhaustive "*digital archive of research results, which allows collection and saving data of biomedical sciences, physical science, social science, humanities and technology science*." As for the Digital Curation Centre in the **United Kingdom**, it is an international centre of expertise, providing guidance specifically on the curation of research data.

In **Belgium**, there are also initiatives at the federal level (e.g. meteorology) or regional or even both (e.g. marine and coastal research), while an information system called PANGAEA is operated in **Germany** for geo-referenced data from earth system research (on the latter, co-operation with Elsevier is in place to link research data to the respective publications in the publisher's journals). **Ireland** also has an open access policy for data in the field of climate change research. Social science data are collected and archived in **Austria** (there are similar initiatives in **Finland**, **Slovenia** or the **United Kingdom** – the latter foreseeing the mandatory deposit of machine-readable datasets, including appropriate metadata, within three months of the end of the grant). **Greece** and the **United Kingdom** offer specific support to making accessible primary material in the field of humanities. These policies are not all necessarily mandatory. NARCIS (National Academic Research and Collaborations Information System) and DANS (Data Archiving and Networked Services) are now well-established in the **Netherlands**. In the **United Kingdom**, applicants for Biotechnological and Biological Sciences Research Council (BBSRC) research projects "*are required to state at the submission stage how they intend to share the data arising from the proposed work. These statements are assessed during the peer review process to ensure that grant holders are adopting data sharing best practice in their field, noting that these best practices will vary between different bioscience areas.*"

Although no specific national policy on data exists in **Switzerland**, several initiatives are in place in domains such as climate and environmental research, humanities or social sciences (the latter in order "*to enhance research potential for researchers and students working and training in the social sciences, for example, by making available a rich corpus of data for secondary analysis*"). In **Montenegro**, in accordance with the law on open access to information, the data on research activity from the public administrative bodies are accessible.

1.4.2 Theses

A further area in which open access is under discussion is that of doctoral and masters theses. In this context, one should mention DEEP, the European Portal for E-Theses and Dissertations (ETDs), operated by DART Europe, a European partnership aiming to improve global access to European research theses.

In countries such as **Italy** or **Austria** there are systems in place at national level to encourage or mandate open access to theses.

In **Greece**, all individuals holding a PhD from a Greek institution are obliged to deposit their theses, which is now implemented thanks to an online interoperable system. There is also an open access database for the PhDs earned at the University of **Cyprus**. In **Lithuania**, there has been an electronic theses and dissertations database since 2003. In the **Czech Republic**, there are several institutional open access repositories as well as the system *Theses.cz*, which is primarily designed to fight against plagiarism and enables storage of full text theses and access to the public.

Finally, as pointed out by **Ireland**, "*the Commission document* 'Europe 2020 Flagship Initiative - Innovation Union'

(…) *again calls for researchers' mobility in the European Research Area. In order to support this, all PhD dissertations produced in Europe could and should be accessible easily from any portal entry point.*"

1.5 Repositories of scientific information

Well-designed e-infrastructure can enhance access and dissemination. In infrastructural terms, Europe is doing well. Replies to the question about repositories show a great deal of successful national activities, and many of these look to standards developed at European level. There are too many initiatives in Europe to be reported in an exhaustive manner, but they are all paving the way towards open access. Several countries have created national repository infrastructures. As reported by one respondent, , this is both a complex and dynamic situation since the infrastructure is provided and supported by a number of independent organisations, including funders and universities. As illustrated in the comment of another respondent, there are many important initiatives that are growing fast, but they can easily remain 'islands' that are not sufficiently interconnected.

1.5.1 Policies regarding repositories

As exemplified by the case of **Austria**, the absence of a national policy on open access or a policy to create a national repository for all institutions is not an obstacle as long as the need for national repositories has been identified. Indeed, the University of Vienna and the Austrian Academy of Sciences have each started repositories.

In the case of the **Czech Republic**, there are policies and activities mostly at institutional level. There is general progress, which for instance can be illustrated by the fact that, by 2012, all universities and research centres in **Greece** plan to have an institutional repository.

1.5.2 Operability and interoperability

The National Library of Finland provides a centralized repository infrastructure, which is being used by many universities and all of the universities of applied sciences in **Finland**. In **Belgium**, the Scientific and Technical Information Service (STIS) within the Belgian Science Policy Office (BELSPO) is planning to create a central institutional repository for the Federal Science Policy Office, which would link with and complement existing repositories of a series of Federal Scientific and Cultural Institutions. In the **Czech Republic**, the Academy Council delegated to the Academy of Sciences Library the task to build up an institutional repository, and several other universities are also building open access repositories. A central register of all scientific output has also been put in place, but not to collect full texts. In **Ireland**, the aim of the project RIAN is to harvest to one portal the contents of the institutional repositories of the seven Irish university libraries in order to make national research material more freely accessible, and to increase the research profiles of individual researchers and their institutions. It is intended to extend the harvesting to other Irish research institutions as RIAN develops.

In **Germany**, "*at the technical level, interoperability of repositories is ensured by standardized interfaces for harvesting metadata of publications, e.g. the OAI-PMH protocol.*" Most repositories in **Greece** are developed on interoperable systems such as DSpace and Eprints. There are, however, only a few which are not OAI-PMH compliant but these are due to migrate into interoperable systems soon. Interoperability is also on the agenda of RECOLECTA, the national programme to create a cohesive, robust and flexible infrastructure for repositories in **Spain**. The programme is working towards the migration of its harvester to DRIVER technology and should be operative in 2011. The goal is to develop an interoperable Spanish repository network integrated in the international arena. Moreover, "*RECOLECTA has also developed a statistics module to be installed in every repository*

in order to get comparable data. This statistics module is compliant with the Knowledge Exchange Statistics Module guidelines." **Portugal** is also insuring standards and guidelines at a central level (SaaS regime), as there is a national open access repository of scientific and academic information.

In **Denmark**, the national Electronic Research Library (DEFF) is supporting the development of institutional repositories and making sure that they are developed in accordance with European standards, for instance through the EU-funded project DRIVER. It is also interesting to note that **Slovenia** is participating in new FP7 project that aims at "*harmonisation of access to official data across EU*." In **Estonia**, there are two important objects on the Estonian Research Infrastructures Roadmap that deal with access to scientific information: the Estonian E-Repository and Conservation of Collections and the Natural History Archives and Information Network (NATARC). There have been discussions that in developing these research infrastructure objects, interoperability between different systems should be ensured. The Estonian e-repository is an integrated e-environment created for long-term preservation and availability of digitized resources of the Estonian cultural heritage institutions: libraries, archives and museums. The e-repository enables to link national heritage collections with the Pan-European library EUROPEANA.

1.5.3 Repository funding

In **Germany**, the DFG-programme 'Electronic Publications' aims at federating and interconnecting certified repositories. The DFG also launched a call for tender in 2010 addressing research data which led to projects aiming to build data repositories. When it comes to repositories, the EU-funded portal OpenAIRE brings valuable support to the implementation of the Open Access Pilot for FP7, and other projects such as DRIVER II have also been praised for their usefulness. Several services that support the operation of repositories in the **United Kingdom** are well-known in Europe and beyond, for instance Sherpa-RoMEO (listing of publishers' OA policies) and OpenDOAR (listing of repositories). In **Greece**, strict requirements for institutions to be funded for infrastructures and digitization are enforced, including a special emphasis on the interoperability of the systems to be used (in journals and repositories) and copyright and licensing issues (for example, encouraging researchers to publish with Creative Commons licenses or to self-archive). **Greece** also subsidizes horizontal activities in universities and research centres that aim to enable the development of two platforms, one as single-entry point to the research output of universities, the other for research centres. Eventually, the goal is to establish a single access point. Currently, access to interoperable repositories and archives is provided through www.openarchives.gr, a platform developed and run privately. Organizational developments are undertaken by the institutions themselves. **Germany** is currently establishing the German Digital Library (DDB), which will go online by the middle of 2012. The DDB will offer the digital content of up to 30,000 cultural and research institutions and will be integrated into EUROPEANA.

In 2009-2010, **Finland** funded the Institutional Repositories Project, which concentrated on the development of a repository infrastructure (using DSpace technology) and the creation of policies and practices concerning self-archiving, but also encouraged co-operation among repositories. In **Estonia**, there have been discussions about developing the Estonian Research Information System (ETIS) in a way that would allow it to be used as an open repository. In **France**, "*the open archiving issue is part of a ministry program to establish a large digital library for scientists and researchers in state-run institutions*." In **Spain**, the project managed by the Spanish Council for Science and Technology (CSIC), the Latin-American Index of Information and Knowledge (I3C), aims to integrate a national repository of the high quality scientific publications of researchers edited in open

access in the country. In the **Czech Republic**, the project WebArchiv aims at archiving selected parts of the Czech web, including scientific content (data). However, it has no legal basis and is based on individual agreement with each publisher. In **Ireland**, local repositories are beginning to be integrated into local operations and are regarded as core university functions.

In 2011, **Portugal** is pursuing its work on scientific information repositories, extending its activities on research data repositories and launching a service for hosting journals. **Latvia** is planning to create "*the next generation of data transfer net for providing scientific activities and involving into European Academic network and improving information systems in state research institutions and universities.*" The project will be implemented using European Structural Funds. In the **United Kingdom**, JISC is funding several innovation projects exploring other potential services, including those relating to usage statistics, citation data, deposit, and search. The **United Kingdom** is also working on defining a "*UK-wide approach to coordinating the UK repository infrastructure and its relationship to international infrastructure such as that being developed at a European level by the OpenAIRE project.*"

In **Norway**, many of the initiatives and results have been driven by the Norwegian Open Research Archives (NORA), which has since 2010 been engaged with Sherpa-RoMEO in further activities. The Current Research Information System in Norway (Cristin) it is the new joint research documentation system in Norway and the name of the new body for research documentation and information. Cristin will compile information for research institutions on the principle of open access for all.

In **France**, the slow spread of repositories is in contrast with the conclusions one could draw from a 2007 survey on open archive projects. There is an important gap between intentions and implementation, probably due to a lack of political incentives at local level. However, many institutional repositories are developed in connection with the platform HAL. Some countries are also reporting encouraging yet slow developments in that field such as **Malta**, **Slovenia** or **Poland**, which may sometimes contrast with the dynamism shown in other fields.

1.5.4 Repository quality

In **Germany**, "*at the level of repository management there is a certificate established by DINI (German Initiative for Network Information), which ensures a minimum level of quality concerning operation, collection development etc. for [compliant] repositories.*" DINI e.V. has further developed its repository certificate and issued a new certificate in 2010, a special seal of quality which facilitates the federation of repositories. **Spain** has also created a quality certification service based on international standards, similar to the German DINI Certificate.

1.5.5 Collaborations among repositories

As reported by many respondents, as far as European coordination working towards the interoperability of repositories is concerned, the EC-funded infrastructure project OpenAIRE is becoming a key project for working towards the interoperability of repositories, both at national and international level, and the use of standard software. As reported for instance by **Finland**, "*the metadata recommendations of the OpenAIRE consortium have been promoted by the Helsinki University Library.*" Other projects also play a key role, for example DRIVER, DRIVER II, DART Europe (Europe e-theses portal), CESSDA ERIC, or the European Digital Library.

As reported by **Germany**, many institutions have become members of COAR (Coalition of Open Access Repositories), an organisation co-operating to promote open access through repositories and to increase co-operation and interoperability among repositories. As reported by **Ire-**

land, "*as the number of institutional mandates grows, some coordination between funders and universities would seem necessary to ensure that the authors are not burdened with multiple deposit requests. The UKPMC is considering options for interoperability of UKPMC with institutional repositories*." The Sherpa/RoMEO directory of publisher policies with respect to open archiving is being established on a genuinely international footing, so far with active co-operation from the United Kingdom and Germany, as well as the Nordic countries and Australia. The OpenDOAR directory of open access repositories is also being established on a genuinely international footing.

Denmark's Electronic Research Library (DEFF), United Kingdom's JISC (Joint Information System Committee), the Netherlands's SURF Foundation and Germany's Deutsche Forschungsgemeinschaft are partners in the co-operative effort Knowledge Exchange. The main objective of Knowledge Exchange is to develop closer working relationships among the four European key national agencies responsible for the development of infrastructure and services to support the use of information communication technology (ICT) within higher education and research. Knowledge Exchange includes a working group on the interoperability of repositories which has worked, amongst other issues, on the development of interoperable usage statistics.

In Romania, relevant initiatives focus on the GRID infrastructure, i.e. compatibility of the national communication network for education and research RoEduNet with GEANT. As for the Central National Library of Montenegro 'Đurđe Crnojević', it became "*the full partner of the most significant project of all national libraries of Europe 'The European Library' (TEL)*." The main aims of the TEL project are the establishment of a common electronic catalogue of national libraries of Europe and the development of a digital European library as a repository of European cultural heritage. The United Kingdom is participating in "*discussions around the DataCite initiative, in particular moves to develop a common metadata application profile for the discovery of data*." In the field of life sciences in Austria, there are discussions on collaboration between the Science Fund (FWF) and PubMedCentral.

Although not an agreement as such, it is interesting to note that in France, the publishers' national union (SNE) agreed in 2010 to work with other open access stakeholders on the establishment of a "French ROMEO database" that would offer information on publishers' policies towards depositing in open repositories.

1.6 Specificities of research results

The Internet makes instant access to and dissemination of information possible. New information and communication tools offer innovative ways to add value. The rapidly increasing use of digital content in research and in the dissemination of knowledge has quickly become a main characteristic of modern science, challenging traditional ways in which research is conducted. Repositories are important places to store knowledge, but scientific journals still hold a central role within the scientific information system. The peer review process remains the central quality control mechanism, and journals remain a main vehicle for spreading research results. Technological changes have offered publishers tremendous opportunities that they have embraced in a creative way, but they also brought about complexity in areas such as copyright and VAT rates. Business relationships with publishers remain of a complex nature for all actors involved. Despite the fact that most governments keep investing in the dissemination of scientific information, research libraries often have to find creative solutions with a limited budget, and despite their increasing responsibilities in access and dissemination. Moreover, journals are still central for scientists' careers in connection with journal Impact Factors, the criticised, but much-used bibliometric indicator. Finally, open access is developing rapidly but ways of measuring its growth and impact are still under development.

1.6.1 Copyright

In **Germany**, where there is a national copyright law, researchers may be infringing copyright provisions if they self-archive their work in repositories. As illustrated by the case of **Belgium**, "*many researchers fear that they are giving up [...] their copyright when sending items to institutional repositories and some of the author contracts from publishers make it difficult if not impossible to send the (same) item to an institutional repository.*" **Portugal** even reported that "*beyond the limits established by the publishers, some reports and even dissertations can be subject to an embargo period because of work done with companies.*" **Germany** stressed that "*there is no statistical data available concerning the way researchers exercise their copyright. The science organisations report the general observation that scientists regularly transfer their copyright fully and exclusively to the publishers.*" **Finland** deplored that there is "*not yet an overall policy for copyright issues in scientific publishing.*" Some Universities or institutions provide advice to their researchers (as in **Norway**), yet there is no uniform practice (as pointed out by **Ireland**). It is interesting to note that in **Poland**, "*as an institutional partner of Creative Commons Poland, ICM (the Interdisciplinary Centre for Mathematical and Computational Modelling of the University of Warsaw) is providing a legal tool for the open access movement.*" As suggested by **Spain**, the FP7 project OpenAIRE is probably having a growing impact in the (limited) remit of the Open Access Pilot in FP7 on the exercise of copyright by those researchers involved.

In **Estonia**, as in several other Member States, "*public research funding bodies do not yet have specific regulations concerning open access to peer-reviewed scientific journal articles resulting from public research funding.*" On the other hand, "*Researchers are not yet sufficiently aware of the copyright issues of their works.* As reported in **Finland**, for example, *they do not necessarily have a clear understanding of the provisions of their publishing agreements, and therefore feel unsure about self-archiving*". **Belgium** added that "generally speaking the adage 'publish or perish' *makes it far more important for researchers to publish* [in a highly ranked ISI journal] *than to challenge the standard author contract clauses with the publishers* [...]." As noted by **Poland**, "*Most researchers just accept copyright agreements proposed by publishers*". In the **Netherlands**, University Libraries are trying the educate researchers by giving courses on the subject of exercising their copyright and the depositing of the publication/data.

In the **Czech Republic**, "*so far several researchers have published under a Creative Commons License, but generally they follow the classic publication process. Existing press on publishing due to the allocation of funding according to the research results is not motivating researchers to negotiate about their rights to treat their articles in different way.*" Creative Commons licenses now also appear to be more frequently used by researchers in peer-reviewed articles published in **Greece**, following a "*special emphasis on clearing copyright problems and licensing the work preferably in Creative Commons licenses.*" In **Spain**, "*many institutional repositories have included the Creative Commons licenses in the self-archiving form so that authors can select the license that they wish when they place their work in the repository.*"

Universities are beginning to become aware of the importance to exercise their copyright more carefully. "*Some institutions are recommending authors not to give away all rights, and to maintain at least the rights needed for self archiving*", reported **Italy**. Scientists participating in DFG-funded projects in **Germany** should, as far as possible, when entering into publishing contracts, reserve a permanent, non-exclusive right of exploitation for electronic publication of their research results for the purpose of open access (the embargo is six or 12 months depending on the discipline). As pointed out by **France**, researchers in disciplines such as mathematics or physics are keener to exercise their rights. In **Spain**, "*researchers are subject to the specific copyright conditions applied by scientific*

publishers to their publications. Many institutional repositories offer information about copyright issues in their web pages to help authors." There also are many initiatives regarding copyright conditions and legal advice services.

In **Denmark**, researchers' copyrights are protected by the organisation Copydan, which was set up by artists, authors, producers and publishers in terms of securing their rights: "*Copydan provides easy access to art, knowledge and entertainment against payments to the individual artist, author, producer and publisher.*"

In **Latvia**, researchers' copyright on scientific articles is stated by the Copyright Act, together with the issue of researchers` rights on their inventions, and the rights of scientific institutions to use the patents invented by public foundation is topical. Amendments to the Scientific Activity Act are under preparation in order to provide the rights of scientific institutions to use their inventions by themselves if the inventions are invented by public funding. In **Slovenia**, researchers usually hand over their copyright to publishers when signing the contracts for publishing their articles, but articles received through Legal Deposit Law are accessible at least in the premises of the National and University Library. In the **United Kingdom** too, while many academics assign their copyright to publishers, an increasing number are now choosing to license their works to the publisher. In doing so, the publishers gain the right to publish the material, but academics retain the copyright. Generally speaking, "*the situation is not always clear for academics as the conditions imposed by publishers for self-archiving vary considerably.*"

Finally, in **Iceland**, researchers are reported to be increasingly practicing self-archiving (green open access).

1.6.2 VAT

As pointed out by **Spain**, "*the issue of VAT is of crucial importance in improving access to scientific information. The current situation, paradoxically, means that digital subscribers in Europe are effectively penalized compared with those subscribing to paper format publications, despite the fact that electronic subscription boosts access, increases incentives for joint purchases and economies of scale, and is also more ecologically-friendly and sustainable.*" **Germany** added that "*the adoption of a reduced VAT-rate for digital publications and thus harmonization with the reduced tax rate for print publications [...] would require a revision of European law.*" In the **Czech Republic**, librarians fought for a special VAT rate for electronic documents, unsuccessfully for now. With a uniform rate to be approved and including books, "*VAT is a big issue for information sources acquisition (both electronic and printed) and it lrgely increases the spending of research and education sector*". As expressed by **Italy**, "[the refunding of VAT for digital journals and digital resources subscriptions] leads to *a heavy gap between potential users and digital resources.*"

Special VAT rates for digital publications are rare, and it is worth mentioning initiatives calling for change, such the consortium SELL (Southern European Libraries Link), a common platform for the Libraries of the Southern European Region from **Greece**, **Italy**, **Portugal**, **Spain** and **Turkey**, which signed a declaration on VAT issue in 2002.

In **Belgium**, the announced project 'VAT on information sources' (VOWB/Flemish Community, CB CIUF French Community) has not progressed and no refunds have been planned. Similar efforts in **Spain** have been fruitless too, yet in 2010 the Spanish Foundation for Science and Technology (FECYT) conducted a "*study about the situation of the VAT issue among the different University Consortia of the country in order to have a picture of the situation in Spain.*" However, "*deductions will only be possible if the Ministry of Economy recognizes that consortium purchases are applicable to research.*"

In **Estonia**, the situation has even worsened: "*Until 01.07.2009 the VAT rate for digital journal subscriptions to*

libraries was twice as high (18%) as VAT rate for paper journals and books (9%). But since 01.07.2009 the general VAT rate was raised from 18 to 20% due to the economic recession [while] *the VAT rate for paper journals and books remained* [at] *9%.*" At the same time, there is no refunding of VAT for digital journal subscriptions. In **Poland**, the VAT rate for books and scientific journals was 0% until recently, but since 2011, there is a VAT rate.

In the **United Kingdom**, "*VAT incurred through the purchase of digital journal subscriptions may be recovered by the university by the normal VAT processes. Libraries should therefore allow for this when bidding for funds within their university.*"

include open access; access to the journals is available only to users affiliated with the institutions/organisations etc paying for the journal bundle.

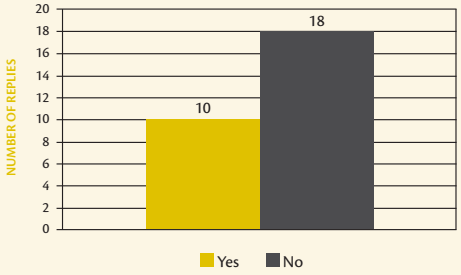

Figure 9: "There are some agreements regarding OA between funding bodies and publishers"

1.6.3 Funding, agreements with publishers

Funding of libraries

In most European countries, direct government grants are the main financial mechanism for the funding of university libraries and public research centres. In **Estonia**, a special funding programme for the acquisition of scientific information and electronic publications is being implemented in 2010-2012. It is funded by Structural Funds, with the aim to acquire access to scientific information and electronic publications for Estonian research libraries and organisations. In **Belgium**, however, and compared to 2009, the Flemish Community stopped a central funding for big deals, which means that funds are now provided solely by local libraries.

'Big deals' and other agreements with publishers

So-called "big deals" are agreements between libraries, library consortia, governments, or other actors with publishers, consisting of bundles of subscriptions to journals (versus subscriptions to individual titles). Big deals do not

In **Finland**, "*starting from the late 1990s, the national FinELib consortium has negotiated contracts with publishers for the partner organizations. FinELib has outlined licensing policies which are in line with policies developed in other countries.*" In **Portugal**, contractual terms of big deals are transparent to all institutions. "*Moreover, b-on negotiation is done centrally (by the Portuguese NREN) with considerable economies of scale.*" In **Slovenia**, 'big deals' are successfully realised with the consortium COSEC (Consortium of Slovenian electronic collection) and its membership in the international consortium eIFL. In particular, with transparent contracts and the terms of 'big deals', including subscription prices, which are accessible to all partners of the consortium eIFL. Moreover in this Member State "*Acquisition of resources, in cooperation with the largest possible number of partners at an international level, is currently the best strategy.*" Knowledge Exchange partners (**Germany**, **Denmark**, **Netherlands**, **United Kingdom**) have developed a 'multinational licensing tender' (collective licensing of electronic resources), which led to special contracts for 2009-2011 with five publishers. A case such as the one in **Poland** and the Virtual Library of Science "*shows that it is actually possible to achieve cost advantages and greater accessibility of scientific publications at national level,*

which leads to a question whether similar model would be possible at international level." In the **United Kingdom**, "*JISC has developed estimates for the savings to UK universities arising from the 'big deals' for electronic content. It estimates that the "Nesli2" deal has saved the UK HE sector over £40 million since its inception in 2004.* Moreover, "*JISC is investigating whether there are acceptable arrangements whereby hybrid journals can be included in big deals, and plans to report on this in June 2011. There is interest in this work from European and North American bodies.*"

France established a working group at the level of the project Bibliothèque Scientifique Numérique (BSN) to work on global contracts with publishers for a national license. This year, "*they have asked Elsevier to experiment in a few universities [with] a new model not based on big deal.*" The National Research Council of the **Netherlands** also has agreements with publishers. A planned pilot to achieve a single national license never started, but it was replaced with another experiment in which "*the Royal Library will give access to the latest scientific articles of most journals of Elsevier (which they have in deposit anyway) for every citizen of The Netherlands for a small fee. The public libraries also play an intermediary role in this experiment.*" The Dutch government as such does not make the contracts or big deals, but SURF and the UKB (association of the university libraries) negotiate with scientific publishers for all Dutch scientific and educational institutions.

For health-information in **Norway**, The Norwegian Electronic Health Library "*negotiates contracts and buys access to 2300 journals, the most important health-databases, two of the world's leading health-encyclopedia and more.*" For the Higher Education Institutions and the Research Institutes, the task of negotiation with providers of scientific journal packages is fully integrated into Cristin, (Current Research Information System in Norway) from 2011 and "*it is an ambition for Cristin to investigate the possibilities for linking licence agreement negotiations to open access-conditions/publishers OA-policies.*" Since 2010, the Research Foundation in **Germany** (DFG) "*financially supports so-called* "Alliance Licenses" *only under the condition that the publishers whose journals are licensed permit German authors and their institutions to deposit their articles from the licensed journals in open access repositories. Several of the research organisations have membership agreements with publishers on the central payment of publication fees for publications by their scientists in open access journals*". In **Poland**, "*due to the agreement between ICM, acting on behalf of the Ministry of Science and Higher Education, and Springer, open access fees are covered for authors (researchers, students) affiliated with academic, educational or scientific research institutions in Poland, who choose to have their articles published in Springer Open Choice program.*" There is also some dialogue between funders and publishers in **Switzerland**. The Swiss Academies of Art and Sciences (SAHS) has a Memorandum of Understanding with major publishers, which includes the right for authors to deposit articles in an open access repository.

In the **United Kingdom**, "*the Wellcome Trust and other UKPMC funders have agreements with publishers to deposit papers into UKPMC for payment.*"

Iceland features an innovative setup called the Iceland Consortia for electronic subscriptions, hosted by the National and University library. "*It serves not only academics and research institutions but each and every computer in the country that is connected to the Internet through an Icelandic Internet Service Provider (ISP). Thus access to 8.000 journals in full-text, 2.000 journals in A&I and 12 databases are open in all of Iceland, around the clock, irrespective of location or affiliation. This is a unique arrangement with publishers and vendors, and has been in use since 2002 […]. Negotiations with publishers [emphasises] the fact that, in such a small market, vendors/publishers would profit from having only one contact point for the entire country […].*" The agreement with the publishers also includes electronic subscriptions to journals that

are not included in the consortia at a reduced cost to national libraries.

In **Austria** as in many other countries, "*it is the autonomous responsibility of science institutions to make their contracts.*" In **Italy**, there are no public funds allocated for 'big deal' purchase; therefore "*all Italian Universities are grouped in three different national consortia for co-operating and negotiating with publishers in order to have better prices and better usage conditions.*" At the national level, **Spain**'s subscription to ISI WOK and Scopus (recently purchased and coordinated with all the Spanish interested institutions and consortia), managed by FECYT, work on the achievement of economy of scale. In the same way, at the regional level, purchases are made by consortia of university libraries and purchasing group. Transparency is ensured through coordination meetings between the purchasing consortia and groups, which have been held since 2002. There is a similar initiative in the **Czech Republic**, yet created as consortium projects of institutions: "*From time to time (as those projects and licenses are terminating), the Ministry of Education, Youth and Sports creates a programme to fund information sources, where establishing consortia is favourable. This year, for the first time, structural funds were used for this aim as well.*" Nonetheless, this approach does not allow supporting the Prague region, where most research and education capacity is concentrated. In **Greece**, "*significant economies of scale are achieved by aggregating the demands of Greek Universities and Research Centres and signing a single contract with publishers.*"

Funding of open access publishing

In some countries, for example **Germany**, some research organisations fund open access publishing (and/or have institutional memberships with open access publishers) to cover authors' fees. For example, "*the DFG provides lump sums for covering publication costs including open access fees and also has a funding programme* 'Open Access Publizieren' *by which universities can apply for funding in order to cover open access publication charges by university-based authors.*" In **Slovenia**, "*the co-financing of the publication of Slovenian scientific journals is defined [...] and carried out through yearly tenders. The institutions can apply for the co-financing of publishing scientific monographs (also yearly tenders).*" In the **Czech Republic**, the Academy of Sciences monitors special funds to support open access publishing.

Not a national agreement as such either but an interesting initiative, the EC-funded project NECOBELAC (Network of Collaboration Between Europe and Latin American-Caribbean Countries), coordinated by **Italy**'s Superior Institute of Health (ISS), launched a programme to pay the open access publication fees on behalf of European and Latin American co-authors.

Financial support for journals and self-archiving

In **Ireland**, there are initiatives to support the funding of electronic journals, as well as financial support for researchers to self-archive publications where copyright permits it. **Romania** also reported a "*programme dedicated to supporting ST journals and literature.*" In **Norway**, "*journal publishers that receive financial support from the Research Council Norway must comply with the RCN open access policy and in contract allow authors to self-archive accepted versions of scientific articles in open repositories.*"

1.6.4 Investments in dissemination

As expressed by several respondents, comparison of investment in the dissemination of scientific information as compared to total investment in research is difficult as it is not clear what is included in dissemination costs (total purchases of the country of scientific information, budgets of projects on open access, etc.). It is even more

difficult to come up with a figure in the absence of a national policy, as emphasised by **Switzerland** and the **Czech Republic**. **Spain** reported that the difficulty in measuring the level of investments also starts with a comprehensive understanding of the problem for all Member States. **Germany** added that "*there is no governmental survey or systematic measurement of the investment in dissemination of scientific information compared to total investments in research. Some of the research organisations monitor the development of open access in a general or specific way though.*"

Some countries provided figures. In **Austria**, the Science Fund (FWF) allows a global budget of 5% for dissemination costs, which includes costs for open access publishing. In **Montenegro**, the Ministry of Science stimulates authors to publish scientific works in international journals; the investment in the dissemination of scientific information was 4.35% of total R&D investment in 2010. In **Estonia**, the total investments in acquiring research information (including purchase of electronic research information and licenses for databases) went down both in absolute and relative terms (around 2%) but were expected to double in 2010-2011 because of the new initiatives mentioned above. As for **Portugal**, which has negotiated a big deal at national level ensuring free unlimited access to publications of publicly-funded research via the national online library (known as b-on) "*the costs of the national subscription of b-on Knowledge Library Online and of RCAAP assumed by public research funding organizations are of the order of 3% of the funding by the public research funding organization (Science and Technology Foundation (FCT)[…].*" **Romania** estimates investment in dissemination to be around 1.9% of GERD.

Finland stated that "*the increased prices of the licences have shaped the role of scientific libraries.*" and reported that "*70-80 % of the library budgets go to the scientific journals, and the rest to other collections.*" **Luxembourg** reported a budget of about 1M€/year for providing access to (licensed) scientific publications to researchers and the public at large. In **Spain**, the total budget for Scientific Information purchases is roughly estimated at 100 M€. Funding comes either from the national administration (mainly through the Spanish Foundation of Science and Technology), the autonomous regional governments and/or the research institutions and universities.

Often, as pointed out by **Slovakia**, "*the costs of dissemination of scientific information compared to total investments in research cannot be estimated.*" and they are often not known. In **Malta**, there is no data regarding expenditure on dissemination, but it is believed that any such expenditure is minimal. Interestingly, **Finland** mentioned that "*in scientific libraries, statistics are based on ISO standards that do not recognise OA as a separate focus area.*" **Italy** is keen, at the level of the Conference of the Rector of Italian Universities (CRUI), to invest further in the question of spending appropriate amounts on dissemination.

In **Slovenia**, funds devoted specifically for (digital) data management purposes within individual research projects can be considered part of research projects' costs and hence included in R&D expenditures. There has not been such funding yet (at least not in the form of a clearly defined sum allocated for this particular purpose) "*although it is planned for the near future.*"

The **United Kingdom** reported that "*discussions are underway between interested parties on the most appropriate mechanisms for funding open access. The Houghton report (2009) presented a number of models to calculate both the cost and benefits of open access publishing and findings indicated that savings would be generated (…).*"

1.6.5 Measures of open access

The traditional academic measure of impact is citation, but many users of research that do not use citation (professionals, practitioners, business users…). There is much

discussion of the need for new, additional metrics to measure and reflect the worth and utility of research. In terms of open access, two main things need to be measured: its development and its impact.

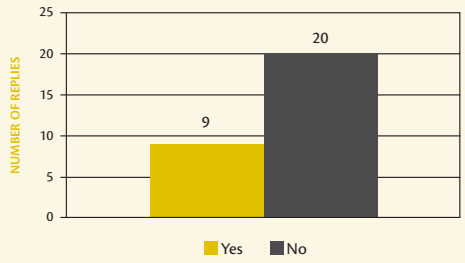

Figure 10: "The development (growth) of open access is measured"

Greece stated that the growth of open access is not officially measured, but that its development is traced via the growth of the Greek repositories registered in DOAR (there is a similar process in **Spain**) and of Greek open access journals registered in DOAJ. Measuring open access with citation counts, however, has not been systematically done yet. In **Ireland**, the development or growth of open access to research data from projects financed by the Environmental Protection Agency is reported to be measured and available at SAFER (Secure Archive for Environmental Research Data); it is also measured spatially by linking download traffic of each data resource on SAFER to its download location.

It is interesting to note that in **Finland**, starting from 2011, the Ministry of Education and Culture will collect more extensive publication data from universities, and that this data will include information about the open access availability of scientific articles: "*at first this information will concentrate on the articles that are published in OA journals, but there are plans to measure the amount of green OA as well.*" Similarly, in **Norway**, the function for monitoring the growth of open access in all publicly funded research sectors will be further developed.

The Health Research Board (HRB) of **Ireland** reported that "*the growth and impact of OA peer-reviewed publications are measured as part of the UKPMC package. The change to mandated OA for HRB-researchers is relatively recent (publications accepted for publication from January 2010) but the HRB reports regularly on the outputs, outcomes and impacts of HRB-funded research.*"

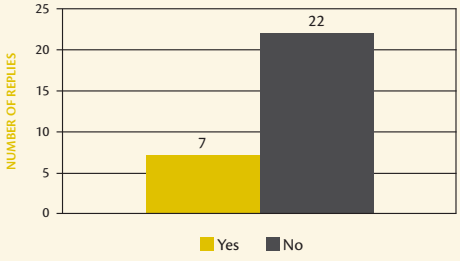

Figure 11: "The impact of OA is measured"

In **Ireland**, a national citation database is under development and, in time, may interact with RIAN and institutional repositories to produce open access metrics. **Romania** reported that "*citation count is used as performance criterion in many evaluation procedures.*" Studies are also on-going in the **United Kingdom**.

In **Spain**, each institutional repository publishes its own statistics and, "*within the RECOLECTA project, a specific module to install in each repository participating in the project will allow the comparison of usage statistics among Spanish repositories and other international repositories*", yet no other open access impact measurements are in place.

Norway measures the price for access to journals but uses Google statistics and Google Scholar as well.

Chapter 2 **Long term preservation**

Long term preservation

Long term preservation is a closely related, yet distinct issue from access and dissemination. Preservation concerns ensuring the long-term storage, care and continuing free accessibility of (research) outputs. It is something that has largely fallen to national libraries to tackle, or other national-level organisations. There are also significant players in the area of preservation on an international scale. While many of the responding countries have put in place notable initiatives or strategies regarding the digital preservation of cultural heritage in general, specific attention to the preservation of scientific information needs to be further developed within most existing national policies and legislative frameworks. Moreover, researchers do not seem to always be aware of preservation of scientific information articles and data as a key issue, although some progress has been made.

2.1 Implementation of the 2006 Commission Recommendation & Council Conclusions on the digitisation and online accessibility of cultural material and digital preservation

"*Although there are many initiatives concerning data preservation and plans for digitisation of cultural heritage, there are still no clearly defined and structured links between the long term preservation of scientific information and national plans for digital preservation.*" The situation in **Estonia** is valid for many other European states. There are indeed various 'e-heritage' projects, as mentioned by **Lithuania**. On a practical or technical level, cultural heritage and preservation of scientific information may be connected, as one may find in **Malta**. The tasks of digital preservation are often regulated, as for example in the case of **Slovenia** with respective legal deposit and archival laws. **Sweden** mentioned "*one arrangement of a more general type (not necessarily scientific) is the LDB Centre (Centre for long-term digital preservation) in Boden. The activities cover digital long-term preservation for archives, libraries and museums. As a starting point, the centre looks for solutions common for all cultural sectors.*"

Among European projects, **Montenegro** reported SEEDI (South East European Digitization Initiative), which aims to develop awareness about digitization of cultural and scientific heritage in the South-Eastern European countries and bring together researchers from the region. In this domain as well, the European Union has been financing many projects, such as PLANETS (Preservation and Long-term Access through Networked Services), whose primary goal was to build practical services and tools to help ensure long-term access to digital cultural and scientific assets. One can also mention projects such a EUROPEANA or PRACE (Partnership for Advanced Computing in Europe).

In **Austria**, there are for the time being "*no structured national plans in long term preservation. A structured approach to the long term preservation of scientific information has only been defined at an institutional level.*" The University of Vienna, the Academy of Sciences and the National Library have developed their own repositories and some databases in order to preserve scientific information. A special law mandates the deposit at the National Library of all published publications.

With a few variations, development at institutional level is the case for several countries, including **Cyprus**, the **Czech Republic** and **Ireland** to name a few. In **Latvia**, as in many other states, dissertations and theses are systematically digitised. As for the **Netherlands**, the country has an e-depot, i.e. a repository for all national scientific and cultural publications.

Spain, moreover, is currently working on a national strategy that coordinates the open access infrastructure, in both organisational and technical terms. The national strategy on preservation of scientific information has not been approached, although some steps have been taken by the Spanish Network of University Libraries (REBIUN) which has finalised its first report on digital preservation for university libraries. **Greece**, however, has now a national strategy on digitization and preservation of both cultural and scientific information, and all universities and research centres "*are soon to have interoperable institutional repositories and other infrastructures.*" The Open Access Scientific Repository of **Portugal** (RCAAP) aims at assuring the long term preservation of its contents: "*the first part of the strategy was to create and establish a vast network of institutional repositories and to allow multiple copies and migration of their contents. In the next year RCAAP will develop a work plan in order to better insure the long-term preservation of and access to digital material. Special attention will be given to establishing policies and procedures for the deposit of scientific material originally created in digital format.*"

In **Denmark** and **Finland**, there is a legal deposit obligation which states that "*all published research publications including electronic publications have to be deposited at*

the National Libraries." As to the project PINDAR (Preservation of Institutional Data Repositories), it aims at ensuring long term preservation of the Danish institutional archives. In **France**, there is an archiving platform for documents in connection with the world of higher education and research. In **Belgium**, "*the national Royal Library's Legal Deposit has an orphan repository (…) where publishers can voluntarily download their publications. Some will be available in open access, others will not.*" **Latvia** is working on the development of a 'Latvian University e-library' to create digital collections, "*thus promoting quality of studies and research, and providing the maintenance and availability of intellectual property of cultural heritage and history of the University of Latvia in an electronic environment.*" In the **United Kingdom**, the Review of e-Infrastructure and subsequent report addresses actions, focusing on establishing an effective mechanism for coordination.

In **Germany**, a digital preservation project for libraries is in course, and a Priority Initiative of major research organisations is working on these issues. A study was also commissioned on these issues, which pointed to solutions for hosting and long-term archiving, which are now being studied. **Denmark** has several on-going projects dealing with the long term preservation of scientific metadata or for preservation of electronic research publications. In the **Czech Republic**, the National Technical Library runs a project called the National Repository of Grey Literature, which aims to collect and preserve *inter alia* digital scientific publications. In the **United Kingdom**, "*the Digital Curation Centre continues to provide a central role* (…) *to support long-term data management and curation of scientific and other research information.*" One can also find direct funding for organisations across the country to tackle preservation challenges at institutional, regional and national levels.

However, as specified by the **Czech Republic**, "*preservation of cultural material will be covered in the policy of the National Library, as well as in the new library policy for 2011-2014.*"

In **Estonia**, "*a new strategy of digital cultural heritage for the years 2011-2014 has been drafted and discussed, also taking into account various guidelines from the European Commission, UNESCO and OECD. There have been various investments from Structural Funds to develop institutional archives and portals.*" **Poland** too has created a programme for digitisation of cultural goods and collection, storage and availability of digital items for the period 2009-2020. At a national level, there are attempts to join the experts and approaches to long-term preservation. For the case of **Slovenia**, one may mention the participants from National archives, cultural heritage and research data archives who took take part in a 'Slovene digital preservation conference' in 2010. As in the case of the **United Kingdom**, activities are generally multi-stakeholder, for example investments effort in infrastructures (capacity and skills) to support research data curation and sharing. In **Romania**, it is interesting to note a thematic project related to collection, inventory, description and conservation of the vegetal genetic resources.

In **Montenegro**, according to the Law on Library Activities, libraries can perform digitization and offer access, but it must be done in application with international and national standards for digitization of cultural heritage. In **Switzerland**, the libraries of Swiss Universities are in charge of repositories, long term preservation and accessibility. In **Iceland**, "*due to the financial crisis and budget cuts, the planned long term preservation of cultural material and digital preservation has been postponed.*"

2.2 Preservation of research results

In **Spain**, as in many European countries, there are no specific provisions for the digital preservation of research results. In **Belgium**, there is no legislation for digital preservation apart from the Copyright Act. In the **Czech Republic** as in many other European countries, special

characteristics are not taken into account or work is in progress, as in **Portugal**. In Europe, there is often preservation of electronically, legally deposited PhD, as the case in **Italy**. However, as pointed out by **Poland**, "*the existing program for digitisation is more concerned with cultural heritage and public domain content, than scientific information and open access, which results in specific features of scientific information being insufficiently taken into account.*"

As spotted by **Slovakia** and developed further by **Ireland**, "*the specific characteristic of most critical importance for scientific information during the setup of a practical system for digital preservation is the IPR issues for the researchers. Researchers are very reluctant to deposit data and information they have generated into an open access data repository. This reluctance is strongest during the stage of the project where journal and conference publications are being prepared, submitted, and reviewed. However there often remains a desire on behalf of the researchers to retain almost indefinite ownership of the data and information.*" In some cases, one can come across 12-month embargo periods on keeping research data and information generated from projects.

In **Austria**, an amendment of the media law enables the National Library to collect media, including websites. In **Finland**, the law on collecting and preserving cultural materials act also covers Finnish on-line publications. Initiatives for authorities to restore and make public data available need legislative changes; they are mapped as the part of the National Digital agenda (Decision of the Council of State in Finland 13.3.2011 concerning improving the accessibility and re-use of public data). In **Slovenia**, the National University Library is responsible for the digital preservation of scientific publications (reports, articles, monographs, journals, etc.), "*while Slovenian archives are responsible for the digital preservation of officially produced scientific documents and data.*"

In the **United Kingdom**, the Legal Deposit system, underpinned by the Legal Deposit Libraries Act, "*requires that a copy of each printed publication published in the UK is deposited, free of charge, in the British Library and five others.*" The UK government has recently consulted on how provisions for extending the legal deposit system to cover various non-print media such as e-journals could be implemented. The UK government is also currently examining how copyright law might be improved to make it easier to for libraries and archives to preserve copyright works for cultural and scientific heritage. Such moves "*have received broad support from the academic community.*" In addition, an independent review into how the intellectual property system can better drive growth and innovation has been carried out in 2011.

Germany also has a legal deposit system in which two copies of every publication in the country must be deposited into the German National Library. This includes dissertations including so-called "professorial dissertations", online-publications and any other electronic publications. In **Germany**, preserving research data over the long term and making them available is considered beneficial for science and research, but must be balanced against the scientific and legal interests of researchers, and specifically the freedom of science and research which is guaranteed by the German constitution. Moreover, "*the protection of the personal data of participants, patients and others affected by the collected data, as well as obligations to third parties – e.g. cooperation partners – have to be taken into account.*" It is however advised to take into consideration differences between scientific disciplines. In the case of preservation of PhD theses, the connection between archivists and librarians is put forward by **Italy**.

Finally, some international projects such as InterPARES ('*The International Research on Permanent Authentic Records in Electronic Systems*') are praised, as by **Italy**, for the support they can provide.

Chapter 3 **Co-operation and co-ordination**

Co-operation and co-ordination

Global challenges call for global responses. The question regarding co-operation focused on co-ordination among Member States in order to define common national funding body principles on open access, to improve the transparency of the contractual terms of 'big deals' financed with public money, to assess the possibilities for achieving economies of scale, and to achieve the interoperability of repositories. There are many networks, national or international events, as well as projects and conferences in which professionals and relevant stakeholders meet. The goal is often how to identify common agendas and how to implement common initiatives. The role of international organisations and umbrella structures is regarded as crucial. The involvement of all stakeholders is very important, whether on the topic of revisiting agreements with publishers, co-ordinating advocacy activities, or encouraging the sharing of good practices.

3.1 National level

In **Austria**, "*the Library of the University of Vienna developed partnerships with the most important scientific publishers [and they] hosted a meeting to discuss open access topics.*" One major activity in **Greece** in 2010 was the second conference on open access organized by the National Documentation Centre, entitled 'Open Access: Science-Education-Public Data'. It is also interesting to mention that the Lithuanian Scientists' Union initiated and organised a conference in **Lithuania** on "*The evaluation of scientific publications, scientific information dispersion and journals quotation index: history, trends and prospects.*" The French-speaking community of **Belgium** organised a workshop on institutional repositories and copyright while the Flemish Association of Librarians, Archivists and Documentalists will cover open access at its next annual conference. As the Belgian partner of OpenAIRE, the University of Ghent invited different stakeholders to a presentation of the project at the Flemish Region Agency for Innovation by Science and Technology (IWT) in June 2011. Moreover, the Belgian Federal Science Policy Office and the Flemish and French Communities are jointly planning yet another major open access meeting. In **Spain**, REBIUN (the Spanish Public Universities and Research Libraries Network) organizes an annual conference that brings together major players in digital scholarly communication. In **Portugal**, regular meetings under RCAAP take place twice a year bringing scientists, librarians and institution together. **Denmark** is also "*arranging a series of meetings/conferences on open access with main stakeholders, e.g. scientists, universities, publishers, funding bodies etc.*" Initiatives in **Luxembourg** also bring stakeholders from the national library, the university as well as the public research centres together several times a year to discuss strategies and improve the access to scientific literature to researchers, as well as the general public. In the **Czech Republic**, there are activities such as meetings of dSpace users (open source software) but no regular communication platform for stakeholders. Seminars are under way to reach other than the "OA specialists".

Germany's Joint Science Conference (GWK) initiated a report on the future information infrastructure in **Germany**: research associations, funding bodies, scientists, libraries and scientific publishers join forces to debate about the infrastructure of the future. The major German research organisations work together in the Priority Initiative 'Digital Information' which has – inter alia – working groups on open access and primary data.

In **France**, the Ministry of Higher Education and Research created in 2010 a working group with scientific publishers, funding bodies, libraries and scientists. In **Finland**, "*the Ministry of Education and Culture organized a round table discussion in June 2010 for all the stakeholders.*" Several open access conferences on recommendations with the Academy of Finland, universities, learned societies and Ministry of Education have also taken place. As for the question of monographs, it "*is discussed with commercial scientific publishers, especially in humanities.*" For instance, in 2010, the Finnish Open Access Group together with the University of Helsinki organized a one day seminar on open access to the results of scientific research in which all the stakeholders were present, including the European Commission. In **Poland**, the "*Polish Coalition for Open Education, an agreement of non-governmental organizations and institutions working in the field of education, science and culture, has a goal of shaping and promoting open education and Open Educational Resources in Poland.*" In **Sweden**, as in some other countries, universities, main funders and the National Library meet under a generic umbrella (openaccess.se). The **Netherlands** also have many projects bringing together stakeholders. In the **United Kingdom**, the UK Open Access Implementation Group is "*a strategic forum that includes representatives of universities, funders, libraries, research managers, infrastructure providers and OA publishers.*" It is within the remit of this group to establish task groups with wider representation to address specific issues. Other initiatives are also organised, including collectively funded pieces of work to establish a common evidence base to inform future policy: "*these projects*

cover the transition to electronic-only journals, economic and organisational modelling of various plausible five-year transitions in scholarly communications (including to OA), and a review of the current gaps in access to research papers."

As reported by **Italy**, "*there are many problems with Italian scientific publishers that have difficulties in recognizing a role for OA in scientific communication.*" In **Malta**, the size of the country and the naturally limited number of stakeholders allows discussions to take place as individual meetings. In **Romania**, initiatives take place rather at the level of learned societies and associations, such as with the Romanian Society of Physics and the Society of the Graduates in Physics, or the National Conference of the Association of Romanian Librarians.

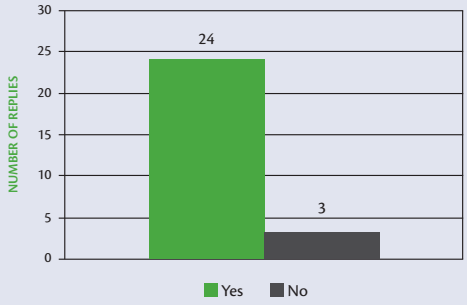

Figure 12:"In your country there are multi-stakeholders activities related to acces, dissemination and preservation"

Meetings between different stakeholders in **Switzerland** have also taken place with the main goal of exchanging views and information. The last annual meeting's main topic was the appropriate funding levels and mechanisms of exclusively electronic publications. **Iceland** also supported a seminar on open access in 2010, which attracted librarians, officials, funding bodies, universities and students, which was an important step in introducing the idea of open access. As for **Norway**, the annual conference hosted by the University Library at the University of Tromsø will be extended to one and a half days with the ambition of making the conference more international.

3.2 International level

Slovenia organised an international conference on 'Open access to the achievements of Slovenian scientists', which brought together the main stakeholders of scientific information. The newly launched open data project, which will promote the ideas of data sharing in all fields of sciences and humanities, will also bring together main stakeholders in order to find the best workable solutions for the country. **Belgium** reported the launch of the 7th Framework Programme project OpenAIRE in Ghent in December 2010, with the opening by European Commission Vice-President Neelie Kroes under the aegis of the Belgian Presidency of the Council of the EU. The partnership created by OpenAIRE was often mentioned by respondents as an important contribution in enhancing open access. The 'Berlin Open Access' conferences run by **Germany**'s Max Planck Gesellschaft and varying partner institutions also stimulate EU participation. These conferences are follow-up events to the first "Berlin conference" which lead to the well-known Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities. The Open Access Week, organized by SPARC (the Scholarly Publishing and Academic Resources Coalition) is an annual event that also allows for the promotion of understanding of open access worldwide.

The Fund for Scientific Research (F.R.S.-FNRS) of the French Community of **Belgium** organised in September 2011 an international workshop on the Green Road model. Several references were also made to the European Heads of Research Councils (EUROHORC)'s working group on Open Access and their recommendations on open access. As reported by **Switzerland**, "*in the frame of EUROHORCs efforts are made in order to better coordinate open access rules between the National Funding Agencies.*" Other noteworthy international projects are

the Alliance for Permanent Access (APA) and the related EU projects Opportunities for Data Exchange (ODE) and Alliance Permanent Access to the Records of Science in Europe Network (APARSEN).

Several respondents mentioned international collaboration with (or within the remit of) UNESCO. **Sweden**, among other EU Member States, submitted a draft resolution to the UNESCO General Conference at its 35th session in 2009. The resolution recommends to the Director-General to undertake a mapping of existing open access initiatives with the aim of better defining and strengthening UNESCO's role in promoting open access, and of developing a draft strategy on how UNESCO may strengthen its contribution to the promotion of open access.

Universities are generally extremely active. Beside some European initiatives, ERA-Net, ESFRI initiatives and other FP funded projects (or extensions, such as the Open Planets Foundation), there are many bilateral initiatives. Some respondents mentioned their participation in the European University Association (EUA)'s task force on open access, which published recommendations on the issue.

As for the issue of access to data, it is specifically tackled by the Organisation for Economic Co-operation and Development (OECD)'s Principles and Guidelines for Access to Research Data from Public Funding. The **United Kingdom** has been working directly with the OECD "*on coordination of activities, policies, principles etc. regarding data and access.*"

As for defining common national funding bodies principles on open access, "*this area of cooperation has a great potential* [for **Slovenia**] *as it can bring to the fore international best practices solution where no national exist.*" Moreover, as illustrated for the case of **Romania**, "*national funding bodies are aware of good practices drawn from international collaboration like European Bio-Banking and Biomolecular Resources, Research Infrastructures Network for Research in Biodiversity, Council of European Social Science Data Archives, Common Language Resources and Technology Initiative, CERN etc.*" In **Poland**, national organisations participate in COMMUNIA Thematic Network, which aims, inter alia, at helping main stakeholders to define their principles on open access in the context of the digital public domain.

The University of Tromsø in **Norway** "*is a member of a newly established network – lead by PKP and SPARC Europe - to increase co-operation and exchange of information and ideas between stakeholders in open access publishing in Europe, and to increase stakeholder influence towards PKP.*"

3.3 Multi-national

Knowledge Exchange, which is a collaborative effort between entities in four countries (**Denmark**, **Germany**, **the Netherlands**, **United Kingdom**), remains an important and innovative co-operation effort among Member States.

In **Belgium**, the body responsible for the national research network for Belgian universities, higher education colleges, research centres and government departments signed a collaboration agreement with research networks in **France** and **Luxembourg** "*to launch a new superfast transnational research network. Dubbed "Project IOT@", the new network is expected to be operational by the second quarter of 2011.*"

In **Spain**, FECYT organized in 2010 the 'Seminar for open access in science information: Policies for the development on open access on scientific information', a meeting that gathered stakeholders from Southern European Countries. The objective was to present the state of open access in each country and to debate and propose recommendations for further development in Southern Europe. The meeting was closed with the so-called

Alhambra Declaration, a guide with recommendations and compromises of the signatories to foster OA in a coordinated manner. Librarians, policy makers, publishers and researchers were brought together. The Alhambra Declaration was signed by representatives from **Spain**, **Portugal**, **France**, **Italy**, **Greece** and **Turkey**.

In **Ireland** and "*in the interest of moving towards a European PMC, the UKPMC Funders Group has offered to extend affiliate membership to suitable funding organisations in other European countries, including the HRB and SFI.*"

In 2009 the Wellcome Trust (**United Kingdom**) met with the Science Research Fund in **Austria**, Telethon **Italy**, the Science Foundation and Health Research Board of **Ireland** "*to discuss membership in greater details. These funders subsequently joined UKPMC until July 2011.*"

Institutions from **Austria** and **Germany** co-operate in the project open-access.net to improve information, knowledge and discuss on open access.

In 2010, after a protocol was signed between the governments of **Portugal** and **Brazil**, RCAAP worked with Brazilian institutions in order to integrate each other's OA scientific repositories in both search engines, create a Portuguese-Brazilian Directory for IR and Journals, and organise the 1st Portuguese-Brazilian OA conference, which is to be held annually.

CSIC, within its policies for open access, launched the **Latin-American** Index of Information and Knowledge (I3C) that aims to integrate a national repository of the high quality scientific publications of research edited in **Spain**. The objectives are to generate a system of open access scientific contents (especially in humanities and social sciences) in a platform with the referential tools necessary for the recovery of the bibliographical information, and to be able to generate usable indicators in processes of scientific evaluation and bibliometric studies and dissemination of this output. The program of Support for Spanish Scientific Journals (ARCE) run by the FECYT will be part of I3C, being the scientific quality assessment body for the participation on the project.

In **Montenegro**, "*the organisational model of the COBISS system and the regional COBISS.Net, enables free of charge flow of bibliographic material among the participating countries. To date, the COBISS.Net agreement has been signed by six countries:* **Bosnia and Herzegovina, Bulgaria**, **Montenegro**, **Macedonia**, **Slovenia** *and* **Serbia**."

One may also note an international co-operation initiative between from the **United Kingdom**'s PubMed Central (UKPMC) and the **United States** National Institutes of Health (NIH) free digital archive of biomedical and life sciences journal literature.

Following the 2010 EC "Policy Workshop on access to and preservation of scientific information", **Ireland** set up an online forum for this work.

Chapter 4 Role of the European Commission and the European Union

Role of the European Commission and the European Union

Discussions involving the Commission, other European institutions and European governments help define the Commission's guidance for national authorities and bodies. The question asked in this section was about the role that respondents see for the European Commission/ European Union. Answers sometimes went further than considering how and when, in a sector where both public and private interests are strong, the European Union can speak with a 'single voice'. Respondents were generally very favourable regarding the role that the Commission and/or the EU has or could develop further, whether on specific topics (data, copyright, etc.) or regarding the benefits that Member States could derive from Community action. As one respondent underlined, there is considerable potential for international bodies to play a leading role in co-ordinating both nationally and internationally funded work. It is increasingly important that national infrastructures, embedded in national university and research environments, are seen as the basis on which international developments build in many disciplines, perhaps especially outside 'big science'. It was generally felt that the European Commission has the position and visibility to play a leading part in the debate on access to and preservation of scientific information.

Stimulate & support capacity-building, exchange of best practices, and co-ordination of policies

This unsurprisingly was the first answer for many respondents. **Belgium** for example wrote that "[The EC/EU should] *stimulate the coordination of policies and the exchange of good practices between Member and non Member States.*" and **Ireland** added that "*EU support of OA and coordination of OA across Member are vital for the exchange of scientific and research information within and outside the EU.*" Moreover, "*Capacity-building through co-ordination instruments about* [joint promotion of open access policies at the national level] *would also be effective*", as pointed by **Montenegro**. The objective for **Germany** is to "*enhance common standards between Member States or even to help develop international infrastructures.*" International co-operation was also stressed, in particular between the European Commission and the OCDE, in particular because the latter, according to **Luxembourg**, has "*insights not only into transatlantic policies on this subject but also on the policies of the BRICS countries.*"

It is also interesting to take note of a comment from the **United Kingdom** "*There is a requirement for a coordinated approach to monitoring compliance with these policies, in a positive spirit of enabling good practice to spread, rather than to penalise non-compliance*". The **United Kingdom** also raised concerns that "*it* [would] *be important to build on existing national infrastructure and practices.*" **Luxembourg** wrote that "*European policies should be developed in order to guarantee strategic advantages for Europe.*"

The **United Kingdom** also suggested a more proactive role for the European Commission in terms of "*detecting specific national developments with momentum and pushing for their wider adoption* [e.g. practical implementation of OA for data cited from OA papers]".

Finally, support was sometimes requested at the highest level. As pointed out by **Cyprus**, "*one of the main principles* [of open access] *should be that research literature, especially when publicly funded, must remain accessible to everyone at no charge and regardless of the user's economic ability.*"

Monitor progress in EU Member States

Several Member States were supportive of the role of the European Commission in monitoring the progress by Member States, e.g. **Greece** when it suggested that "*The European Commission has a key role in undertaking central initiatives with the aim of [...] regularly monitoring the progress per Member State.*"

Develop EU copyright rules for research

"*The situation in the field of copyright protection does not reflect the conditions of modern digital preservation of information. Amendments should be made in the legislative acts to align the legislation in the European level,*" as suggested by **Latvia**. There were many comments on that topic, pointing at the legislative role of the European Commission and saying in substance that "*There should be a common sense of how to change copyright laws in Europe to enable all scientists to disseminate their work*" (**Austria**). As pointed out by **Greece**, the European Commission should be "*facilitating and coordinating the debate to resolve critical issues such as IPRs.*"

Some comments went further and, inspired by some recent discussions in Germany, **Denmark** mentioned introducing "[...] *a secondary exploitation right for authors of academic contributions predominantly originating within the framework of publicly funded tuition and research activity. This would give the author an inalienable right to exploit his work a second time even if he has already transferred exclusive exploitation rights to his work to a publisher and to permit others to reproduce*

and distribute his work and/or to communicate it to the public via the internet. […] It "*would be beneficial if the European Commission would consider […] taking legal actions supporting free access to scientific information on a European level.*"

Belgium stressed the problem of digitization. In a more general context, the suggestion was summarised by **Latvia**'s call for a united EU copyright policy for all scientists in Europe that is adapted to the digital age.

Amplify the open access policy in the Framework Programmes

Many respondents, for example **Ireland**, mentioned their support for the Open Access Pilot in FP7 and the principle of an open access mandate in the Framework Programmes, e.g. on the basis that "*EU mandates regarding OA for publications arising from EU research funds* [would] *greatly increase the distribution and effect of the results of EU funded research.*"

Spain and others also suggested encouraging commitments for the practice of open access at the level of the submission of proposals and giving "*positive consideration in FP calls to researchers with OA publications in their institutional repositories.*"

Finance activities through the Framework Programmes

Unsurprisingly, nothing spoke against the continuation of the financing of successful EC-funded activities related to open access. As **Austria** stated, "*in the preparation of the* [next Framework Programme], *the EC should think about building up special programs to (co)finance long term preservation projects and to implement open access for all research projects funded by the FP.*"

Develop tools to quantify benefits and progress of open access

Some respondents called for specific attention on that topic, because "*without some form of quantitative measurements, the scientific community (particularly the academic community) will continue to resist attempts to works towards a truly open model of data archival, management, and dissemination*" (**Ireland**). As **Lithuania** put it, the "*creation of new public access quotation index (analogical to the ISI Web of Science)*" would be particularly welcome.

Support the development of repositories

The issue of (European) repositories – their interoperability but not only – raised several concerns. For instance, "*services and tools that allow repositories to become core platform resources for research and the exploitation and take-up of research* [are needed]" (**Ireland**). Moreover, **Latvia** mentioned that "*collaboration should be continued to develop open access repository networking in Europe and to develop the projects to support common standards for open access repository software's and compatibility.*" Last but not least, as underlined by **Ireland**, "*there is no European-wide repository for biomedical research in Europe. […] – a Europe PubMed Central.*"

Prepare for the challenge brought by scientific data

The issue was mentioned by many respondents concerned by the complexity of the topic, and therefore suggested that "*The EU* […] *promote initiatives on the standardization of the collecting methods of scientific data*" (**Cyprus**). Moreover, "*a stronger emphasis on funding documentation regarding the archival of scientific data and information in open repositories is necessary*" (**Ireland**).

Negotiate with publishers

Belgium raised the issue that the EC should be involved in the effort to "*limit the monopoly of big publishers on scientific communications.*" Denmark and other respondents added that, since "*negotiations on licensing agreements are performed locally in each Member State*" and since "*the process is costly, time consuming and terms differ from deal to deal*", the Commission should "*start joint negotiations on sustainable business models with publishers on behalf of all Member States in order to support the open access agenda across Europe.*"

Stimulate the collaboration of industrial partners

Open access to publications is often (wrongly) understood as an obligation to publish, hence it is taken by industrial partners as a practice that is at odds with patenting. As noted by the Netherlands "*if universities and industry work together in consortia, these consortia have to decide how to deal with the accessibility of research results. Public access to research should not be at the expense of cooperation between universities and industry.*" This shows that European-level messages have to be clear and further explained, and mandates must be unambiguous (in particular when data are concerned) in order not to alarm some potential industrial partners.

Annexes

Country information

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
AT (Austria)	BMWF	
BE (Belgium)	Scientific and Technical Information Service (Belgian Federal Science Policy Office - Belspo)	STIS informs federal scientific institutions of the OpenAire initiative **http://eurofed.stis.belspo.be/Newsletters/Eurofed_47.htm** Memorandum of the Flemish (regional) authorities: **http://www.vowb.be/documenten/2008/VVBAD_Memorandum_2009_def.pdf** Policy commitment of the French Community of Belgium (regional) : **http://www1.frs-fnrs.be/fr/component/content/article/59-orienter-la-recherche/317-roadmap-eurohorcs.html** **http://www1.frs-fnrs.be/fr/component/content/article/19-paysage-de-la-recherche/49-universites-de-la-cfb.html** The Open Repository and Bibliography (ORBi) initiative of the University of Liège contains a brief but rare summary of OA promotion in Belgium : **http://orbi.ulg.ac.be/project?id=03** New Open Access website: **http://www.openaccess.be**
BG (Bulgaria)		
CY (Cyprus)	Planning Bureau	
CZ (Czech Republic)	1. Academy of Sciences 2. Technology Centre ASCR	

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
DE (Germany)	Federal Ministry of Education and Research	**www.tib.uni-hannover.de** **www.allianz-initiative.de/en/** **www.allianzinitiative.de/en/core_activities/research_data/principles/** **www.gwk-bonn.de/fileadmin/Papers/Rahmenkonzept-WGL.pdf** **www.leibniz-gemeinschaft.de/?nid=infrastr&nidap=&print=0** **www.allianzinitiative.de/en/core_activities/research_data/** **www.dfg.de/download/pdf/presse/das_neueste/joint_statement_data_sharing_public_health_100525.pdf.** **http://nbn-resolving.de/urn:nbn:de:kobv:11-10098082** **www.ratswd.de/eng/dat/fdz.html.** **www.pangaea.de/about/)** **www.dini.de/dini-zertifikat/** **www.gwk-bonn.de/index.php?id=205** **www.knowledge-exchange.info** **www.eua.be/Libraries/Page_files/Recommendations_Open_Access_adopted_by_the_EUA_Council_on_26th_of_March_2008_final_1.sflb.ashx** **www.nationallizenzen.de/knowledge-exchange** **www.allianzinitiative.de/fileadmin/hosting_studie_e.pdf** **www.open-access.net**
DK (Denmark)	Danish Agency for Science, Technology and Innovation	

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
EL (Greece)	General Secretariat for Research and Technology, Ministry of Education/gsrt, life long learning and Religious Affairs National documentation center / national hellenic research foundation/nhrf, Ministry of Education, life long learning and Religious Affairs	**www.gsrt.gr** , **www.openaccess.gr**
ES (Spain)	Spanish Foundation for Science and Technology (FECYT)	RECOLECTA: National Program for the creation of the Spanish network of freely accessible scientific digital repositories: **www.recolecta.net** Bill of the Spanish Law for Science, Technology and Innovation **http://www.micinn.es/portal/site/MICINN/menuitem.29451c2ac1391f1febebed1001432ea0/?vgnextoid=6ba4259e8e5f6210VgnVCM1000001d04140aRCRD&lang_choosen=en ;** OpenAIRE portal: Spanish OA National Desk **http://www.openaire.eu/index.php?option=com_content&view=article&id=90&Itemid=104&lang=en;** Web page of the Research Group: "Open Access to Science", covering aspects about OA in Spain **http://www.accesoabierto.net** Web page on the Seminar about Open access on scientific information: Policies for the development of open access in the South of Europe **http://oaseminar.fecyt.es**
EE (Estonia)	Ministry of Education and Research	Consortium of Estonian Libraries Network: **http://www.elnet.ee/en/** Ministry of Education and Research: **http://www.hm.ee/index.php?1511089** Research and Development and Innovation Strategy "Knowledge-based Estonia" 2007-2013: **http://www.hm.ee/index.php?popup=download&id=6175** Estonian Research Infrastructures Roadmap **https://www.etis.ee/Portaal/includes/dokumendid/Teekaart.pdf** (page 59)

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
FI (Finland)	Academy of Finland Ministry of Education and Culture	**www.aka.fi** University of Helsinki web pagen on self-archiving **http://www.helsinki.fi/openaccess/open%20access/english/index.html** National Open Access Group FinnOa **www.finnoa.fi** **www.aka.fi** The Finnish Social Science Data Archive: **http://www.fsd.uta.fi/english/** The National Digital library **http://www.kdk2011.fi/en/long-term-preservation** Legal deposit: **http://www.nationallibrary.fi/publishers/deposit.html** OA country status at the pages of OpenAIRE: **http://www.openaire.eu/index.php?option=com_content&view=article&id=80%3Aoa-finland&catid=7%3Anlo&Itemid=98&lang=en** Arja Kuula & Sami Borg (2008). Open Access to and Reuse of Research Data - The State of the Art in Finland. University of Tampere. Finnish Social Science Data Archive; 7. **http://www.fsd.uta.fi/julkaisut/julkaisusarja/FSDjs07_OECD_en.pdf** Marjut Salokannel: University of Helsinki opens its research vaults: a few words on open access and the new research environment in Finland. ScieCom Info, Vol. 4, No 2-3 (2008) **http://www.sciecom.org/sciecominfo/article/view/653/447** Jyrki Ilva: Building a repository infrastructure for Finland. ScieCom Info, Vol 5, No 3 (2009) **http://www.sciecom.org/ojs/index.php/sciecominfo/article/view/1763/1392** Herkko Hietanen, Anna-Kaisa Sjölund: Theseus.fi: Open Access Publishing in the Finnish Universities of Applied Sciences. ScieCom Info, Vol 5, No 4 (2009) **http://www.sciecom.org/ojs/index.php/sciecominfo/article/viewFile/1814/1409** Kimmo Koskinen, Arja Lappalainen, Timo Liimatainen, Arja Niskala, Pekka J Salminen, Eija Nevalainen: The current state of open access to research articles from the University of Helsinki. ScieCom Info, Vol. 6, No 4 (2010) **http://www.sciecom.org/ojs/index.php/sciecominfo/article/view/4761/4332**

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
FR (France)	Ministry of Higher Education and Research	Since 2008 Couperin has been operating a website dedicated to open archiving **www.couperin.org/archivesouvertes** to foster the development of open archives in higher education institutions
HU (Hungary)		
IE (Ireland)	Irish Universities Association (IUA), Higher Education Authority; (HEA) Science Foundation Ireland (SFI); Health Research Board (HRB), Environmental Protection Agency (EPA), IRCSET (Irish Research Council for Science, Engineering and Technology)	**http://rian.ie/** **http://www.sfi.ie/funding/grant-policies/open-access-availability-of-published-research-policy/.** **http://lists.deri.org/mailman/listinfo/oaeu** HRB General Terms and Conditions for Research Awards: **http://www.hrb.ie/research-strategy-funding/grant-holder-information/grant-conditions/** HRB open access policy: **http://www.hrb.ie/research-strategy-funding/policies-and-guidelines/policies/open-access/** EPA: **http://www.epa.ie/downloads/pubs/other/corporate/oea/research/researchtcandguides/name,14288,en.html** **http://www.epa.ie/downloads/forms/research/datasets/name,14413,en.html** **http://erc.epa.ie/safer/information/aboutSAFER.jsp** IRCSET: **http://www.ircset.ie/Default.aspx?tabid=102**
IT (Italy)	Ministry of Education, University and Research (MIUR)	**http://www.crui.it/HomePage.aspx?ref=894** **http://wiki.openarchives.it/index.php/Pagina_principale** **http://www.openarchives.it/pleiadi**
LT (Lithuania)	Kaunas University of Technology	
LU (Luxembourg)	Ministry of Higher Education and Research in cooperation with the National Research Fund (FNR) and the National Library (BNL)	**www.bnl.lu**

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
LV (Latvia)	Ministry of Education and Science	Latvian National Library **http://www.lnb.lv/lv/digitala-biblioteka** Latvian Academic Library **http://www.acadlib.lv/index.php?&21** Library of Latvian University **http://www.lu.lv/biblioteka/resursi/datubazes/** **www.periodika.lv - web page where digitalised newspapers can be found**
MT (Malta)	Malta Council for Science and Technology	
NL (the Netherlands)	Ministry of Education, Culture and Science	
PL (Poland)	Interdisciplinary Centre for Mathematical and Computational Modelling, University of Warsaw	**http://otwartanauka.pl/**
PT (Portugal)	FCCN – Foundation for National Scientific Computing, the Portuguese NREN – National Research and Education Network	**Open Access Scientific Repositories** in Portugal On 27 November 2006 the Council of Rectors of Portuguese Universities (CRUP) joined the Berlin **Declaration on Open Access to Knowledge in the Sciences and Humanities**
RO (Romania)	Ministry of education and research	**http://www.vr.se/inenglish/aboutus/policies/openaccess** **http://www.kb.se/OpenAccess/Hjalptexter/English/** **http://www.ub.gu.se/swepub.se/english** **http://kva.se/en/News/news-2008-2001/The-Royal-Swedish-Academy-of-Sciences-supports-free-access-to-scientific-results/**
SI (Slovenia)	Ministry of Higher Education, Science and Technology	
SK (Slovakia)	Slovak Centre of Scientific and Technical Information	**www.vedatechnika.sk**, **www.cvtisr.sk**

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
UK (United Kingdom)	Department for business, innovation & skills	Department for Business, Innovation and Skills: **www.bis.gov.uk** Research Councils UK (RCUK): **www.rcuk.ac.uk** Joint Information Systems Committee: **www.jisc.ac.uk/** The Intellectual Property Office of the UK **www.ipo.gov.uk/** Research Information Network (RIN): **www.rin.ac.uk/** Sherpa: **www.sherpa.ac.uk/about.html** Digital Curation Centre: **www.dcc.ac.uk/** Universities UK: **www.universitiesuk.ac.uk/** Higher Education Funding Council for England: **www.hefce.ac.uk** Scottish Funding Council: **www.sfc.ac.uk** Higher Education Funding Council for Wales: **http://www.hefcw.ac.uk/home/home.aspx** National Grid Service: **www.ngs.ac.uk** A UK HE sector group has been established to coordinate the implementation of open access in the UK. It includes many of the organisations mentioned above. The Open Access Implementation Group website will be live shortly at: **http://www.open-access.org.uk**. Work is being commissioned to collate relevant information and guidance on this site. Funder policies on OA are summarised at: **http://www.sherpa.ac.uk/juliet/** Institutional policies on OA are summarised at: **http://www.eprints.org/openaccess/policysignup** (both of these are international in scope) For preservation, add Digital Preservation Coalition: **http://www.dpconline.org/**
CH (Switzerland)	State Secretariat for Education and Research	
IS (Iceland)	Ministry of Education, Science and Culture	Science and Technology Policy Board web page. Link on national policy: **http://vt.is/english/.** Web page on open access movement in Iceland: **http://openaccess.is/index.php?page=english**

Country	Organisation	Internet links to pages containing information on national policies and/or other useful information
ME (Montenegro)	Ministry of Science	**http://www.mna.gov.me** **http://www.researchgate.n** **http://www.cnb.me**
NO (Norway)	Ministry of Education and Research	

Questionnaire on national open access and preservation policies

Part A - Respondent

1. General information

Country: .....

Organisation: .....

Name of respondent: .....

Contact data: .....

In what capacity do you work on open access and/or preservation issues? .....

Internet links to pages containing information on national policies and/or other useful information: .....

.....

Part B - Strategies in your Member State

2. Policies in place for dissemination of and access to scientific information (including information on how these policies are financed)

Please describe, or update the situation as reported in 2009.

.....

.....

.....

Please also answer the following (you may have to bring clarifications in the box above):

2.1 Generally speaking, the situation has (even slightly) improved since 2009:

☐ Yes

☐ No

2.2 Your country experienced problems in the implementation of the 2007 Council Conclusions (e.g. legal barriers):

☐ Yes

☐ No

2.3 Policies (or overall strategies) are in place:

☐ Yes, at national level

☐ Yes, at regional level

☐ No

2.4 Laws or legal provisions encouraging or mandating OA are in place:

☐ Yes, at national level
☐ Yes, at regional level
☐ No

2.5 Some funding bodies have OA policies:

☐ Yes (please provide a list)
☐ No

2.6 Some universities and research centres have OA policies:

☐ Yes (please provide a list)
☐ No

3. Policies and arrangements in place aiming to provide open access to peer-reviewed scientific journal articles resulting from public research funding

Please describe, or update the situation as reported in 2009.

.....

.....

.....

Please also answer the following (you may have to bring clarifications in the box above):

3.1 There are special incentives in place to encourage researchers to provide OA to their publications:

☐ Yes
☐ No

3.2 There are some agreements regarding open access between funding bodies and publishers:

☐ Yes
☐ No

3.3 In the case of funding body policies on OA, research contracts or grant agreements include a specific reference to provide open access:

☐ Yes (please provide phrasing)
☐ No

4. Policies and arrangements in place aiming to provide open access to other publicly funded research results (e.g. research data)

Please describe, or update the situation as reported in 2009.

5. Assess the situation regarding:

5.1 The way in which researchers exercise their copyright on scientific articles

Please describe, or update the situation as reported in 2009.

5.2 The level of investments in the dissemination of scientific information as compared to total investments in research

Please describe, or update the situation as reported in 2009.

Please also answer the following (you may have to bring clarifications in the box above):

5.2.1 The development (growth) of OA is measured:

☐ Yes
☐ No

5.2.2 The impact of OA is measured (examples: citation count, impact on R&D budget, increased access by specific stakeholders, e.g. SMEs, uptake of research results leading to innovative findings)?

☐ Yes
☐ No

5.3 The use of financial mechanisms to improve access (e.g. refunding VAT for digital journal subscriptions to libraries)

Please describe, or update the situation as reported in 2009.

6. Policies and activities with regard to repositories ('open archives') of scientific information (including repository sustainability and interoperability)

Please describe, or update the situation as reported in 2009.

7. Activities bringing together main stakeholders in the debate of scientific information (e.g. scientists, funding bodies librairies, scientific publishers)

Please describe, or update the situation as reported in 2009.

Part C – Co-ordination between Member States

8. Assess the situation regarding the way your Member State has been involved in exploring possibilities for co-ordination e.g.

8.1 defining common national funding bodies principles on open access

Please describe, or update the situation as reported in 2009.

8.2 improving transparency of the contractual terms of 'big deals' financed with public money and assessing the possibilities to achieve economies of scale by demand aggregation

Please describe, or update the situation as reported in 2009.

8.3 working towards the interoperability of repositories of scientific information in Member States

Please describe, or update the situation as reported in 2009.

8.4 (other)

Please describe, or update the situation as reported in 2009.

Please also answer the following (you may have to bring clarifications in the box above):

8.4.1 Your country - or organisations in your country - works in collaboration with others on topics related to access, dissemination and preservation:

☐ Yes
☐ No

Part D – Long term preservation of scientific information (publication and data)

9. Structured approach to the long term preservation of scientific information (whether incorporated in national plans for digital preservation) in line with Commission Recommendation of 24 August 2006 and Council Conclusions of 13 November 2006 on online accessibility to cultural material and digital preservation)

Please describe, or update the situation as reported in 2009.

10. Specific characteristics of scientific information taken into account when setting up the legislative framework (including legal deposit) or practical set-up for digital preservation

Please describe, or update the situation as reported in 2009.

Part E – Role of the European Commission/European Union

11. Role that you see for the European Commission/European Union in terms of policies

Please describe, or update the situation as reported in 2009.

Part F – Additional comments

12. Any additional comment or suggestion that have not been covered by the questionnaire

European Commission

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Analysis of a questionnaire to the European Research Area Committee

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New information technology tools have evolved and will continue to change the way in which researchers can access, share and use scientific information among their peers, as well as disseminate it to the public at large.

The present report is the analysis of the answers to the questionnaire that the European Commission prepared on open access and preservation policies in Europe, with a view to taking stock in 2011 of the status of implementation of the 2007 Council conclusions on scientific information in the digital age.

With the new ambitious goals in the context of the European research area (ERA) and the 'Innovation Union' to create an open space for knowledge, research and innovation to thrive, policy regarding scientific information is gradually entering a phase of consolidation in Europe.

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