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DIRECTORATE FOR SCIENCE, TECHNOLOGY AND INDUSTRY
COMMITTEE FOR SCIENTIFIC AND TECHNOLOGICAL POLICY

Access to Research Data: Progress on Implementation of the Council Recommendation

Paris, 23-24 March 2009

This document summarises the results of a short OECD questionnaire. It highlights the main features and current practices of governments in 17 OECD countries regarding the implementation of access to research data from public funding. The document is submitted to the 94th Session of the CSTP for discussion.

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1.   Background

1.   In January 2004, ministers of science and technology of OECD countries discussed the need for international guidelines on access to research data. At that meeting, the governments of the 30 OECD countries and of China, Israel, Russia and South Africa adopted a *Declaration on Access to Research Data from Public Funding*. In this declaration, they recognised the importance of access to research data and invited the OECD "to develop a set of OECD guidelines based on commonly agreed principles to facilitate optimal cost-effective access to digital research data from public funding to be endorsed by the OECD Council at a later stage". See:
http://www.oecd.org/document/15/0,3343,en_2649_34269_25998799_1_1_1_1,00.html

2.   This request was taken up by OECD's Committee for Scientific and Technological Policy (CSTP) which launched a project by asking a group of experts to develop a set of principles and guidelines. The experts drafted a first set of principles and guidelines and engaged in several rounds of consultation with research institutions and policy making bodies in the OECD member countries to achieve a consensus. A workshop involving key stakeholders was held in Paris in February 2006 which also contributed to this process.

3.   The principles and guidelines that resulted from this extensive consultation process were approved by the OECD's Committee for Scientific and Technological Policy in October 2006. On 14 December 2006, the Council endorsed an OECD Recommendation on Access to Research Data from Public Funding [C(2006)184]. This Recommendation was based on the CSTP work.

4.   Following the endorsement by Council in December 2006, the Recommendation, including accompanying Guidelines and Principles, was subsequently published in 2007 and made available on the OECD Internet site, at:
http://www.oecd.org/document/55/0,3343,en_2649_34269_38500791_1_1_1_1,00.html

5.   The *Principles and Guidelines* apply to research data that are gathered using public funds for the purposes of producing publicly accessible knowledge. The aims and objectives are to:

- Promote a culture of openness and sharing of research data among the public research communities within member countries and beyond;

- Stimulate the exchange of good practices in data access and sharing;

- Raise awareness about the potential costs and benefits of restrictions and limitations on access to and the sharing of research data from public funding;

- Highlight the need to consider data access and sharing regulations and practices in the formation of member countries' science policies and programmes;

- Provide a commonly agreed upon framework of operational principles for the establishment of research data access arrangements in member countries;

- Offer recommendations to member countries on how to improve the international research data sharing and distribution environment.

6.   The OECD Council Recommendation that gives effect to the *Principles and Guidelines* included the following requirements:

- **The OECD Council RECOMMENDS** *that Member countries take into consideration the Principles and Guidelines on Access to Research Data from Public Funding set out in the annex to this Recommendation and which form an integral part thereof and apply them, as appropriate for each Member country, to develop policies and good practices related to the accessibility, use and management of research data;*

- **The OECD Council INSTRUCTS** *the Committee for Scientific and Technological Policy to review the implementation of this Recommendation as necessary;*

- **The OECD Council INSTRUCTS** *the Committee for Scientific and Technological Policy to review the Principles and Guidelines on Access to Research Data from Public Funding and when appropriate, to take into account advances in technology and research practices, with the intention of further fostering international co-operation.*

7.   Thus, in adopting the Recommendation, the OECD Council instructed the CSTP to review the implementation of the Recommendation. The OECD Secretariat has based this present review on a questionnaire that was developed by the Secretariat and the expert group on data access prior to the finalisation of the Recommendation.

8.   The issues set out in the questionnaire were also included in the CSTP questionnaire to accession countries (see DSTI/STP(2008)14). Responses from member countries to these same questions thus will help CSTP to assess the level of implementation of this Recommendation that might be expected from the accession countries. For further details on accession countries see DSTI/STP/ACS(2008)6/ANN6, DSTI/STP/ACS(2009)1, DSTI/STP/ACS(2009)2 and DSTI/STP/ACS(2009)3.

9.   This document summarises the results of the aforementioned short questionnaire (see Annex 1) sent to CSTP delegates in September 2008. The deadline for responding was extended until 20 February 2009. The document highlights the main features and current practices of OECD governments regarding the implementation of access to research data from public funding.[1] The survey responses are qualitative in nature and are not based on representative samples within countries. It should be noted that the completeness of the responses varied between countries and within sections of the questionnaire.

10.   As at 3 March 2009, 17 OECD member countries completed the survey. The countries that participated were: Australia, Belgium, Czech Republic, Denmark, Finland, France, Germany, Italy, Japan, Korea, New Zealand, Norway, Poland, the Slovak Republic, Switzerland, the United Kingdom and the United States.

2.   Summary of results

Impact of sharing research data

11.   The questions posed are at Annex 1. The majority of respondents cited that increased access to, and the sharing of research data, in digital form would have a significant impact on the progress of science

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[1] The *Principles and Guidelines* are principally aimed at research data in digital, computer-readable format. It is in this format that the greatest potential lies for improvements in the efficient distribution of data and their application to research because the marginal costs of transmitting data through the Internet are close to zero.

in their country. One respondent thought it would not have a significant impact, and another noted it was extremely difficult to estimate the impact at this stage. Eleven countries cited positive impacts only and four cited both positive and negative impacts. The positive impact cited the most was contributing to the advancement of science and thus accelerating scientific progress. This implied 'speeding up' the research process, and opening up new avenues of research beyond the initial context in which the data were collected as well as improving the quality of research. Other positive impacts included:

- Enhancing research collaboration both domestically and globally;

- Facilitating cross-disciplinary research and opening up new avenues beyond the initial context;

- Avoiding duplication of research;

- More research from the same data;

- Counteracting misconduct and increasing transparency;

- Validation and/or correction of previous results through re-analysis;

- Training new researchers through the replication of studies;

- Boosting public confidence in research results; and

- Improving evaluation and accountability of public funding.

12.   One respondent noted that it was important to carefully select areas for increased access and sharing of data. The scientific community, mainly through Research Councils, should be instrumental in identifying when and where increased access is of particular relevance.

13.   The most frequently cited negative impact was intellectual property rights (IPRs). This included 'foreign' access to data, researchers' priority to be the first to publish results, and the actual or perceived IPR problems involving collaborative projects between the public and private sector. Another negative impact cited was the costs associated with documenting and describing data and collection procedures in order for other researchers to be able to fully understand and re-use the data. The original data producer would have to bear these costs.

14.   However, in Denmark the Danish Agency for Science, Technology and Innovation provides core funding for 'research-support units' within Statistics Denmark and the National Board of Health. As a result, the system is '*better coordinated and money has been saved ... The prices paid by individual research projects have come down considerably, thus lowering a previous significant barrier. It is estimated that in total there is a saving, given that preparation and validation of register-data for research purpose is now done more systematically and 'once a for all', rather than on an ad hoc basis as part of various individual research projects*'.

Policies regarding data access

15.   More than half of countries (11) participating in the questionnaire have established policies regarding data access. These policies take a variety of forms. In some cases they are laws or acts, in others, they are position or policy statements, guidelines or frameworks adopted by government agencies or funding agencies. Some countries have several decentralised initiatives rather than an overall government

policy to facilitate data-sharing while others are investigating the possibility of establishing common infrastructures.

16.   In four countries these policies were established through legislation while in eight they were established by particular research-related organisations. Seven countries reported that there are existing documents that articulate these policies, and many are available on the internet.

17.   Some countries noted that they had not implemented an overall national strategy following the publication of the OECD guidelines on data access, rather work in this area continued along existing initiatives. Numerous countries noted that policies were established by particular research-related organisations. For example:

- The Australian Government's desire to improve access to publicly funded research is embodied in the Australian Research Council (ARC) and National Health and Medical Research Council (NHMRC) policy statements and funding rules. The ARC and NHMRC have issued a joint policy statement on the dissemination of research findings that supports accessibility.

    In addition, the Australian Government supports a number of strategies which allow accessibility to publicly funded research data and publications. The projects are designed to: improve technical interoperability; build digital repositories for higher education providers and explore complex issues in sustainable repositories; address complexities in making research data accessible; provide an example of digital publishing and start to build very practical templates to allow organisations to work their way through the regulatory frameworks that must underpin effective long lasting access to research data.

- In Denmark, there are several decentralised programmes to facilitate data sharing such as the Danish Data Archives (DDA), which collects research data from completed health-related research projects undertaken at public research institutions.

- In Germany, a number of schemes exist such as the German Council for Social and Economic Data (RatSWD), which was founded in 2004. It is an independent body of empirical researchers from universities, colleges, and other institutions of independent scientific research, as well as representatives of important data producers. The Council's main purpose is to advise in the development of the German data infrastructure for empirical research in the social and economic sciences.

    The ultimate aim in Germany is to establish a system of discipline-specific, internationally networked data repositories for primary research data. However, *'this task can and should only be tackled when sufficient experience has been acquired from the funding and evaluation of pilot projects. This is to ensure that the new structures respond to the requirements of the individual subject disciplines and are embraced by them. The partners within the Alliance of German Science Organisations agree to coordinate their funding programmes in the area of primary research data and, when necessary, to merge or harmonize them. They also agree in due time to examine the possibility of establishing common infrastructures for primary research data'*. A workshop was held in September 2008 to discuss the main legal, institutional and financial implications of access to research data.

- The National Institute of Informatics in Japan is promoting the Institutional Repositories Programme to preserve and disseminate research findings/results derived from universities and research institutions.

- In the United Kingdom, there is no overall government policy and most initiatives pre-date the OECD recommendations. Government policy is largely based on the re-use of public sector information regulations (ROPSI) and the Office of Public Sector Information.

18.   For those countries without an overarching policy, some respondents reported differences between institutions. For instance, in Norway, the Research Council conducted a survey of the OECD Recommendation on access to research data. The main conclusion from the study was *there is a wide variety of difference between the various institutions when it comes to data access. The research institute sector seems to have the highest level of awareness when it comes to data access, followed by the large universities. Smaller colleges and research institutes have few or no guidelines for data access.'*

19.   Differences across fields of research are also evident. In the United States, for example, the National Institutes of Health (NIH) has a range of policies that encourage widespread access to the results of taxpayer funded biomedical research, such as the *Policy for Sharing of Data Obtained in NIH Supported or Conducted Genome-Wide Association Studies* (GWAS). Investigators funded by the NIH must submit de-identified genotypic and phenotypic data to a centralized NIH repository (dbGaP). Other investigators may request access to GWAS data sets for research purposes. Another US example aims to provide more transparent access to information. The *Clinical Trials Information* scheme ensures that the results of clinical trials are publicly available. Those responsible for conducting certain clinical trials of drugs, biologics, or medical devices that are subject to approval by the US FDA are required to submit information about the trial protocol and summary information about the trial's results to the National Library of Medicine's ClinicalTrials.gov system. ClinicalTrials.gov is a publicly accessible database.

20.   Some funding agencies have made it mandatory for funded research projects to deliver their data-sets once the research is completed while others have implemented policies that require all research applications to include a data management plan. Some countries are working on initiatives to improve access to anonymous administrative data and microdata held in national statistical offices.

Why were policies adopted?

21.   The main reasons cited for adopting the policies were to promote the efficient use of research data. For example, some Research Councils recognise that many research data sets have a long-term value, especially where they are expensive to collect. Therefore, it makes good scientific and economic sense to manage the data effectively and to make them available for re-use through appropriate data sharing arrangements. Other reasons cited included enhancing the effectiveness and transparency of government expenditure, and improving scientific practice through the verification of data results.

Changes in research practices

22.   Respondents were asked if these policies respond to observed changes in research practices, but only a few countries answered this question in detail. The change cited the most was linked to ICT developments. Examples included, easier access to online data, web based conferences and virtual research teams. One respondent also noted that policies need to keep pace with major technical advances and regulatory requirements. Another observed that *'gradually, the culture and practices promoting data sharing are getting stronger.'*

Evaluation of policies

23.   The impacts of data access policies have been evaluated in three countries only. One evaluation revealed an improvement in efficiency and economic benefits by means of reducing the duplication of research and identifying redundant projects, while another cited an increase in the number of researchers

using information services. Even though some countries had not evaluated their data access policies, five countries cited benefits similar to those identified above including:

- improving the transparency of research competition;

- drawing attention to the value of research data and the value of sharing;

- facilitating the advancement of science;

- increasing the return on investment; and

- raising the number of researchers re-using data.

24.   A few drawbacks were also highlighted. These were mainly related to the cost of implementing increased data access and the recognition that the research community needs more support in data management. Other drawbacks noted were quality control, privacy and patent protection.

Demand for policies

25.   Seven countries noted that the demand for data access policies came from the research community while two cited international pressure. Other responses cited research councils and research foundations, while one respondent mentioned it was difficult to pinpoint any one specific driver.

26.   For those countries where data access policies have not been adopted, one respondent noted it was not important (*i.e.* the benefits are not clear) while others cited that policies are necessary but this would require preparatory work including evaluations and the development of infrastructure. The financial cost of implementation, including the increased burden on researchers needs to be considered. One respondent noted that a step-wise approach was being implemented. Four countries indicated that they did not have an adopted policy on access to data because of the lack of demand from the research community. Only one country indicated concerns about negative impacts, however it is committed to the idea and is developing a regime to govern open access to data. Another country noted that a uniform policy, which did not consider the specific circumstances of each research field, would be undesirable.

3.   Conclusion

27.   The questionnaire results demonstrate a wide range of policies and views on the implementation of the Council Recommendation on access to research data from public funding. The countries participating in the questionnaire show diverse characteristics in terms of the practices adopted and the stage of implementation of the *Principles and Guidelines*. Some countries have introduced laws and comprehensive policies while others have position statements or are still at the planning phase. Despite these differences, the responses indicate that most countries view the initiative positively, particularly in terms of accelerating scientific progress and optimising efficiency and transparency. Only a few concerns were raised and these mainly focused on IPRs and the cost of implementing the *Principles and Guidelines*. Very few countries have evaluated the impact of data access policies so it is difficult to identify best practices.

Next steps

28.   Delegates are invited to discuss whether follow up work is required. For example, the questionnaire could be re-administered in another two to three years to check progress and/or a more comprehensive review could be undertaken.

29.   Delegates may also wish to discuss what, if any, measures might be planned or necessary for the further roll-out of the *Principles and Guidelines*.

ANNEX 1: SURVEY QUESTIONNAIRE

Questionnaire on Access to Research Data from Public Funding

This OECD Recommendation and the attached Principles and Guidelines are aimed at assisting governments, research support and funding organisations, research institutions and researchers in dealing with the barriers to and challenges in improving the international sharing of, and access to, research data from public funding. They are intended to promote data access and sharing among researchers, research institutions, and national research agencies, while at the same time, recognising and taking into account, the various national laws, research policies and organisational structures of Member countries. The ultimate goal of the *Principles and Guidelines* is to improve the efficiency and effectiveness of the global science system. They are not intended to hinder its development with onerous obligations and regulations or impose new costs on national science systems.

Responses are requested to the following questions:

1.   **In your opinion, will increased access to, and sharing of, research data in digital form have a significant impact, either positive or negative, on the progress of science in your country? Please explain and provide one or two examples if possible.**

No significant impact .... ☐

Positive impact, please specify:

This will indeed strengthen scientific quality in building and using data

Negative impact, please specify:

2.   **Does your government currently have established policies regarding data access?**

Yes.. ☐
No (Not yet)... ☐

☞**IF YES, PLEASE ANSWER QUESTIONS 3 THROUGH 10. IF NO, PLEASE GO TO QUESTION 11** ☜

3.   **What policies have been established? Please specify the agency responsible for each policy and the field of research concerned, Also, please briefly summarize the major points.**

4.   **Are there existing documents that articulate these policies?**

No .... ☐

Yes .... ☐

If yes, please transmit a copy of relevant policy statements or legislative acts along with the completed questionnaire. Please provide website links to these documents. Only electronic versions of documents not available via Internet should be sent.

5. **Were these policies established through legislation, or were they established by particular research-related organizations, such as funding agencies or national institutes? Please respond for each policy you have cited as response to question 3.**

Established through legislation .... ☐

Established by particular research-related organizations .... ☐

6. **For each policy listed as response to Question 3, please give the main reasons for adopting it**

7. **Do these policies respond to observed changes in research practices?**

No .... ☐

Yes .... ☐

If yes, which changes?

If no, do you expect changes later?

No .... ☐

Yes .... ☐

8. **Has the impact of these policies been evaluated or monitored?**

No .... ☐

Yes .... ☐

If yes, can you summarize the findings of such evaluations or assessments for each policy, or provide the results in a separate document?

9. **What have been the benefits or drawbacks of these policies?**

Benefits:

Drawbacks:

10. **Where did the demand for such policies originate?** *(More than one answer allowed)*

Research community .... ☐

International pressure .... ☐

Other, please explain

11. **If such policies have not been adopted, what is your government's position on this issue?**

Not important (*i.e.* benefits are not clear).. ☐

No requests or pressure from the research community .... ☐

Concern about negative impacts.. ☐

Other, please explain

MANY THANKS FOR YOUR COOPERATION