

Jun 2nd, 12:00 AM

The Stick or the Carrot? An Approach to Open Access

Randi Tyse Eriksen

Norwegian University of Science and Technology, randi.eriksen@ub.ntnu.no

Jorunn Alstad

Norwegian University of Science and Technology, jorunn.alstad@ub.ntnu.no

Randi Tyse Eriksen and Jorunn Alstad, "The Stick or the Carrot? An Approach to Open Access."

Proceedings of the IATUL Conferences. Paper 2.

<https://docs.lib.purdue.edu/iatul/2014/openaccess/2>

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries.
Please contact epubs@purdue.edu for additional information.

The stick or the carrot?

An approach to Open Access

Randi Tyse Eriksen

Norwegian University of Science and Technology, NTNU University Library, Norway
randi.eriksen@ub.ntnu.no

Jorunn Alstad

Norwegian University of Science and Technology, NTNU University Library, Norway
jorunn.alstad@ub.ntnu.no

Abstract

In Norway, as internationally, Open Access (OA) policy states that officially funded research should be open to the public. This paper touches upon the EU's new OA-initiative (Horizon 2020) before giving a short description of the guidelines from the Norwegian Government and the National Research Council of Norway, as well as NTNU's and other Norwegian Universities' OA policies. Through the Norwegian CRISTin database, which was established in 2010, Norway has a national system for registration of academic publishing. Reporting these and other data concerning academic activities to the government partially dictates funding. Together with institutional archives for realizing green OA and funds for gold OA, the CRISTin database provides a sound basis for openness.

NTNU is the second largest university in Norway. In 2012, its researchers published more than 3000 scientific papers and review articles. Only a few of them were published OA and even less were archived as green OA.

Do guidelines and measures provide a clear mandate for convincing researchers to publish OA? NTNU University library took the initiative in 2012 to create a publication fund for financing APCs in gold OA publications. The fund was launched March 1 2013 with the library as administrator. This paper describes the implementation process and goals achieved so far.

Keywords

Open Access, institutional repository, academic publishing, scientific publishing, self-archiving, financing model, Norway

Introduction

The Norwegian University of Science and Technology, NTNU, is the second largest university in Norway, situated in the middle of the country. NTNU is Norway's primary institution for educating MSc level engineers and scientists. The university also offers comprehensive programs in social sciences, teacher education, the arts and humanities, medicine, architecture and fine art. Altogether 23,000 students and 5,000 person-years have an impact on the city of Trondheim. Around 3,000 are employed in education and research at NTNU. These people inscribed their NTNU affiliation on nearly 2,500 publications in the Web of Science database in 2013, a growth of 13% compared with the year 2010. Nearly 2,200 of these publications are categorized as scientific articles, papers or reviews.

NTNU's vision is «Knowledge for a better world». NTNU aims to create the basis for the development of knowledge and to create value – economic, cultural and social (NTNU, 2011). This vision should motivate our university to commit to and support the *basis* of Open Access; free and unrestricted online access to peer reviewed scholarly research.

NTNU is involved in 120 EU projects in the EU's 7th framework program and coordinates 20 of them. As regards Horizon 2020, NTNU is involved in seven research areas. This imposes obligations on NTNU as to how the results are published, and we will now give a short introduction to these regulations.

Horizon 2020

In Horizon 2020, the EU's Research and Innovation program from 2014 to 2020, each beneficiary must ensure open access to all peer-reviewed scientific publications relating to its results (EU, 2013). This is based on the vision that research already paid for by the public, should be free to access and use through the publications the research generates. In this paper we concentrate on the part of the OA system that generates publications, not on the research data, as the figure shows.

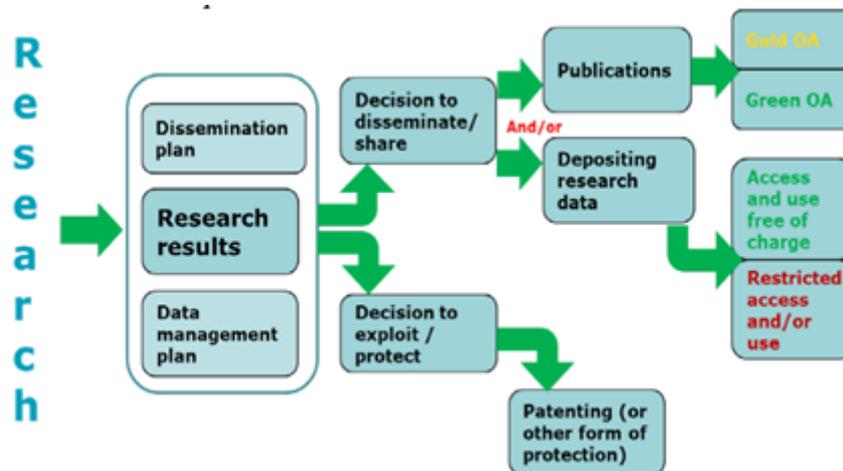


Fig. 1: Description of the dissemination of research in the EU system (EU, 2013, p.4)

The open access mandate in Horizon 2020 states that “the beneficiaries must deposit a machine readable electronic copy of the published version of final peer reviewed manuscript accepted for publication in a repository for scientific publications” and ensure that the manuscript is openly accessible to the public (EU, 2013 p. 6). This can be done through an open repository (green OA) or through publishing in an open access journal (gold OA), or, alternatively, by open choice in hybrid journals. Researchers can choose to deposit their publications in an institutional repository, a subject-based or thematic repository, or a centralized repository, and the publication must be available to the public within a maximum of six months. As to monographs, they can be published via pure open access or via a hybrid business model (EU, 2013).

The EU's seventh Framework Program for Research (PF7), which was the funding program prior to Horizon 2020, conducted a pilot initiative on open access (EU, n.d.). The pilot stated that within seven research areas, the beneficiaries of funding projects should deposit peer-reviewed research articles or final manuscripts into an online repository, and do their best to ensure open access to these articles within either 6 or 12 months. As we have seen, the principle of OA has been continued and strengthened in Horizon 2020 and is now put into force for all research areas within EU's research and innovation programs.¹

As the EU, through Horizon 2020, anchors OA as an underlying principle, this creates a strong obligation for all the universities and institutions that receive grants from the EU to ensure that they have the infrastructure that meets these requirements. So how is Norway and NTNU progressing in this regard?

¹The EU has useful sites about OA policy. One is <http://www.pasteur4oa.eu/> (Open Access Policy Alignment Strategies for European Union Research), which was established to support EU and its members to establish and reinforce OA strategies and policies.

Another is <http://www.fosteropenscience.eu/>. One of its objects is to “facilitate open science training for European research”.

<https://www.openaire.eu/> (Open Access Infrastructure for Research in Europe) gives support to the researchers.

National regulations

The Norwegian Act Relating to Universities and University Colleges states that the institutions shall promote the purpose of the Act by “helping to disseminate the results of research and of academic and artistic development work” (NA, 2005, 2.1). The Act does not mention OA, but this was expressed clearly in a White paper from 2008-2009: “In principle, the Government believes that all scientific papers resulting from publicly funded research should be openly available” (KD, 2009, p. 125).

The Research Council of Norway (RCN) has a proactive approach to this issue. The Council has established new principles for open access to scientific publications. RCN “require that peer-reviewed scientific articles based on research funded wholly or partially by the Research Council are self-archived in appropriate repositories whenever these are available” (RCN, 2009). Even though the Research Council sees gold OA as an alternative, the Council states that the best way to ensure public access is currently through self-archiving.

Open access policies in Norwegian Universities

As we have seen, the EU, through Horizon 2020, and the Research Council of Norway, has both established principles for OA. Are the Norwegian universities meeting this trend in their publishing policies?

The University of Bergen (UiB), the third largest university in Norway, agreed in 2012 upon principles for OA stating that UiB will take the initiative with other universities, research agencies and political authorities to identify national and international initiatives for OA (UiB, 2012). The university asks its researchers to aim to publish their research in open repositories and/or in OA journals, alternatively in hybrid journals. In 2013, UiB established a publishing fund that in fact also supports hybrid journals.

NTNU has established a “Policy for the protection and management of Intellectual property rights and physical material” stating that “through publications, NTNU will strive to ensure that society has free and open access to the university’s results” (NTNU, 2010). The policy also states that NTNU will “establish the basis to enable academic literature to be made freely available via NTNU’s electronic archive”. NTNU has publishing fund acting from March 2013, and is now elaborating a publishing policy, which we expect will be distinct as regards the issue of mandatory OA.

The largest university in Norway, University of Oslo (UiO), has agreed upon a green OA policy, and is the only university among these three to require that the researchers employed at UiO since July 2013 deliver a post-print version of scientific publications to the institutional archive, DUO (UiO, 2013). Like the Universities in Bergen and Trondheim, the University in Oslo has a publishing fund from 2013.

With these three slightly different approaches to Open Access, one could predict that the number of self-archived articles in the three institutional repositories vary according to the stated guidelines.² The next figure shows the results when searching the website Norwegian Open Research Archives (NORA).

² Institutional repositories:

University of Bergen (UiB): BORA, <https://bora.uib.no/>

University of Oslo (UiO): DUO, <https://www.duo.uio.no/?locale-attribute=en>

Norwegian University of Technology and Science (NTNU): DIVA,

<http://ntnu.diva-portal.org/smash/searchad.jsf?searchId=3>

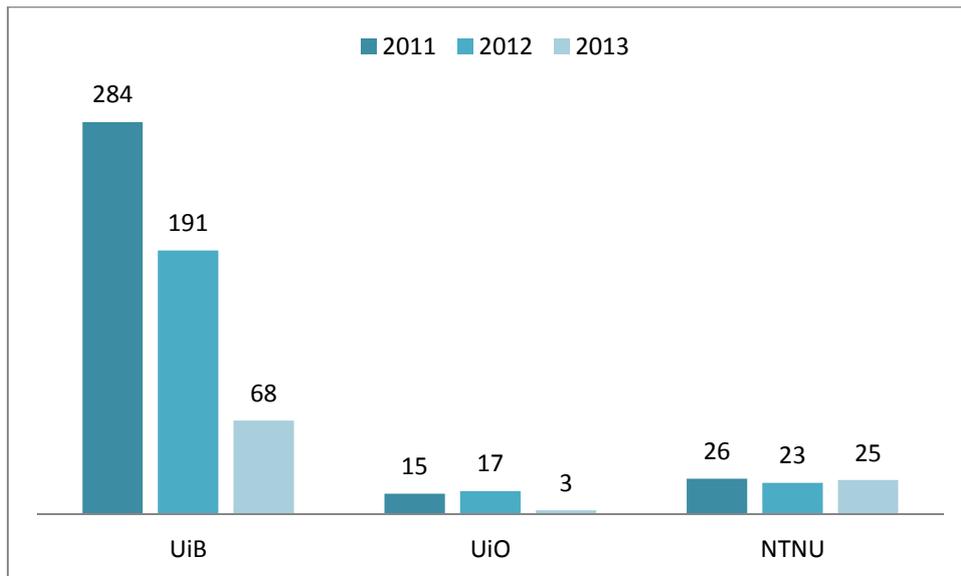


Fig.2 Articles published OA 2011-2013, found in NORA

The University of Oslo, with a mandatory self-archiving policy since 2013, has the lowest result of all. However, this fact clearly illustrates the problems arising when consulting the NORA database. UiO shows that NORA has not been indexing its institutional archive since 2013. When searching directly in its institutional archive, DuO, we find 22 refereed OA articles in 2011, 33 in 2012 and 50 in 2013.

We can conclude that UiO has a larger number of OA articles published than NTNU, but has still a long way to go to reach the results at the University of Bergen. The staff working with UiB's institutional archive, BORA, has invested time and effort in uploading articles on behalf of researchers. Obviously, this work pays off when it comes to number of published articles, but the good result is not a product of the researchers acting on the publishing guidelines at the university. One factor that also obscures the basis of comparison is the fact that 1 PhD dissertations with articles are not registered identically and thereby will count in some cases, in some cases not.

We will now use Web of Science as a source for comparing scientific publications at these three universities:

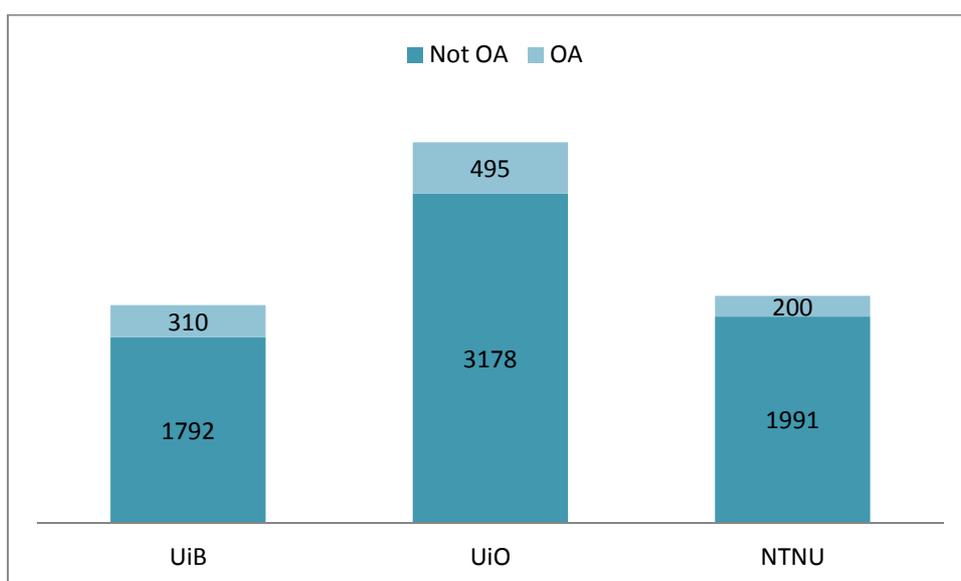


Fig 3 Scientific publications, WoS 2013

We can conclude that the size of the three universities is reflected by the number of scientific publications in WoS. Furthermore, it is rather peculiar that by consulting WoS each institution shows a better estimate of the amount of OA scientific publications than by consulting their own repositories. The figure also shows that NTNU lags behind when it comes to OA as registered in this database: In 2013 The University of Oslo published 13 % of their publications OA, the University of Bergen 15 %, while NTNU reached only 9 %.

The next figure shows the number of scientific publications that were funded by the EU and RCN in 2013.

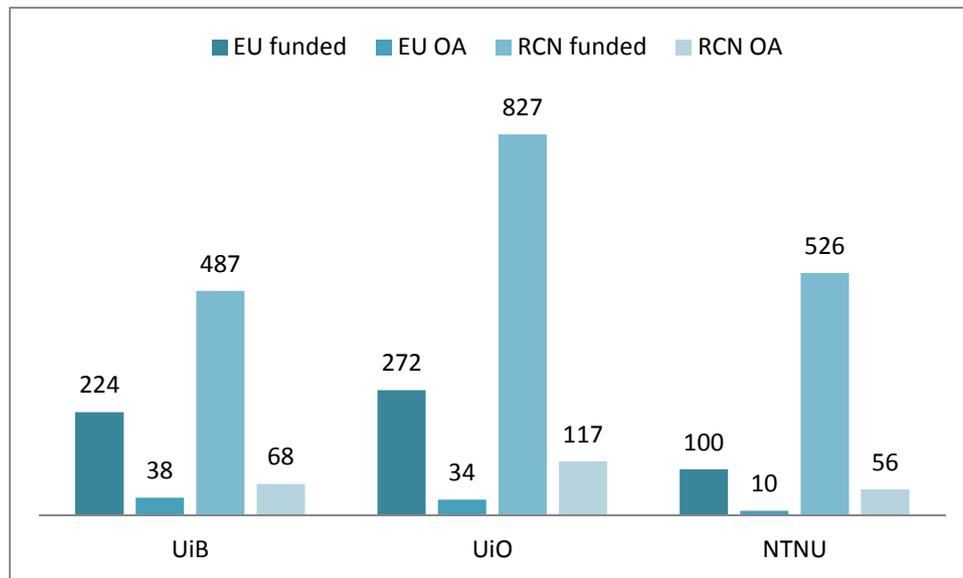


Fig 4 Scientific publications funded by the EU or RCN, WoS 2013

Given that both the EU and RCN have sound principles for open access to scientific publications funded by these institutions, and the fact that all three universities had a publishing fund in 2013 one should expect that the number of Gold OA scientific publications were higher. The lowest result can be seen at NTNU, with only 10% of the publications in 2013 marked as OA in WoS. The University of Oslo varies between 12% and 14% while the University of Bergen varies between 14% and 17%. Delay in having manuscripts accepted and published could support the assumption that the publishing funds are not made available in these cases. Interestingly enough, there is no sign of the results one should expect from the EU and RCN requirements. When comparing with Figure 3, the percentage of OA publications seems stable at all three universities - funded or not funded.

Nearly 2,200 of NTNU's publications are in 2013 categorized as scientific articles, papers or reviews in WoS. When we look at the funding agencies, we find that the EU funded 100 of them. 10 articles are marked as OA in WoS. If 10% are published as Gold OA, we would assume that NTNU's institutional repository, DiVA, or other repositories were the hosts for the rest - 90 articles in 2013.

Web of Science notes that RCN partly funded 526 of NTNU's nearly 2,200 scientific publications in 2013. 56 of the publications are marked as Open Access in WoS. 11% of RCN funded publications are published Gold OA in 2013. What about DiVA - can we find traces of the rest, i.e. 440 publications, self-archived here?

We will now take a look at the Norwegian infrastructure available for the researchers self-archiving.

CRISTin and the Norwegian Publication Indicator

CRISTin, the Current Research Information System in Norway, should document, present and make publicly available quality-assured data on scientific publications in a joint national database as a basis for funding systems in the university and university college sector and in research institutes and regional health trusts. This responsibility was given to the organization by the Norwegian Ministry of Education and Research and the Norwegian Ministry of Health and Care Services (CRISTin, 2012).

The mandate is closely integrated with the Norwegian Publication Indicator, a system for documenting Norwegian academic publishing. The aim is to measure publication activity and allocate research funding according to the publishing performance. The Indicator is used to distribute approximately 2% of the total funds for the university and university college sector, and thus constitutes a small part.

After merging individual databases from different sectors in 2010 and 2011, the CRISTin organization in 2012 focused on elaborating the infrastructure related to institutional repositories. This means that if a researcher from NTNU publishes a scientific article with co-authors from other CRISTin institutions, it is sufficient that one of the authors register the bibliographic information in the CRISTin database and upload the article. Each institutional repository with an affiliation to the same article can harvest it.

The Research Council of Norway has taken advantage of this infrastructure, and each publication belonging to a RCN project is marked with the RCN project code. This should in theory give the researcher an easy way to both report the publication activity while reporting to the Council and self-archive these publications: Registering scientific publications in CRISTin is mandatory and one could assume that uploading the final accepted version of the manuscript (post print) would be easy.

However, figures from the CRISTin database show that only 13% of Norwegian scientific publications are published as OA. This means that only approximately one in five scientific articles that could be self-archived in fact is archived via CRISTin. Both the EU and RCN state that researchers can choose to deposit their publications in an institutional repository, a central repository or a subject-based or thematic repository. It is reasonable to assume that most of the researchers who self-archive their scientific publications choose a subject-based repository. For the researcher, that is where the carrot is.

For the institutions, it is a problem that using the institutional repository is a choice rather than mandatory. As we have seen, the Norwegian Ministry of Education and Research expects that publicly funded research should be OA (KD, 2009). The institutions are asked to report on this matter, but few, if any, currently do. At the University of Oslo, researchers employed at UiO since July 2013 are required to deliver a post-print version of scientific publications to their institutional archive (UiO, 2013). This is a tiny stick. As one OA friendly researcher states: "I wonder if this mostly is something that looks nice on the paper at the moment. It must be accompanied by incentives if the strategy actually is to be implemented." (Hurum, in Jacobsen, 2014, p. 15).

It seems that the possibility of increased citation is not a sufficient incentive for some researchers. This is emphasized even more clearly by the Norwegian funding system: Both the institutions and the researchers themselves stress the number of publications in the most prestigious channels in the Norwegian publication lists. Earning publishing points in this system is a strong incentive. Despite the system's purpose, i.e. serving as funding on an aggregate level, we note that more and more institutions use it for allocating research time, travel funds or other inducements on an individual basis. It is all about being published, not being cited.

To overcome the lack of self-archiving in the institutional repositories, the librarians at some institutions, like the University of Bergen, take responsibility for uploading the publications they might find as OA in different databases. Furthermore, library staff affiliated to every institutional archive has a great deal of work to do concerning copyright policies and embargo restrictions before publishing the articles uploaded via CRISTin. The publication is uploaded only once, but depending on how many institutional archives benefit from it, the property right clearing multiplies. Over 160 institutions use the CRISTin database. In 2012, NTNU had co-authorship with the University of Oslo on more than 200 publications and nearly 70 with the University of Bergen.

Is copyright clearance in two or more institutions connected to these publications a sustainable procedure? How many person-years should one allocate in the future if the researchers in fact took the self-archiving obligations seriously? We believe we have a good argument in requiring that CRISTin eventually evolves into a centralized archive, where this type of rights clearance need happen only once.

NTNU - Green and Gold Open Access

As we have seen, self-archiving is not a commitment the researchers at NTNU take very seriously. What about the younger researchers? In the last 3 years, RCN each year partly funded over 100 of the PhDs who finished their doctorates at NTNU. This is an average of 30% of all doctorates, and should imply that the theses are published OA. All in all, 1071 PhD dissertations were deposited in NTNU's institutional archive in the period 2011 - 2013. Depositing PhD dissertations in the DiVA archive is mandatory, but we ask: What is published OA?

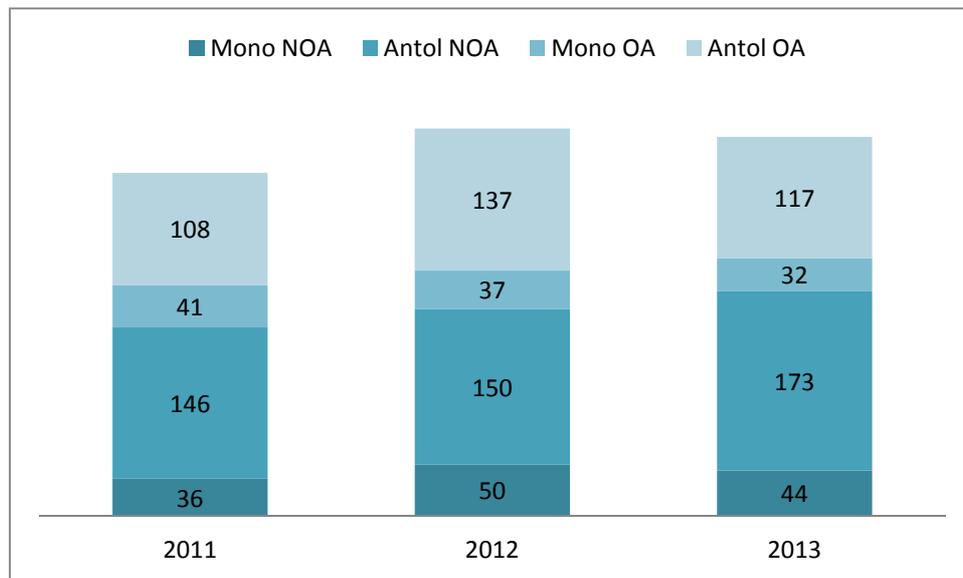


Fig. 5 PhD dissertations archived in DiVA 2011 - 2013

The figure shows that only 46% of the monograph dissertations are published OA, while even less (44%) of the anthology version are published (at least partly) OA. The tendency is unfortunately the same as for other scientific publications; the proportion of OA is decreasing, from 45% overall OA in 2011 to 41% in 2013.

If we look only at dissertations funded by RCN, with their policy for Open Access in mind, we would of course expect that a lot more were published openly. In fact, there is no difference: only 43 % of the RCN funded candidates in the period 2011 - 2013 have published their dissertations OA.

Since March 2013, NTNU has had a publishing fund. Like most publishing funds, the purpose of this fund is primarily to provide NTNU researchers who do not have any other source of funding with an opportunity to publish papers that have been accepted in fee-based OA journals. 1 million NOK is allocated each year, and the result is to be evaluated at the end of 2014. Then it will be decided whether the publishing fund continues. What has happened so far? In the start-up phase, the rector's blog had focused PR on the matter, an article about OA, and the fund was published in the university paper and an oral presentation was held at the deans of faculties meeting. The first application for grants came on the day of launching, and we were quite optimistic about the future.

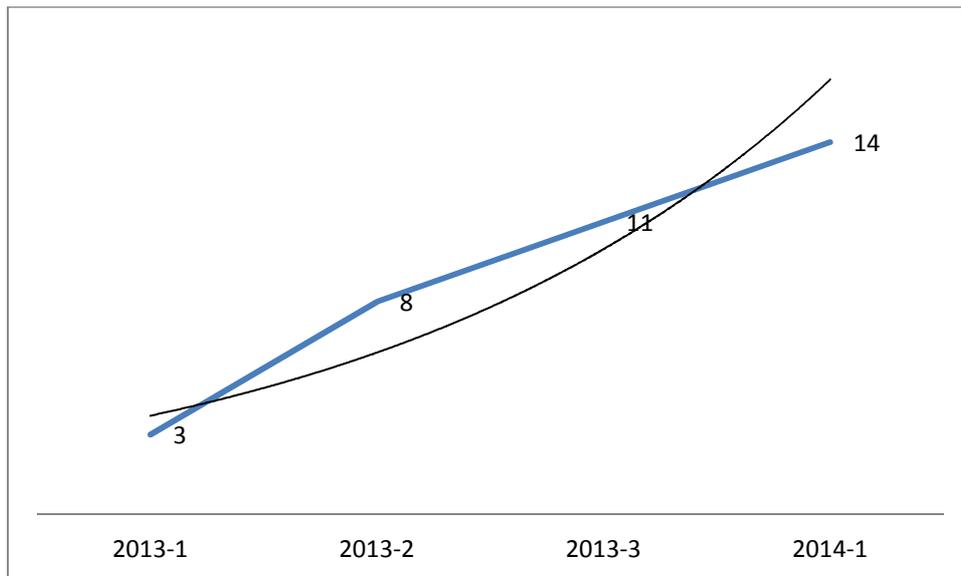


Fig. 6 Grants from the NTNU Publishing fund 2013 - 2014

The figure shows the development since the fund got the first application on March 1 2013. Only 36 applications were accepted during the first year, and we have only used 25% of the money.

Conclusion

The governmental funding system used for Norwegian universities and university colleges partly rewards institutions that produce scientific publications in the Norwegian Publication Indicator. As we have stated, the extra funding coming from scientific publications is not substantial, but significant resources are used for both registering and quality control in the CRISTin database. This publication production is partly imported from WoS, partly manually registered in the CRISTin system, and strictly controlled by all the involved CRISTin institutions. Each institution that receives funding from the Norwegian Ministry of Education and Research reports these results to the Norwegian Database for Statistics on Higher Education (DBH) by April 1st. The focus on the results each year seems to overshadow strong obligations towards OA. When the research projects are partly funded by the EU and RCN, this neglect can result in stricter financial penalties. Since over 160 institutions are using CRISTin, it is obvious that a centralized service for copyright clearance and embargo restrictions will save person-years at the libraries, secure the funding, and ensure open access without delay.

References:

- CRIStin: Current research information System in Norway*. (2012). Retrieved April 11, 2014, from <http://www.cristin.no/english/about/>
- European Commission [EU]. (n.d.) *Open Access Pilot in PF7*. Retrieved April 4, 2014 from http://ec.europa.eu/research/science-society/document_library/pdf_06/open-access-pilot_en.pdf
- European Commission [EU]. (2013). *Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020: [Version 1.0 11.december 2013]*. Retrieved April 4, 2014, from http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf
- Jacobsen, H.Ø. (2014). Problemer i publiseringstoppen. [In Norwegian]. *Morgenbladet*, 7, 15.
- Norwegian Act relating to universities and university colleges [NA]*. (2005). Retrieved April 5, 2014, from http://www.regjeringen.no/uplod/KD/Vedlegg/UH/UHloven_engelsk.pdf
- Norwegian Ministry of Education and Research [KD]. (2009). *Klima for forskning*. [White paper in Norwegian] (St.meld. Nr. 30:2008-09). Retrieved April 11, 2014, from <http://www.regjeringen.no/pages/2178785/PDFS/STM200820090030000DDDPDFS.pdf>
- Norwegian Open Research Archives [NORA]*. Retrieved April 11, 2014, from <http://www.ub.uio.no/nora/search.html?siteLanguage=eng>
- Norwegian University of Science and Technology [NTNU]. (2011). *Knowledge for a better world: Strategy 2011-2021*. Retrieved April 4, 2014, from <http://www.ntnu.edu/strategy>
- Norwegian University of Science and Technology [NTNU]. (2010). *NTNU Policy for the protection and management of intellectual property rights (IPR) and physical material at the Norwegian University of Science and Technology (NTNU)*. Retrieved April 11, 2014, from http://www.ntnu.no/c/document_library/get_file?uuid=bf08226e-f18b-4521-9358-59a0bf5442ba&groupId=51060
- The Research Council of Norway [RCN]. (2009). *The Research Council's Principles for Open Access to Scientific Publications*. Retrieved April 5, 2014, from http://www.forskingsradet.no/en/Article/The_Research_Councils_Principles_for_Open_Access_to_Scientific_Publications/1240958527698?lang=en
- University of Bergen [UiB]. (2012). *Universitetets policy for og ordning med Open Access*. [In Norwegian]. Retrieved April 5, 2014, from <http://www.uib.no/filearchive/2012-088.pdf>
- University of Oslo [UiO]. (2013). *The University of Oslo's Open Access policy*. Retrieved April 9, 2014, from <http://www.uio.no/english/for-employees/support/research/open-access/>