



Trend Report Open Data

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1 About this report

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Chapter 2 of this report presents a brief introduction to the subject of open data. Chapter 3 outlines what open data are and the relevant legislation and policy. The current situation regarding open data in the public sector (as at the end of 2013) is then discussed in chapter 4. The fact sheets annexed to the report look at a number of themes in more detail.

Fact sheets to the Open Data Trend Report

Fact sheet	Example of ...
1. Open Government Partnership / Open Data Institute	International initiatives to promote the provision and use of open data
2. Financial transparency and open data	Opening up government revenue and expenditure
3. Gas extraction and open data	How the public can use open data
4. Education and open data	How open data improve public decision-making and government efficiency
5. Healthcare and open data	How open data can cut costs
6. Development cooperation and open data	Government transparency about expenditure



2 Introduction

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Central government generates and collects a wealth of data. Much of the data are relevant to the public, businesses and other public authorities. Central government is increasingly providing the information it has on education, inspection findings, its use of taxpayers' money, etc. as 'open data'.¹ In brief, open data are data that are machine readable and re-usable without restriction. In the case of public data, they are provided free of charge, if only because they have already been paid for through taxation. Open data can be generated by a wide range of parties: central government, the semi-public sector, business and the public.

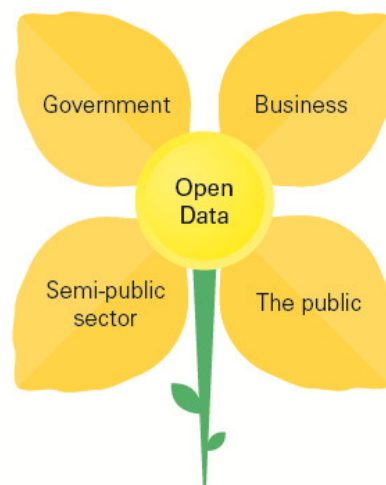


Figure 1 Open data

The provision of open public data provides opportunities to improve public services, to detect savings and to improve the internal efficiency of government organisations. If public authorities present their expenditure and policy outcomes in the form of open data, the public can follow government activities far more directly than at present. Public

¹ The Netherlands Food and Consumer Product Safety Authority (NVWA), for example, is piloting a project to publish inspection results (13 February 2014). Central government has published its budget statements at aggregate level as open data since September 2012



administration would then be more transparent. The free provision of data and the combination of data sets can produce new ideas, innovations and economic growth. Estimates of the economic benefits range from €70 billion in Europe² to €3-5 trillion worldwide.³

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The phenomenon of opening up data is relatively new but it is gaining ground worldwide. Important international initiatives in this area are the Open Government Partnership (2011) and the Open Data Charter⁴ of the G8 (2013). Their defining characteristics are transparency, effectiveness and accountability. In the United Kingdom the government launched the Open Data Institute (ODI) in 2012 to increase the provision of open data and to facilitate the users of open data. The ODI (theodi.org) acts as a catalyst for the evolution of open data, for example by providing financial assistance to start-ups. It also organises training courses, certification and conferences. The ODI is active internationally. Three national ODI nodes have been established (in the United States, the United Kingdom and Canada, not yet in the Netherlands).⁵ See Fact Sheet 1.

The Dutch government is playing its part in the movement towards open government. The Netherlands has been a member of the Open Government Partnership since 2013. In the same year, the government also published its *Strategic Vision on Open Government*⁶ and the associated *Open Government Action Plan*.⁷ Parliament will debate the Open Government private member's Bill to modernise the Government Information (Public Access) Act in 2014. Under the new Act, the government would be obliged to provide access not only to data at the request of individual citizens (as at present) but also to actively open up data for society as a whole.

² http://ec.europa.eu/commission_2010-2014/kroes/en/blog/opendata.

³

http://www.mckinsey.com/insights/business_technology/open_data_unlocking_innovation_and_performance_with_liquid_information.

⁴ <https://www.gov.uk/government/publications/open-data-charter/g8-opendata-charter-and-technical-annex>.

⁵ See also <http://www.theguardian.com/technology/2013/oct/29/web-inventor-open-data-institute-new-global-network>

⁶ <http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/09/01/visie-open-overheid.html>.

⁷ Open Government Action Plan, <http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/09/01/actieplan-open-overheid.html>.



This is the Netherlands Court of Audit's first trend report on open data. More will follow in the years ahead. The report is based on a study of the literature and interviews with experts inside and outside government. We also carried out a baseline survey of the government's provision of open data and the measures taken by ministries to unlock open data. This report outlines the current situation regarding open data at central government level in early 2014. Future editions of the trend report will look at the situation in greater detail.



3 What makes data open?

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3.1 What are open data?

Open public data are data that:

1. are paid for from the **public purse** and generated during or for the provision of a public service
2. are available to the **public**
3. are **free of copyright** and other third-party rights
4. are **machine-readable** and preferably comply with open standards (not PDF but XML, CSV, etc.)
5. **can be re-used without restriction** in the form of cost, compulsory registration, etc.

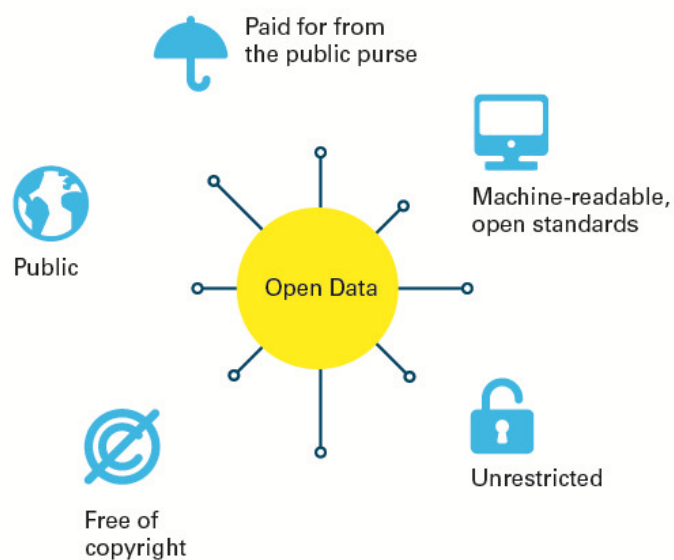


Figure 2 Criteria for open data



If open data satisfy these criteria, they are accessible and can be re-used by everyone. They can be used and processed by members of the public. The data should be regularly updated by the owners.

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3.2 Policy: open government

Within the Dutch government, the Ministry of the Interior and Kingdom Relations (BZK) is responsible for open data. Within the framework established by BZK, the Ministry of Economic Affairs and the Ministry of Finance have set out open data pathways to meet their own policy objectives. The government published *Strategic Vision on Open Data*⁸ and the final version of the associated *Open Data Action Plan*⁹ on 27 September 2013. The Strategic Vision and the Action Plan are in part a response to an advisory report issued by the Council for Public Administration, *Gij zult openbaar maken*¹⁰ ('Thou shalt make public').

The main thrust of the two documents is that the government endorses the principle of 'publication unless'. Data must be unlocked unless there are legal grounds for not doing so (see section 3.3, Dutch legislation). The Action Plan describes a series of action points to be carried out in the next two years. Action point 3 relates to financial transparency. The Ministry of Finance is increasingly casting the budget in digital form. It has also taken an initiative to standardise and, in the longer term, open up the ministries' financial accounts.¹¹ Furthermore, the government will consult the Open State Foundation to discuss experiments with open spending. The Ministry of BZK and the Ministry of Finance are currently exploring how expenditure data can be actively opened up.

Within the context of the government's wider open data policy, the Minister of Economic Affairs and the Minister of BZK are together promoting the use of open data in the Netherlands, as illustrated by the

⁸ <http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/09/01/visie-open-overheid.html>.

⁹ Open Government Action Plan, <http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/09/01/actieplan-open-overheid.html>.

¹⁰ http://www.rob-rfv.nl/documenten/boekje_advies_openbaarheid.pdf (available in Dutch only).

¹¹ The Ministry of Finance will work out the necessary framework in 2014 and implement it in the financial systems in 2015 for it to be operational by 2016.



breakthrough project *Open Geodata for Growth and Innovation*¹² to match supply and demand for open data.

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3.3 Dutch legislation

Since 1980 Ministries have been required under the Government Information (Public Access) Act to passively open up the data contained in their documents. The term document has a wide definition: it includes both paper and digital formats and the information (electronic or otherwise) they contain.¹³ The passive publication required by the Act therefore also applies to the data held by the government. With the adoption of the *Open Government Action Plan* in 2013, ministries committed themselves to opening up data *actively*. However, they are not yet obliged to do so by law. Below, we consider three conditions for open data and the extent to which they are embedded in law in the Netherlands.

Public, findable and re-usable

Before open data can be used, they must be available, findable and re-usable. There is currently no legislation in the Netherlands requiring government bodies to publish open data but there is an obligation to provide it on request (i.e. passively). Businesses and semi-state institutions are under little if any obligation to provide open data either actively or passively. This report focuses on open government data.

Public

The provision of government data is laid down largely in the Government Information (Public Access) Act (WOB). The WOB requires the government to provide the information it generates or collects in the performance of its activities on request (passively). The information is public unless exempt under the WOB. Absolute exemptions apply in four areas in which the government will never provide information: matters relating to the Crown; State security; business and manufacturing data shared with the government in confidence; and personal particulars as

¹² <http://www.rijksoverheid.nl/onderwerpen/doorbraakprojecten-met-ict/economische-groei-met-doorbraakprojecten-ict/doorbraakproject-opendata>.

¹³ See, for example, Bergfeld, Kaspersen & Lodder (2000), Government Information (Public Access) Act and ICT: a study of the consequences of using information and communication technology for the Government Information (Public Access) Act. Investigative journalists, for example, regularly make freedom of information requests for information held in government databases.



defined in section 16 of the Personal Data Protection Act.¹⁴ There are also seven conditional grounds for refusal, where the government must weigh the public interest against other interests and then decide which interest weighs more heavily.¹⁵

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Not all government organisations are subject to the WOB; the WOB applies only to government organisations that are defined as administrative authorities under the General Administrative Law Act. The High Councils of State, such as Parliament and the Court of Audit, are not administrative authorities and are therefore not subject to the WOB. They have their own freedom of information regulations. Certain other organisations are subject to the WOB but some of their data are not and are subject to separate regulations. Such organisations include Kadaster (the land registry), the trade registry of the Chamber of Commerce and Statistics Netherlands (CBS). There is currently no comprehensive overview of the government organisations and government data that are exempt from the WOB or of the consequences for publication.

Accessible, re-usable

To be used as open data, the data must not only be published but also findable. This requires the government to open up the data actively and post them on the internet. The WOB makes a distinction between passive and active publication. In passive publication, a government organisation provides information on request. In active publication, it does so of its own volition. *Active* publication is at the heart of the new policy set out in the *Open Government Action Plan*. The public, however, cannot yet demand that the government open up data actively.¹⁶

The WOB sets a series of general requirements on the government's active opening up of information (e.g. 'in an understandable form', 'in such a fashion as to reach as many interested parties and interested citizens as possible'). It does not oblige the government to post

¹⁴ Data on a person's religious beliefs or ideology, race, politics, health, sex life, union membership, criminal record and unlawful or disorderly behaviour in connection with a banning order.

¹⁵ The conditional grounds for refusal are: the Netherlands' international relations, the economic or financial interests of the State, the investigation and prosecution of crimes, the inspections, controls and supervision carried out by administrative authorities, respect for personal privacy, an addressee's right to be the first to be informed, the prevention of favouritism or prejudice of natural persons, legal persons or third parties involved in the matter. See WOB, section 10.

¹⁶ Eric Jan Daalder (2005), *Toegang tot overheidsinformatie* ('Access to Government Information'), p. 151.



information on the internet so that it can be found.¹⁷ The WOB does not refer to another criteria of open data, either: machine-readability. The data published by organisations that are exempt from the WOB are subject to specific regulations. Under the Statistics Netherlands Act, for example, Statistics Netherlands may publish its statistics, but not the underlying data.

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Data that are findable and accessible are not necessarily re-usable. Open data are data that can be reproduced and processed without permission. Data ownership is regulated by the Copyright Act and the Databank Act. As a rule, the government waives its ownership rights when it first provides the data as open data unless or it specifically states that it retains them.

At present, not all published data are re-usable. There is a conflict between the interests of intellectual property rights and re-usability. Money is often the sticking point: government organisations that generate revenue from the sale of data do not want to give them away completely free of charge and free of copyright.

3.4 European legislation

Re-use Directive

The Netherlands' publication of open data is subject to both national and international law. The European Commission has issued a *Digital Agenda for Europe* and launched its own open data portal. The *Re-use Directive* of 2003 is particularly relevant, as it lays down how public authorities must make their documents available for re-use. The Directive defines the term 'documents' very widely so as to include data: 'any content whatever its medium (written on paper or stored in electronic form or as a sound, visual or audio-visual recording)'.¹⁸ The form of the data or the way in which they are stored is therefore irrelevant to the right to re-use them. Furthermore, data can also be re-used in the form of subsets.

The Re-use Directive does not specify that data must be re-usable. Rather, it sets a series of criteria that apply when a public sector body

¹⁷ Basic Registers Programme Council (2011) *Final report, which of the three – towards the efficient, clear and sustainable funding of the basic registers system*, p.82.

¹⁸ Directive 2003/98/EC of the European Parliament and the Council of 17 November 2003, article 2.



decides to permit re-use. In 2013, the Council and the European Parliament approved a revised Directive that must be transposed into national law by summer 2015. The main amendment in the new Directive makes access (unlocking) equivalent to re-usability. If a user has a right to access data under national law, he also has a right to re-use them.

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Figure 3 shows the extent to which public sector information is re-used in the EU member states.¹⁹ The Netherlands is the third highest, with a score of 505 out of 700 (after the United Kingdom and Spain).

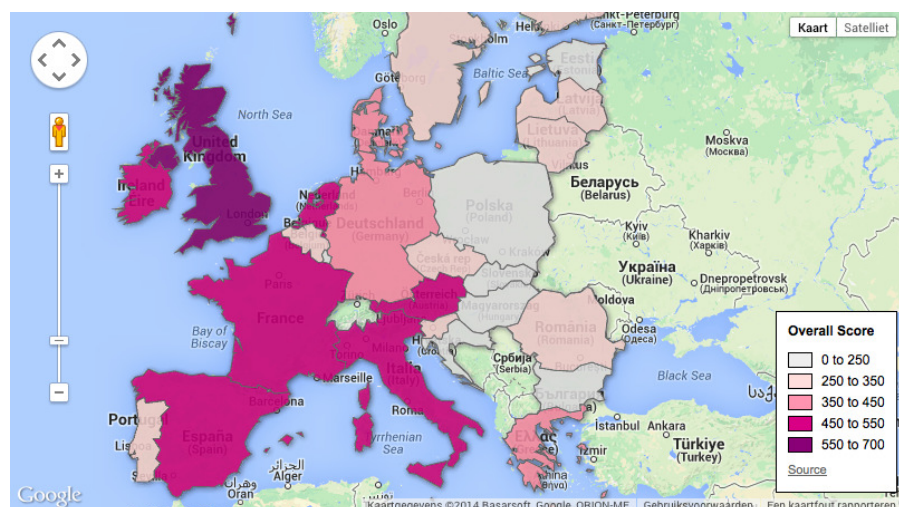


Figure 3 Scores for the re-use of public sector information in the EU member states, March 2014

Source: www.epsiplatform.eu/content/european-psi-dashboard.

Apart from the Re-use Directive, which applies to public sector information in general, two European laws apply specifically to geographical and environmental information.

INSPIRE Directive

A separate Directive applies to geographical information. The INSPIRE Directive requires the EU member states to make geo-information available on 34 themes,²⁰ provide descriptions of them in the form of metadata, harmonise them and enable their re-use by means of open standards. This means there must be no obstacles to the use and re-use of geo-information. The INSPIRE Directive has established a European

¹⁹ See <http://www.epsiplatform.eu/european-psi-scoreboard> for a description of the method used.

²⁰ <http://inspire.jrc.ec.europa.eu/index.cfm/pageid/2/list/7>.



spatial information infrastructure to support an integrated approach to European environmental policy. The Netherlands transposed the Directive into national law on 1 September 2009. Most of the geo-information in the Dutch public sector is produced by the Ministry of Infrastructure and the Environment. [See Fact Sheet 3.](#)

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Treaty of Aarhus

Environmental information is subject to the Treaty of Aarhus. The Treaty, dating from 1998, governs the passive and active publication of environmental information on, for example, air and water quality, biodiversity and government environmental measures. The Treaty has been ratified by the Netherlands and 44 other countries and transposed into EU law.



4 Current situation

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4.1 Availability of open data in the Netherlands

The Netherlands performs well in international comparisons of the provision of open data. Depending on the criteria, the Netherlands ranks in the top five (census.okfn.org) or the top ten (opendatabarometer.org). The figure below shows the Netherlands' score for the provision of open data in a number of important areas in 2013.

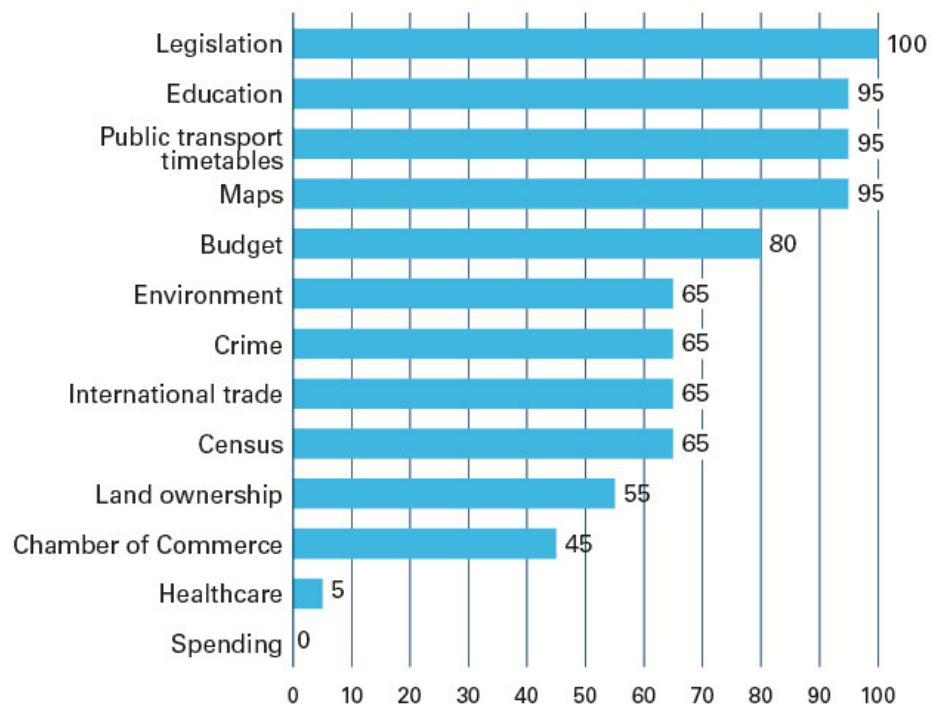


Figure 4 Availability of open data in 2013 (derived from opendatabarometer.org)



The scores in the figure are taken from opendatabarometer.org and are based on ten questions that could score up to ten points each. The questions were:²¹

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- Do the data exist?
- Are the data available from government in any form?
- Is the data set provided in a machine-readable format?
- Are the machine-readable data available in bulk?
- Is the data set available free of charge?
- Are the data openly licensed?
- Is the data set up to date?
- Is the publication of the data set sustainable?
- Was it easy to find information about this data set?
- Are data APIs²² provided for key elements of the data?

The figure shows that open data are readily available in a variety of policy fields in the Netherlands. Much of the open data published by the government are geo-data (see the list prepared by the Open State Foundation).²³ In addition, legislation is completely open and both public transport timetables and education data are as good as open. *See Fact Sheet 4.*

Few open data are currently available in some policy areas. Healthcare and spending (the counterpart of the budget) score particularly poorly. A positive exception in the latter field is www.openspending.nl. This website, an initiative of the Open State Foundation, opens up data that are provided to Statistics Netherlands to explain to the public what their taxes are spent on. Certain districts of Amsterdam and the cities of The Hague, Enschede and Utrecht have already opened up their expenditure. Many open spending initiatives can be found outside the Netherlands. A good example is the open spending portal (www.openspending.org) of the Open Knowledge Foundation. Its aim is 'to track every government financial transaction across the world and present it in useful and engaging forms for everyone from a school-child to a data geek'. Several

²¹ Source: <http://www.opendataresearch.org/project/2013/odb>.

²² An API (Application Programming Interface) is a collection of definitions specifying how a computer programme communicates with another programme or software component (http://nl.wikipedia.org/wiki/Application_programming_interface). APIs are a common means to unlock large numbers of data sets in real time, see for example the API of www.recovery.gov: <http://www.recovery.gov/arra/FAQ/Developer/Pages/RecoveryAPI.aspx>.

²³ <http://www.openstate.eu/2013/08/open-data-netherlands-less-than-we-thought/>.



interesting examples can also be found in the United States and the United Kingdom.²⁴ *See Fact Sheet 2.*

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The open data barometer found that the Dutch health sector – good for €78 billion in 2014 – provided little open data. In response to a motion in the House of Representatives, the Minister of Health, Welfare and Sport is currently preparing a sustainable information system for the sector. It will include an action plan to unlock more data. Unlocking information on treatment costs, for example, could help cut healthcare costs.²⁵ Open data could make clients more price aware when selecting the care they receive. Few open data are also available in the social security sector (€79 billion in 2014). *See Fact Sheet 5.*

4.2 Action by ministries to open up data

We investigated what action the ministries had taken to unlock data. We looked at the following aspects:

- top-down support for open data
- the presence of a data catalogue
- the implementation of data hunts
- the presence of an action plan or roadmap to open up data
- the presence of open data rules or procedures
- the presence of a separate department for open data
- the presence of specific skills to open up data.

The study found that the ministries had very different experiences with open data. Ministries such as Economic Affairs, Infrastructure and the Environment, and Education, Culture and Science had more experience unlocking data than others, partly because of external obligations. This pattern is repeated in the support provided from the top of the ministry, insight into what data are available and more targeted use of human and financial resources at the ministries.

²⁴ See, for example, <http://www.checkbooknyc.com>, www.recovery.gov, <http://openbudgetoakland.org>, <http://wheredoesmymoneygo.org> and <http://data.gov.uk/dataset/national-archives-coins-spending-data>.

²⁵ The first step has already been taken with the publication of health data by hospitals. Hospitals have been required to publish mortality figures since 2014, both average figures and figures per patient group.



Insight into what data are available, for example by means of a data catalogue or a data hunt,²⁶ is essential to determine what data can be unlocked. Ministries, however, often do not have a proper insight into the available data.^{27,28} In earlier audits²⁹ we pointed out the important role played by the ministries' Chief Information Officers (CIOs). In our opinion, they are still taking too little action. The United Kingdom has established a National Information Infrastructure.³⁰ It identifies government information that is particularly important to society and the public and decides what data should be unlocked.

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The Ministries of Foreign Affairs, Economic Affairs, Infrastructure and the Environment and Education, Culture and Science invest relatively more human and financial resources in open data than other ministries. The cost of open data is not as high as might be expected. In general, open data account for only a very small fraction of a ministry's expenditure, on average 0.01%. The staff costs for open data are also marginal, less than 0.14% of the total number of FTEs and usually 0% as staff are not employed specifically for open data.

²⁶ See, for example, <http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2013/02/28/open-data-open-doel-verkenning-van-de-hergebruiksmogelijkheden-van-el-i-datasets.html>.

²⁷ See, for example, our report *Central Government Information Management* (2010).

²⁸ See a recent (2014) report by the Cultural Heritage Inspectorate, *Duurzaam duurt het langst* ('Sustainable lasts longest').

²⁹ See our report, *Lessons Learned from Government ICT Projects* (2013).

³⁰ See <http://www.gov.uk/government/publications/national-information-infrastructure/national-information-infrastructure-narrative>.



5 Conclusion and comments

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5.1 Conclusion

Open data are the standard, but not yet the practice

The *Open Government Action Plan* introduced the concept of 'open unless'. This concept expresses the government's ambition of not only making all public data open if it can but of doing so actively. We fully support this ambition but would note that 'open data' is the standard but not yet the practice. The ministries have already put the necessary conditions in place to publish open data: support from the top, insight into what data are available, concrete plans with deadlines and enough people and resources. But the government must create the right conditions for all of the public sector to unlock and re-use open data.

The open data that have been unlocked are concerned chiefly with what the government *knows* rather than what the government *does*. Much of the available open data are collected or are necessary to carry out public duties, e.g. in the form of maps, public transport timetables and budget figures. A transparent government, however, requires an open public sector that provides open data on how it performs its duties. How is taxpayers' money being spent, what is it being spent on and to what effect? Only then can the public play their part as 'armchair auditors'.

5.2 Comments

The success of open data policy in the public sector will depend on the following factors:

1 Greater insight into what data are available

The analysis carried out for this study and previous audits conducted by the Court of Audit³¹ found that ministries do not have a full insight into what data are available. Such an insight, however, is essential to decide what data should be opened up and what should not. In our opinion, the

³¹ See, for example, our report, *Central Government Information Management* (2010).



ministerial Chief Information Officers have an important role to play in identifying and classifying the available data but are failing to rise fully to the challenge.³² A national information infrastructure along the lines of the UK example³³ would help the government identify the public data of greatest social significance and the data that should in any event be opened up.

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2 Create the right conditions for open data

For data to be open, they must be public, findable and re-usable. This is not always the case under current legislation. At present, the government has to publish data only if asked to do so by a member of the public (passive publication). An obligation to publish data actively or a government that did so of its own volition would make data available to all members of the public. Not all published data may be re-used. Few data vendor organisations permit re-use at present. In brief, active publication and the removal of obstacles to re-use are necessary to open up more data.

Furthermore, the government must create the right conditions for re-use. It must invest in both the supply and the demand sides of open data. On the one hand, it must facilitate the opening up of more data on the one hand (for example through a dedicated portal). This will require the government to deploy more people and resources. On the other, it must invest in facilities to encourage more re-use of open data, as it has in the breakthrough open geo-data project.³⁴ The United Kingdom, the United States and Canada, for example, have set up Open Data Institutes. Something similar is needed in the Netherlands.

³² See our report *Lessons learned from government ICT projects* (2013).

³³ See <http://www.gov.uk/government/publications/national-information-infrastructure/national-information-infrastructure-narrative>.

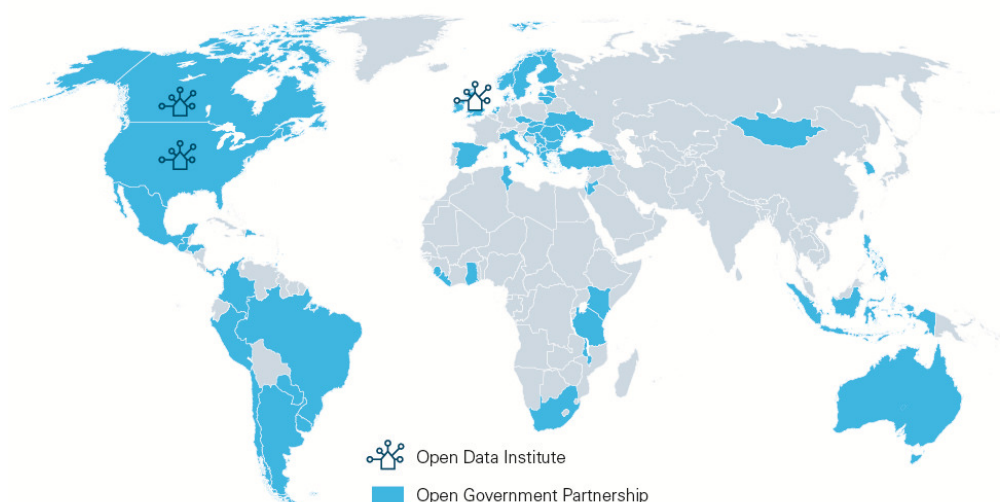
³⁴ Good examples are hackathons, master classes and competitions such as those organised by Kennisland and the Open State Foundation.



6. Factsheets

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1 Fact Sheet: Open Government Partnership/Open Data Institute



Member countries of the Open Data Partnership (marked in blue) and countries with an Open Data Institute (United Kingdom, United States and Canada).

Open Government Partnership

The Open Government Partnership (OGP, 2011) is a multilateral initiative launched by the US President, Barack Obama, and the UK Prime Minister, David Cameron. The initiative's goal is to encourage governments to be as 'open' as possible and render transparent account for their actions. Sixty-three countries, including the Netherlands, are currently participating in the OGP (see map above). Participants in the OGP commit themselves to preparing action plans to make their governments more open. Last year (September 2013), the Dutch government accordingly published its Open Government Action Plan. Each year, participating countries (including the Netherlands) must carry out a self-assessment to determine where they stand in the implementation of their action plans. Furthermore, they must participate in an external biennial assessment conducted by the Independent Reporting Mechanism. The aim of this independent assessment is to encourage debate among the participating countries and with governments and the public.

Open Data Institute



The United Kingdom set up the Open Data Institute in 2012 to catalyse the evolution of open data. Its aim is to match the supply of open data with the demand for it and to enhance transparency, efficiency and economic value.

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The ODI is a not-for-profit institute that secured **ten million pounds sterling** on its launch from the UK government for the period 2012-2017. This funding is dependent on matched funding from industry. The ODI also received \$750,000 from the Omidyar Foundation. The funds are used to support start-ups, such as Open Health Care UK and the prescribinganalytics.com website.

The Open Data Institute's activities

The Open Data Institute concentrates on four clusters:

- *The business sector*: support for small businesses developing promising open data activities for both the private and the public sector. The businesses are selected by means of an annual competition.
- *The public sector*: the development of an economic benefit analysis and a business model for open data. The analysis and the model are designed to make the public sector more efficient and to ensure that taxpayers' money is spent well.
- *Universities and education*: the provision of open data training courses. The institute develops standards to promote the use of open data.
- *The international dimension*: the institute has the ambition to act as a central contact point and representative for international players such as the World Bank.

Facts & Figures

The institute's first annual report, *ODI's First Year*,³⁵ reveals that in its first year of operation the Open Data Institute:

- reached more than 100,000 people in business, the public sector, universities and NGOs in a variety of countries through its activities;
- has developed an open data certificate based on legal, technical, social and practical criteria and has already certified a number of businesses;
- has supported start-up businesses; and

³⁵ <http://theodi.org/odisfirstyear-annual-report>.



- has developed and held training courses.

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There are currently three ODI country nodes (United Kingdom, Canada and the United States) and there are plans³⁶ to set up 13 ODI nodes worldwide. The Netherlands is not yet on the list.

³⁶ <http://www.theguardian.com/technology/2013/oct/29/web-inventor-open-iodata-institute-new-global-network>.



2 Fact Sheet: Financial transparency and open data

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Financial transparency

The Court of Audit is a strong advocate of an effective and transparent public sector. We think it is very important that public authorities are open and honest about their expenditure and the goals they achieve. The worldwide evolution of open spending, culminating in maximum financial transparency in the public sector, is the engine behind this change. Open spending entails the publication of the government's revenues and expenditures in the form of open data. As with other forms of open data, there must be no obstacles to their use and the data must be provided in a format that enables electronic analysis and processing.

To be meaningful, information on public expenditure must be available at transaction level. At present the government provides an insight only into budgeted expenditure at policy article level. In the *Open Government Action Plan*, the government announced that it would 'investigate if and how the provision of government budgets and expenditures can be improved and made more active'. The Ministry of Finance is currently leading the way in standardising and, in due course, opening up the ministries' financial records.

Open spending to level the playing field

The importance of open spending is not confined to central government in a narrow sense. The availability of regularly updated open data offers many opportunities in areas from which central government is withdrawing and leaving implementation to other public sector bodies or semi-public organisations, such as healthcare, education and social services. This levels the playing field for all parties – ministers, the House of Representatives, the public and actors in the field. Given its responsibility for the system, it goes without saying that unlocking spending data is a task for central government.

More controllers, more real time

Open spending, especially in combination with the current technical functionalities and the government's ambition to digitise the budget, can help clarify both the budget and the accounts. It also opens up more opportunities for the public to act as 'armchair auditors' and take a critical look at how taxes and social insurance contributions are spent.

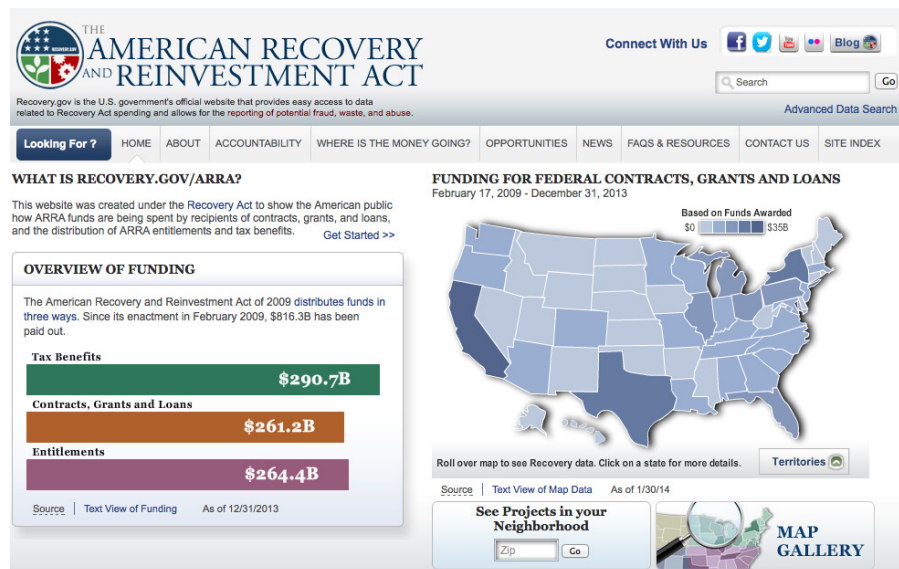


Technical advances can also make it possible to follow developments in real time. If information is available earlier, policy can be adapted earlier.

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The US Recovery.gov site is a good example of how open spending works in practice. It enables the public to follow the use of aid funds provided under the American Recovery and Reinvestment Act (ARRA) and of the aid provided to victims of Hurricane Sandy. The website was set up under the ARRA to create transparency and combat fraud, waste and corruption.

Recovery.gov provides oversight of \$840 billion of US disaster relief funding down to project level.



The website gives the public and media an oversight of how much is spent on individual projects and to what effect. An API³⁷ (Application Programming Interface) has been developed for data lovers. Internationally, Recovery.gov is a unique example of how open spending can be an integral part of government policy from the very start of a programme.

³⁷ An API is a set of definitions for computers to communicate with each other. On the internet, APIs act as the interface between websites to facilitate data interchange.



3 Fact Sheet: Gas extraction and open data

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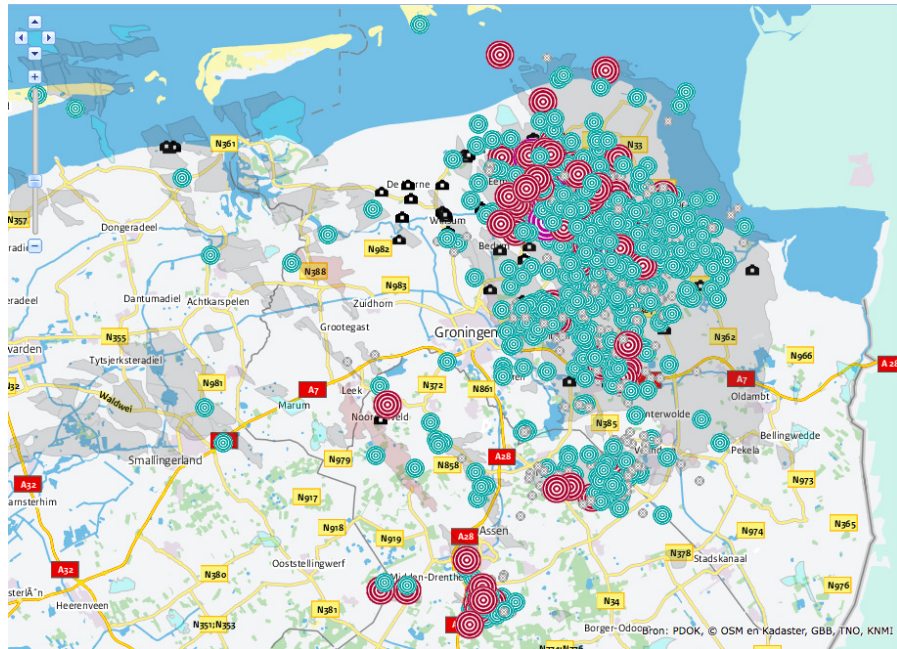


Figure: Screenshot from opengis.eu/gasbevingen

The gas extraction case is a good example of how the public can use open data. The Groninger Bodem Beweging (Groningen Earth Movement, GBB) created an interactive map using largely open data to display earth tremors in the north of the Netherlands. The map informs the public about the serious problems caused by gas extraction. It is also a means to exert political pressure. The example shows that data sets that may seem irrelevant on their own can be of great value when combined with each other.

Public unrest

Natural gas was first discovered in the province of Groningen in 1959. Since then it has been extracted for domestic use and export by Nederlandse Aardolie Maatschappij (NAM). The Ministry of Economic Affairs is the sole shareholder in NAM, its supervisor and the concession grantor. One of the risks of gas extraction is earth tremors caused by subsidence. All went well for nearly 30 years but since the first earth tremor was registered in 1986, more than a thousand have followed. The tremors are increasing not only in frequency but also in strength. The increase is probably due to the intensification of gas extraction. The tremors have created a lot of unrest among local residents. Cracks in



their house walls are making them worried about whether they will ever be able to sell their homes.

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GBB and the web portal

An association was set up in Groningen by and for the public in 2009. The Groninger Bodem Beweging protects the interests of those whose property has been damaged by the consequences of gas production in the Groningen field. One of its initiatives is a portal to provide information on earth tremors.³⁸ It displays charts, statistics and interactive maps with information on gas extraction and its consequences. The portal was created by a working group of the GBB to inform members of the public, the media and politicians about the problems in Groningen.

Reliance on open data

The gas tremor portal was made by the GBB. On account of its limited financial resources, the GBB had to use data sets that were openly available. The portal is based on data from 12 source holders. It is precisely this combination of data sets that makes the portal so informative. Table 1 below shows the data sets used for the map by category and the extent to which they are open (can be requested) or available as open data (can be found on the internet in a computer-readable format).

**Open and public data sets used to create the GBB web portal
(as at 1 February 2013)**

Data type	Datasets	Source holder	Public?	Open data?
Reference	BRT background map	PDOK/Kadaster	Yes	Yes
	Municipal map	BAG	Yes	Yes
	Aerial photo	PDOK	Yes	Yes
	Open basic map	Openstreetmap	Yes	Yes
Geology	Landscape types	Provincial Geo Register	Yes	Yes
	Geographically important areas	Provincial Geo Register	Yes	Yes
	Geology	TNO	Yes	Yes
	Fault lines	DGM and TNO oil and gas portal	Yes	Yes
	Altitude map	PDOK	Yes	Yes

³⁸ <http://opengis.eu/gasbevingen/>.



	Extraction concessions (oil/salt/gas)	TNO oil and gas portal	Yes	Yes
	Applications (oil/gas)	TNO oil and gas portal	Yes	Yes
Consequences	Earth tremors	KNMI	Yes	No
	Damage reports	NAM	Yes	No
	Subsidence	NAM	No	No
Population information	Population centres	CBS	Yes	Yes
	Housing areas	CBS	Yes	Yes
	Buildings	PDOK/Kadaster	Yes	Yes
	Addresses	PDOK/Kadaster	Yes	Yes
	GBB members	GBB	No	No
Risks	Power lines	Hoogspanningsnet.com	Yes	Yes
	Risk map (vulnerable objects, gas and other pipelines, etc.)	Risicokaart	Yes	Yes
	National heritage sites	Cultureelerfgoed.nl	Yes	Yes
	Protected urban and village sites	Cultureelerfgoed.nl	Yes	Yes
	Dykes	Rijkswaterstaat	Yes	Yes

The table shows that, with the exception of data from NAM (damage reports and subsidence) and KNMI (earth tremor, only public as a PDF file), a lot of data were available as open data.³⁹ NAM publishes a map with information on damage reports and subsidence on its own web portal. The data underlying the map, however, are not open.

Together with the province of Groningen, the GBB has pressurised KNMI (the Dutch meteorological office) into providing more data on earth tremors. IN 2014, this resulted in KNMI providing GBB with up-to-date information on earth tremors, although it has not published it as open data on its portal or at www.data.overheid.nl. The GBB has used the information to set up its own system that automatically records the 30 most recent tremors measured by KNMI every quarter in its own databank. The data, supplemented with information from the Addresses and Buildings Basic Register, are published by the GBB.

³⁹ KNMI will provide data on earth tremors in accordance with open standards in March 2014.



4 Fact Sheet: Education and open data

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The screenshot shows the Scholenkeuze.nl website. At the top, there is a navigation bar with links for 'Voor gemeenten', 'Voor scholen', 'Contact', and a Facebook icon. Below this is a login section with fields for 'Gebruikersnaam' and 'Wachtwoord', and a button 'Inloggen'. A secondary link 'Account aanvragen | Wachtwoord vergeten | Meer informatie' is also present.

The main navigation bar includes links: 'Home', 'Zoek een school', 'Onderwijs in Nederland', 'Onderwijsvormen', 'Handige links', and 'Bronnen'. The current page is titled 'Bs Koningin Wilhelmina'.

On the left, under 'Schoolgegevens', there are star ratings for 'Omvang', 'Cito score', and 'Cito rendement'. Below this, 'Oordeel ouders (8 beoordelingen)' shows ratings for 'Tevreden', 'Sfeer', 'Veiligheid', 'Gebouw', 'Opbrengst', 'Communicatie', and 'Aanbevelen'. A filter bar at the bottom shows 'STRENG' and 'VRU'.

On the right, the school's address is listed: 'Koninginneweg 7, 2941 XH LEKKERKERK (NEDERLEK)'. Contact information includes 'Telefoon: 0180661763' and 'www.kwschool.net'. Additional details include 'Denominatie: Openbaar', 'Methode: Regulier', 'Aantal leerlingen: 223', and 'Voorschool: Aanwezig'. A map shows the school's location in Leek.

At the bottom right, there is a section titled 'Geen interview met de directeur beschikbaar. Hier uw schoolvideo? Vraag een login aan.' with an image of a person holding a video camera.

Figure: Screenshot from Scholenkeuze.nl

A good example of how open data can serve several goals is data.duo.nl. This open data portal presents a large number of data sets with information on all sectors of education in the Netherlands. Education is an important social field involving many actors and many different interests. The portal enables parents and pupils to make better-informed decisions on a particular school or course. Opening up the information has also increased the efficiency of DUO, the implementing agency of the Ministry of Education (OCW).

In the Netherlands, education data are provided by DUO. DUO finances and informs the participants in education and the education institutions. It manages data⁴⁰ on Dutch education in a data warehouse. The data are anonymised and aggregated (often at a class or school level) because basic data may not be used for policy or funding purposes (i.e. basic data from the Basic Education Register linked to personal numbers). The anonymised and aggregated data are provided by the Ministry of OCW in

⁴⁰ Four data domains are distinguished: (1) participation in education and achievements, (2) institutions and courses, (3) education personnel, and (4) financial data.



accordance with the 'open unless' principle⁴¹ and are available for re-use. The data have been available through the www.data.duo.nl portal since the beginning of 2012.

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Reason to open up education data

The direct reason to open up education data was a request for information made under the Government Information (Public Access) Act by the newspaper Trouw in 1999. Trouw requested information on school performance from the Education Inspectorate. The Inspectorate was reluctant to provide the information but the court ruled that Trouw was entitled to it. The Ministry of OCW then decided that 'if the Ministry had to give the information to Trouw others could also have access to it'. Furthermore, DUO had been receiving more and more time-consuming requests for data sets for many years.

Projected and actual costs and benefits

Before opening up the data, DUO made an estimate of the costs and benefits of providing them on data.duo.nl. It projected that the reduction in the number of requests would save it 7.5 FTEs. Furthermore, qualitative benefits were foreseen: the data would be easier to find, the government would be more transparent and the public would be better informed. Public re-use of the data could also produce more and new information products.

In total, the project cost about €500,000. According to DUO's staff, requests for information have fallen by 60%. The requests it now receives are different in nature than in the past: in the past the requests were for data sets, now they are for specific applications, combinations of data or specific variables that are not provided on data.duo.nl. A new approach is needed to answer these requests. The saving of 7.5 FTEs has not been achieved. Three FTEs currently deal with requests and maintain data.duo.nl. DUO now considers whether a new data set or a new variable can be added to the open data sets on a request by request basis.

⁴¹ The 'unless' is a ground to refuse publication as specified in the Government Information (Public Access) Act, such as privacy.



Re-use

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Third parties have set up sites using the open data provided by DUO, such as www.10.000scholen.nl and www.scholenkeuze.nl. These sites contain information chiefly on primary schools and to a slightly lesser extent on secondary schools. As part of the 'Vensters' online projects, the Primary Education Council provides education data on maps (see scholenopdekaart.nl). However, a lot of the information provided on vocational, professional and university education is still unused.

Initiatives have been taken in Germany and the United States to enable potential and actual students to compare universities. The United States, for example has passed the Student Right-to Know Act. It lays down that universities must publish annual reports on their courses and performance. A comparable project has been set up in Germany. The Netherlands has set up the www.kiesjestudie.nl site with information on every course and every university in the country, but it is nowhere near as detailed as the German and US sites.



5 Fact Sheet: Healthcare and open data

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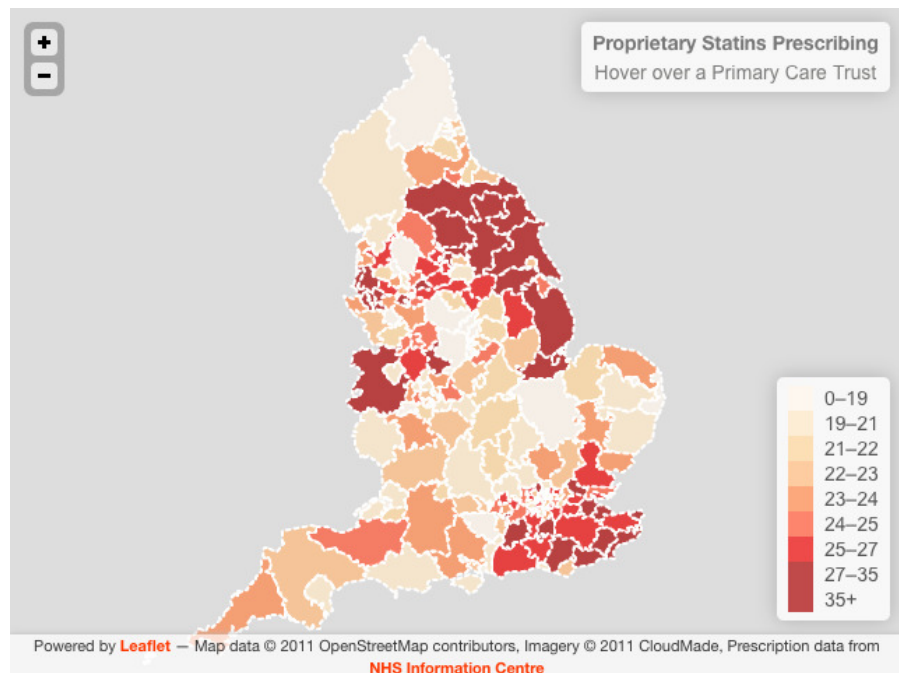


Figure: screenshot from PrescribingAnalytics.com

Open data can serve as an instrument for policymakers as the differences in prices and quality they reveal may be indicative of inefficiencies. A good example of this is in the healthcare sector in England. Open data have helped reveal that at least £200 million could be saved on medicines. Such open data are not available in the Netherlands, where healthcare data is kept by many different parties, both public and private. In consequence, the Netherlands cannot detect such potential savings.

Healthcare data in England

In England, open data on the prescription practice of general practitioners have helped identify at least £200 million in potential savings on medicines (see www.prescribinganalytics.com). The map above shows the variations in GPs' prescriptions of statins, which lower cholesterol, in primary care trusts. GPs in some trusts prescribe more expensive branded drugs than those in other trusts. As the map provides an insight into differences between trusts it can be used to make policy.



The website www.prescribinganalyticvs.com is a good example of how the public (in this case tech start-ups, academics and GPs) can use data from the National Health Service on GP prescriptions and open geodata from the Office of National Statistics to identify potential savings. Although there are significant differences between the Dutch and English healthcare sectors, this example illustrates the potential benefits of open data in the healthcare sector.

Healthcare data in the Netherlands

Open healthcare data are not available in the Netherlands even though there is a great demand for them from academia⁴² and society.⁴³ Opening up the data is projected to cut costs and enable re-use. It is also of social importance that the healthcare sector is transparent since it is funded from the public purse. Politicians recognise the importance of transparency in the sector, too. In spring 2013, the House of Representatives passed a motion on transparency in healthcare expenditure and the role open data and open spending could play.⁴⁴

A lot of data from organisations that currently do not provide open data are provided to and are available from Statistics Netherlands. Statistics Netherlands has comprehensive data on hospital care, secondary mental health care, assessments and care provided under the Exceptional Medical Expenses Act and the use of medicines. In January 2014, DBC-onderhoud (the Netherlands Diagnosis Treatment Combination, an independent expertise centre for healthcare performance) published the average cost of a number of common hospital treatments. Patients can now compare the cost of their hospital treatment against the average. In future, hospitals must provide information on the cost of the treatments they provide on request.

Although steps have been taken towards greater transparency in the healthcare sector, there are still many benefits to be gained. Healthcare insurers play a pivotal role since they hold most of the data but for competitive reasons they are not willing to open them up. The Minister of Health, Welfare and Sport (VWS) has carried out a study of opening up

⁴² See for example the column by Professor Gert Westert at

<http://www.zorgvisie.nl/Kwaliteit/Verdieping/2013/11/Mag-het-licht-aan-1415748W/>.

⁴³ See for example <http://www.smarthealth.nl/2014/02/06/gezondheidszorg-mist-open-data/>.

⁴⁴ See the Dijkstra/Voortman motion: <https://zoek.officielebekendmakingen.nl/kst-28828-34.html>.



healthcare data.⁴⁵ It found that non-personal data from a variety of parties⁴⁶ could be opened up.

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In response to a motion in the House of Representatives, the Minister of VWS declared that it was his ambition to set up a sustainable information system for the healthcare sector. The Secretary-General and the Chief Information Officer of VWS will consult administrative bodies to make agreements on when they will open up their data alongside the data that are already available. He will do so as part of the Information Management in Order Programme (PrIO).⁴⁷ The Minister is preparing an action plan to open up more data. It should be completed before summer 2014. The Ministry is also holding talks with the private sector to identify opportunities to open up healthcare data.

⁴⁵ See <http://www.rijksoverheid.nl/documenten-en-publicaties/publicaties/2013/10/23/eerste-inventarisatie-onder-voorbehoud-van-nadere-toetsing-door-betrokken-organisaties.html>

⁴⁶ NZa, IGZ, CVZ, CIZ, CAK, CIBG, RIVM, CBS, DHD, Vektis and DBC-onderhoud.

⁴⁷ See the letter, *Een duurzaam informatiestelsel voor de zorg* ('A sustainable information system for the healthcare sector') by the Minister of VWS (23 October 2013).



6 Fact Sheet: Development cooperation and open data

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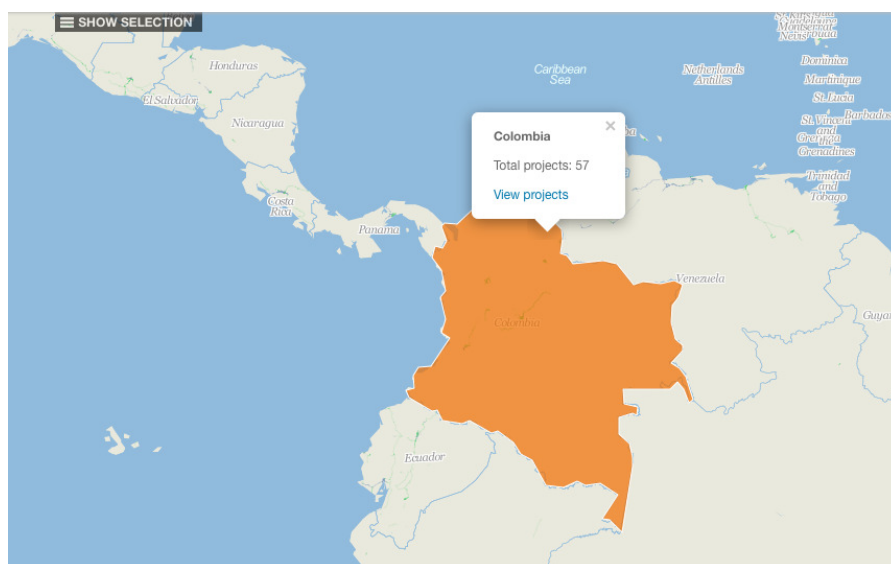


Figure: Screenshot from OpenAid.nl

The Ministry of Foreign Affairs has opened up its data on development cooperation. The open spending data provide public bodies, the public, supervisors and actors in partner countries more insight into the flow of aid funds. They are also an important instrument to improve accountability. The data have been used to develop a number of apps and websites such as *Where does my aid go* (an app for android and iOS) and *Open Aid* (www.openaid.nl).

IATI standard

Open development data were first discussed at the High Level Forum on Aid Effectiveness in Accra in 2008. The outcome was the *International Aid Transparency Initiative* (IATI), an international standard to open up development activities and the related budgets of donors and aid organisations. A unique feature of this standard is that it requires all organisations to keep and disseminate their data in the same way. This makes communication between the organisations easier and clearer. Every organisation uses the same data fields, the same names and labels for the fields and the same definitions.



What information does Foreign Affairs keep?

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Through the Ministry of Foreign Affairs, the Netherlands provides a single data set on development cooperation containing a variety of data.⁴⁸ The data set contains all development-related expenditure by the Ministry of BZ.⁴⁹ The expenditure in the data set is broken down by recipient organisation and, where possible, by project. It can therefore be determined which organisations receive development aid from the Netherlands and where expenditure is the highest. It can also be seen what kind of projects are funded and for what purpose. However, 40% of the activities are multilateral; aid is given to an organisation (for example the World Bank) that then allocates it to countries, other organisations and projects. The data set shows how much money is given to the organisation concerned, but not to the country or project.

In addition to this expenditure, the Ministry of BZ's data set has included estimates for each activity since 2013. The funds budgeted for each recipient organisation (both multilateral and bilateral) are therefore included and the exhaustion of the budgets can be followed.

Re-use

The open data provided by the Ministry of BZ are suitable for re-use (they are provided in an xml file). The data are also re-used. A good example of re-use is www.openaid.nl set up by the non-profit organisation AKVO.⁵⁰ A map on this site clearly shows which projects the Netherlands funds in a particular country, the kind of projects funded, how much money they receive and since when they have been receiving funds from the Netherlands. The site shows only direct Dutch expenditure that is linked to a country and a project in the data set.

Another example is the app, *Where does my aid go*. It was developed by the National Committee for International Cooperation and Sustainable Development (NCDO) and displays the activities funded by the Ministry of BZ in each country. Information is also available on the recipient countries, such as income per capita, life expectancy, CO₂ emission per

⁴⁸ Not via data.overheid.nl but via <http://www.rijksoverheid.nl/opendata/ontwikkelingssamenwerking>.

⁴⁹ All expenditure on Official Development Assistance (ODA) activities. The Netherlands also funds ODA activities through other ministries and some appropriations to the ODA budget are not visible in the Ministry's data set. In 2012, ODA expenditure through other ministries and the appropriations were together equal to 21% of Dutch ODA expenditure.

⁵⁰ AKVO means water in Esperanto.



capita and more. As in the case of OpenAid.nl, the insight into the aid is not complete because multilateral aid is not disclosed.