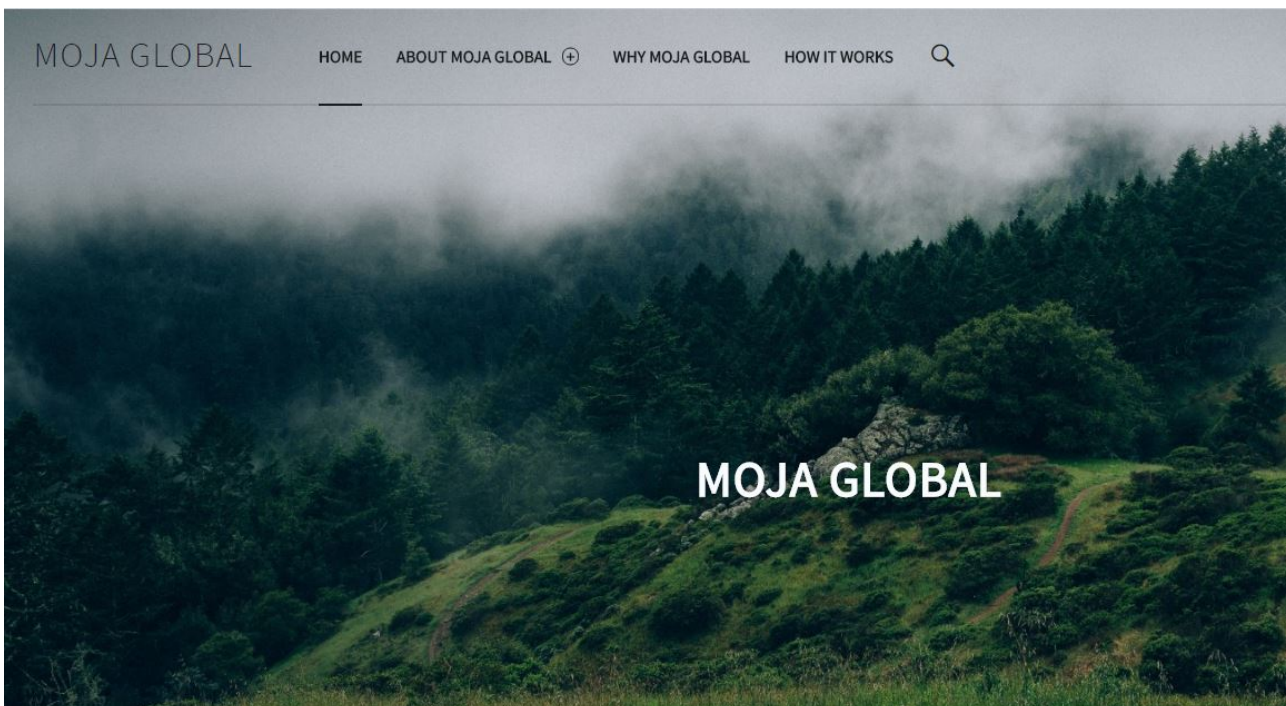


*moja global is a collaboration among governments to develop software informing land use policies. It is also designed to estimate greenhouse gas emissions from the land sector. Thanks to its open governance structure, funders, developers and users, have their say in the development of the software. The private sector is rapidly adjusting to this opportunity to gain value from the process. According to an opinion piece by Guy Janssen, interim director at moja global, this should, in turn, inspire governments to explore how open governance can create a virtuous circle leading to a similar multiplier effect for the common good.*



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## Open governance enhances the value of land use policy software



### Case study of remote sensing software shows the benefits of an open collaborative approach

In December 2015, the [COP21 Paris Agreement](#) saw many countries commit to [reducing greenhouse gas emissions](#) through initiatives in the land sector. In this context, emissions estimation systems will be key in ensuring these targets are met. Such solutions would not only be capable of assessing past trends but also of supporting target setting, tracking progress and helping to develop scenarios to inform policy decisions.

The core of these emissions estimation systems rely on software. Now is the time to realise that this kind of software will lead to greater benefits if developed using an open governance approach. This means involving all organisations who have a stake in the land use monitoring debate. We hope that the case of [moja global](#), outlined below, will inspire others to adopt an open governance model.

## **Open Governance in Governments**

moja global is a prime example of how national governments can reap the benefits of open source collaboration. The seal of professionally managed open-source software will give governments assurance that they will create many benefits. First, that the moja global tools are safe to evaluate the level of greenhouse gas emissions. Second, that they are producing reliable results. And third, that they are reliable over time as they are continuously maintained by the community.

Governments could benefit from open source at wider scale. To do so, they need to recreate the virtuous cycle of open source development already achieved in the private sector, particularly in software.

This could be translated to the public sphere as follows: good open source software results in good policies. Such policies create public goods, which generate the political will to invest more in good open source software. Thus, open source seems to be the perfect solution for governments to improve public sector performance and at the same time contain the growth of expenditure.

## **Letting go**

The trouble is that open governance goes against every administration's inclination to control everything. Instead, they will need to shift their governance model from top-down control to fostering community leadership among people doing the work on the open source. Until now, this approach has prevailed in open source software circles and is also reaching new horizons with [open science](#).

Imagine, for example, that an open source project is to contribute to a country's priorities. The country's civil servants must be able to work with other countries through a board of directors connected with the open source project to negotiate a joint strategy. This requires a mandate including flexible on the part of the officials involved, which is supported by financial contributions to the projects.

What is potentially problematic is that politicians would then need to invest in a joint effort without being able to claim the kudos associated with any of its success. Meanwhile, administrations would allow their software developers and scientists to work on open source projects. And this, without being able to control their day-to-day work and without owning the resulting intellectual property.

## **Remove sensing tech solutions**

There are already existing solutions to help estimate emissions from the land sector. They either provide remote sensing services or help to collect data on the ground. However, these solutions need to be combined with a view of producing the kind of information required to inform policy.

This means developing tools, which can be modified to adapt to the circumstances of each country, producing reports that are compliant with the standards of the United Nations Framework Convention on Climate Change (UNFCCC), developing projections to support Nationally Determined Contributions, and support broader land-use planning and tracking of policy outcomes. The tools also need to facilitate continuous improvement of estimates as new and better data become available.

The [Full Lands Integration Tool](#) (FLINT) meets all these criteria. This new tool aims to support all countries to implement and operate emissions estimates systems for the land sector. It provides a framework for each country to develop their own systems, data, products and capacity. It operates in a progressive manner without imposing specific methods or models.

FLINT started the domino effect that led to the creation of moja global. It is an open source solution so that it is available to every country. Its license makes it possible for every country to review the code to make sure it is safe to use. Moreover, by allowing a wide range of developers to work on its code the software benefits from the latest technical and scientific improvements.

Unfortunately, the internet is littered with abandoned projects that have been open-sourced because they are no longer useful to their owners. Making FLINT open source without maintenance and support amounts to putting a used couch on the pavement with a sign that says “please take me.” Successful open source projects need a home where they can be nurtured and cared for. moja global was set up to ensure that the FLINT and its associated software tools are accessible, reliable, thoroughly tested, well documented and continuously improved.

## **Linux model**

To learn which governance structure fits best with an open source product, moja global decided to learn from the experience and expertise of the [Linux Foundation](#). Linux has established and sustained some of the most important open source technologies available today. The 25-year-old Linux operating system (OS) is its flagship software. The kernel of this OS has grown from 10,000 to 22 million lines of code. Every day, 4,600 lines are added. More importantly, 5,000 developers from about 500 companies are working on the code simultaneously.

Linux has honed a governance system designed to foster fruitful collaboration between developers—be it volunteers or developers paid by companies with competing interests, operating in disparate markets with vastly different computing needs. It is this system of governance which has been credited with the explosive growth of open source software. In 2016, an estimated 78% of companies relied on open source software. That is nearly double the use of 2010. Most companies, which use open source also contribute to this software.

These achievements are only possible if open source projects and the companies contributing to the projects adopt an open governance structure that converges common interests.

## **The open source virtuous circle**

Open governance in commercial open source projects is remarkably simple. The more a company invest, the more they gain influence. And there are two spheres of influence: business and technical. Whereas business influencers invest money, technical influencers invest time and effort. A board of directors will typically guide business decisions, direct marketing and align the technical communities with their members.

If an open source project has large commercial value for a company, that company will contribute financially to the project in return for influence over business decisions and marketing orientation. This generates the resources required to manage open source projects in a professional manner with cutting-edge infrastructure. The board of directors, however, has no say on technical matters.

On the technical side, meritocracy rules. Anybody can contribute to the code. Contributions are reviewed by peers working on that particular part of the code. The developers who understand their part of the code best will likely be elected to lead the team. They coordinate progress with other team leaders through a technical steering committee. The latter has final and sole responsibility for technical decisions.

Companies continue to hire coders but can only give them general directions. Instead, the coders are collaborating with coders from other companies through the technical steering committee of the open source project. By setting their coders free, companies get software in return that has higher quality and better security. The software also offers the advantage of being more competitive and more flexible than the software each company could produce without collaborating.

The lessons are clear. "Organisations that don't harvest this shared innovation will be unable to compete: they will be late to market, waste R&D funds, and unable to innovate alone," Jim Zemlin, the CEO of Linux, said in media reports.

Clearly, open governance has given a boost to open source in the private sector. Open source is now the rule for software development generating faster innovation and more value. The private sector is proving that collaboration wins from competition. Meanwhile, governments are still strengthening competitive pressures to enhance public sector efficiency. By engaging with new initiatives like moja global, governments can test how to open up their governance and benefit from collaborating in an open manner.

[Guy Janssen](#)

Guy is interim director at moja global. He is also a governance advisor and a political economist, based in Brussels, Belgium.

Illustration credit: [moja global](#)