GODAN ACTION
Global Open Data
for Agriculture & Nutrition

New insights in impact evaluation of open data initiatives

GODAN Action supports data users, producers and intermediaries to effectively engage with open data and maximise its potential for impact in the agriculture and nutrition sectors. In particular, we work to strengthen capacity, to promote common standards and best practice, and to improve how we measure impact.

LESSONS FOR

PROGRAMME MANAGERS

IMPACT EVALUATORS

Introduction

Impact evaluation of open data initiatives is one of the three focal areas of GODAN Action. Open data efforts often don't follow a clear methodology to assess their impact. Nevertheless, insight into the (potential) impact of open data is key - to monitor and improve the performance of open data initiatives, to assess the effectiveness of funding and to demonstrate their value.
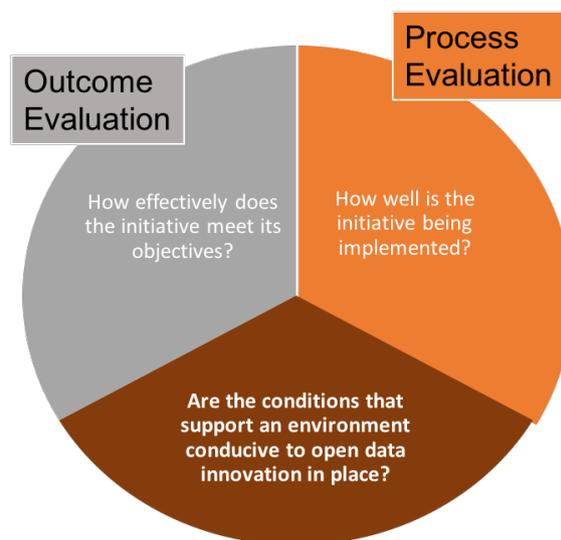
GODAN Action aims to address this need by developing an innovative impact evaluation method, building on a review of existing methods and cases, and trialled through evaluation of the specific thematic topics that GODAN Action works on: weather data, land data and nutrition data. The lessons learned from this process will inform guidelines to analyse other thematic topics, and also feed into a more general framework of impact evaluation. In the first year of the project, GODAN Action has focused on open weather data.

Approach

Developing a method for impact evaluation

The GODAN Action methodology for impact evaluation combines drivers for impact already identified by other methods whilst also taking account of newer perspectives, such as the political economy of ecosystems where open data initiatives are being implemented. We are also focusing on earlier stage assessment, as this offers better options to design, monitor and steer ongoing initiatives. Our proposed evaluation framework focuses on the questions and issues that a process and outcome oriented evaluation of open data initiatives should examine.

Figure 1: Overarching evaluation questions

Outcome Evaluation

Process Evaluation

How effectively does the initiative meet its objectives?

How well is the initiative being implemented?

Are the conditions that support an environment conducive to open data innovation in place?

The framework consists of three overarching research questions, covering the evaluation of conditions (associated with potential impact), the evaluation of the process and the evaluation of outcomes.

- Are the conditions that support open data innovation in place? Measurement of conditions that can successfully support open data initiatives, services and applications.
- How well is the initiative being implemented? Evaluation of the quality of implementation of open data initiatives.
- How effectively does the initiative meet its objective in terms of outcomes? Assessment of the intended and unintended, positive and negative outcomes of an initiative.

Although we believe that all evaluations need to address all three questions, the character of the initiative and the priorities of the evaluation mean certain questions and issues will unavoidably be prioritised.

The aim is that the proposed method will not only be applied by GODAN Action, but also by independent stakeholders. To provide some initial guidance for these potential users, we have developed a research design for a hypothetical evaluation of a real-world open weather data initiative that is currently implemented in Bangladesh.

Impact evaluation

Over the course of the project, the method will be applied to different initiatives in the thematic topics of weather data, land data and nutrition data. One of the starting points is the development of a dedicated Theory of Change (ToC) for a each thematic topic. This allows us to identify and focus on the most relevant chains of impact. Weather data, for instance, was specifically assessed from the perspective of the co-development of services for farm management and advice through data providers, data and service intermediaries and end users like farmers. The foreseen impact chain for weather data, for example, was described as follows:

Improving the capabilities of intermediaries to work with available weather data and to collaborate with data providers and other intermediaries to create added value services. Setting up alliances and co-development would be the most effective way to create business around this theme. Starting from targeted capacity building material that integrates the technical and practical issues of creating services from data, CoP's can be formed of data and service providers and extension workers and farmer unions, ideally leading to co-development initiatives that are harnessed to provide management advice to smallholders.

The main routes along the impact chain of the GODAN Action ToC are as described in the table below.

ToC outputs and outcomes	Use Case: Encourage and support co-development of farm management services
Output	Pilot interventions
	Training materials
	Training courses
	Case studies
Short-term outcomes	Increased no. and capacity of intermediaries to handle data
	Increased private sector involvement
	Innovative data services
Medium-term outcomes	Development of CoPs on open data
	More effective investments in data based business
Long-term outcomes	Data driven business creation
	Improved service delivery

Practical lessons and next steps for key stakeholder groups

LESSONS FOR PROGRAMME MANAGERS

We expect that the lessons learned from the GODAN Action impact evaluation of weather data initiatives might hold for many similar weather data based initiatives. These lessons are:

- The supposed strategic and commercial value of weather data, and the governance around that, data can be a substantial barrier when developing services that rely on access to that data.

- Weather data sources are often hard to identify, highly specialised and technical, whilst rarely being easily usable and interoperable. This is a function of the often long history of weather data collection, the fact that it is still governed by national government weather services, and its rather scientific and technical nature.

- Both of the above issues often impede the uptake of weather data by intermediaries and the development of an ecosystem of co-development, and this limits the impact of weather data based services for end users.

- Despite the often closed nature of local weather data, there are useful open weather data resources available. Data with global coverage from NOAA or ECMWF and Copernicus, for example, are often used as a base for weather data based services, including in developing countries.

Looking ahead, we expect developers of open data initiatives to benefit from the evaluation framework set up by GODAN Action, and particularly from information regarding the context and conditions that determine the impact that such initiatives could achieve in a developing context.

The political economy of a given context is highly influential in the potential impact of open data initiatives and the specific routes to impact that are feasible. This perspective is generally missing in existing evaluation methods but it is highly relevant for understanding mechanisms of impact, defining effective impact chains and identifying sound indicators/measures.

Using this contextual knowledge and performing a careful analysis of potential drivers and barriers can provide useful information regarding where impacts can or cannot be expected and which contextual factors could be influenced to increase impact. The framework provides guidance for identifying, examining and exploiting relevant impact chains, which again is a good starting point to develop feasible performance indicators and a dedicated M&E framework.

LESSONS FOR IMPACT EVALUATORS

The broad review of open data evaluation methods provides a knowledge base for methods and approaches to impact evaluation and a source of practical cases where such methods have been applied.

There is still some way to go in the full development of our evaluation method, but it already provides some valuable building blocks from existing methods and ideas on how to extend those methods through, for example, the inclusion of political economy as one of the conditional factors determining impact.

We will continue to develop real world cases evaluated by, or with support from GODAN Action in the three thematic topics that are the focus of the project, to build a knowledge base of applications of our methodology.

Implications for the sector

The domain of impact evaluation of open data initiatives is emergent and still quite immature and theoretical. Published research generally has a qualitative character and is based more on literature review and less on direct contact with stakeholders. Our results so far confirm that many open data efforts do not seem to follow a clearly defined path aimed at achieving impact, and that generally no systematic monitoring of effects is in place. The methodologies used are generally not documented. This coincides with the lack of availability of a clear common framework towards impact and the result is that sound evidence and empirical proof of impact is lacking.

The study of political economy and its link to achieving impact with open data initiatives has led to some important insights for the further development of the GODAN Action methodology.

- We need to adjust our expectation of what open data initiatives can achieve and over what period of time. Examining outputs and outcomes may in some cases be more appropriate to study than longer-term impacts, such as how open data can help reduce poverty.

- Additionally, impact evaluation can reuse results from existing, broader studies that provide evidence for such higher level impact, for instance through the availability of better, more usable data sources.

- Thus, we need to broaden the focus of our evaluation to consider a) what interests and agendas are being supported by existing data practices, and b) how these choices and practices affect citizen rights and socio-economic divides.

- We need to develop frameworks that take into account the hybrid character of the open data innovation landscape (open and closed data).

Next steps

Looking ahead we will build upon the review of methods, the impact evaluation methodology and the work on the thematic weather data topic.

We will further improve the methodology, with specific emphasis on guidelines for the definition of feasible indicators over the three pillars of the method: conditions, process and outcome. This will be done using the material from the current weather data cases, applying theory to practice and vice versa.

We will also start work on the thematic topics of land data and nutrition data. For these topics, we will perform comparable case study work, applying the impact evaluation methodology to new real-world cases.

References

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Authors

Laura Miguel Ayala
Impact Assesment Researcher, Wageningen Environmental Research, laura.miguelayala@wur.nl

Rob Lokers
Project Manager (Research ICT), Wageningen Environmental Research, rob.lokers@wur.nl

Evangelia Berdou
Research Consultant, evangeliaberdou@gmail.com

Pauline L'Hénaff
Project Manager (Open Data), Open Data Institute, pauline@theodi.org

Philip Horgan
Head of Monitoring, Evaluation and Learning, Open Data Institute, philip.horgan@theodi.org