PART 3

Conclusion
CHAPTER 17

Leveraging Open Data as a New Asset for Development

The preceding discussion has relied on a wide variety of emergent evidence to better understand how, when, and under what conditions open data projects succeed and fail in developing economies. Our goal, as indicated at the outset, has been neither to champion nor denigrate the potential of open data. The available evidence indicates a mixed picture, with open data resulting in meaningful impact in some cases, and less so in others. Identifying the signal in current research and practice is challenging since the field is still largely built around a belief in the potential of open data and a few compelling yet anecdotal success stories. Our effort here has been to understand specific pathways—using a logic model—by which open data operates in developing economies. This logic model can inform future research and evidence gathering toward a more conclusive understanding of open data’s true impacts on development.

Our broad conclusion, supported by the literature, stories, and examples contained in the case studies, are that the theory of change being advanced in the field of open data for development is built around the premise that open data can:

- **Improve governance**, specifically by enhancing transparency and accountability, introducing new efficiencies into service delivery, and increasing information sharing within government departments
- **Empower citizens** in developing countries by improving their capacity to make decisions and widen their choices, and also by acting as a catalyst for social mobilization
- **Create economic opportunity**, notably by enabling business creation, job creation, new forms of innovation and more generally spurring economic growth
- **Help solve complex public problems** by improving situational awareness, bringing a wider range of expertise and knowledge to bear on public problems, and by allowing policymakers, civil society, and citizens to better target interventions and track impact
Again, none of these impacts are inevitable; they are currently better understood as intended rather than realized impacts. As part of our broader logic open data model, we have identified a number of enabling conditions and disabling factors—phenomena or aspects that may spur the potential of open data in developing economies. In particular, the impact of open data in developing economies depends upon:

- **Problem and Demand Definition**: whether and how the problem to be addressed and/or the demand for open data are clearly defined and understood
- **Capacity and Culture**: whether and how resources, human capital and technological capabilities are sufficiently available and leveraged meaningfully
- **Partnerships**: whether and how collaboration within and, especially, across sectors using open data exists
- **Risks**: whether and how the risks associated with open data are assessed and mitigated
- **Governance**: whether and how decisions affecting the use of open data are made in a responsive and legitimate manner

The accompanying Periodic Table of Open Data Impact Elements, outlined in Part II details the enabling conditions and disabling factors that must be taken into account. The list can be used as a checklist of elements that are essential to keep in mind whenever designing or funding open data projects since they may determine the difference between success and failure.

We conclude this book with six takeaways and subsequent recommendations for open data practitioners and decision makers, such as donor agencies, on how to leverage open data as a new asset for development. They represent an initial effort to operationalize the above discussion, and are derived from the empirical evidence in the case studies conducted as part of this project. Considered together, they amount to something of a “roadmap” of open data project design, implementation, and monitoring within developing economies.

Focus on and define the problem, understand the user, and be aware of local conditions. The most successful open data projects are those that are designed and implemented with keen attention to the nuances of local conditions, have a clear sense of the problem to be solved, and understand the needs of the users and intended beneficiaries. Projects with an overly broad, ill-defined, or “fuzzy” problem focus, or those that have not examined the likely users, are less likely to generate the meaningful real-world impacts, regardless of funds available. Too often open data projects have less impact because they
are overly focused on leveraging newly available technology or datasets rather than being problem- and user-focused.

**Recommendations for open data practitioners**

- Articulate the issue to be addressed with as much granularity as possible.
- Identify and seek to understand the needs of the intended users and beneficiaries (including data intermediaries/partners such as NGOs or journalists) of the open data effort (potentially using user-centric design methods).
- Clearly define why the use of data for addressing the problem matters.
- Explore existing work that seeks to address the problem (locally or otherwise) and how your open data efforts are complementary.

**Recommendations for decision makers (including donor agencies)**

- Seek to promote problem- or demand-focused open data policies and strategies where open data can provide value.
- Seek ways to strengthen the capacity toward problem definition and user-centric research, for instance, by developing common problem definitions or user research tools and decision trees that can be used by practitioners.
- Develop and integrate—or ask your partners or grantees to conduct—regular exercises that identify how open data could contribute to the problem(s) one seeks to address (as to generate a data-demand culture).
- Invest in research that maps and seeks to create a better understanding of the demand side of data that can or could be matched with the current or future supply side of open data (including, for instance, a list of questions and problems that can complement the list of data-sets released).
- Invest in the development of data-capturing tools that can be used toward specific ends (such as opening information on results-based financing efforts) but have the flexibility to be applied in varied contexts.
- Require grantees to complete a “canvas” or diagnostic of open data project design to demonstrate that the problem and theory of change have been well-defined and to provide the basis for conversation between donor and recipient about the use of data.

*Focus on readiness, responsiveness, and change management.* Implementing open data projects often requires a level of readiness among all stakeholders, as well as a cultural transformation in the way governments and institutions collect,
share, and consume information. For development funders, this important determinant of success can imply difficult decisions regarding high-potential open data initiatives in developing economies that lack clear institutional readiness or demonstrated responsiveness to feedback. The existence of a robust ICT4D sector, such as that found in Ghana, can act as a catalyst for the quick and effective development of open data capabilities. Moreover, commitment and buy-in from international development agencies themselves can play a key role in establishing the readiness necessary for impact, as evidenced in cases like Burundi’s Open RBF efforts.

Recommendations for practitioners

• Consider the institutional culture(s) and “readiness” of the relevant data providers, data intermediaries, and data users that may impact both the supply of data and the response to or use of the insights generated.
• Explore partnerships with providers, partners, or intermediaries with capabilities that could help fill existing capacity gaps.
• Develop internal data literacy training opportunities.

Recommendations for decision makers (including donor agencies)

• Develop and/or fine-tune data-readiness assessment tools that can help determine the true potential of releasing and leveraging open data in developing economies.
• Invest in the generation and dissemination of evidence that can strengthen the value proposition of open data toward increasing political will to open up datasets.
• Invest in or develop coaching efforts that can nurture data-readiness and a data-driven culture at the supply, demand, and use sides of the open data ecology.
• Consider the creation of new “data intermediaries” and/or seek to support existing intermediaries (such as journalists or libraries) that can bridge the data-gap.
• Develop roadmaps to prevent or address the growing divide between those who have access and capacity to leverage data and those who do not.

Nurture an open data ecosystem through collaboration and partnerships. Data does not exist in isolation. The success of open data projects relies on collaboration among various stakeholders, as well as collaboration with data scientists and topic or sector experts. During the problem definition and initial design phase,
practitioners and funders should explore the types of collaborations that could increase uptake and impact. Such partnerships could, for example, take place with other data providers (perhaps from different sectors), like-minded international or local organizations, as well as established intermediaries such as journalists or industry groups.

**Recommendations for practitioners**

- Conduct due diligence on important actors in the field relevant to the initiative.
- Explore, in particular, private-sector data holders that could be incentivized to participate in a data collaborative (complementing open government data).
- Build bridges with cross-sector stakeholders in the problem and solution (i.e., open data) spaces, for example, by attending conferences or meetups.
- Establish mechanisms and agreements to enable ongoing collaboration between identified partners.

**Recommendations for decision makers (including donor agencies)**

- Promote collaboration and dialogue among and between the supply (including national statistical agencies and corporate actors) and demand side of open data.
- Develop methodologies that can help identify different demand segments and/or constituencies that can leverage open data toward their mission.
- Invest in “labs” and creating those structures in which different partners can freely collaborate and exchange expertise toward solving hard problems.
- Develop and/or strengthen problem-solving and expert networks seeking to address sustainable development challenges with open data.
- Develop and/or fine-tune common agreements that can accelerate partnerships and exchange of data and expertise.
- Support the organization of and participation in events where different actors (global, regional, and national) can connect and identify common solutions toward improving the open data ecosystem.

**Have a risk mitigation strategy.** Open data projects need to be mindful of some of the important risks associated with even the most successful projects. Notably, these risks include threats to individual privacy (for example, through insufficiently anonymized data) and security. Funders should ensure
that projects dealing in information that is potentially personally identifiable (including anonymized data) have audited any data risks and developed a clear strategy for mitigating those risks before proceeding with the partnership.

**Recommendations for practitioners**

- Assess how the data will be accessed and used, including ways that might not represent the central intended use case(s).
- Conduct a data inventory to determine how the data will be stored and monitored, and who can gain access to the data.
- Consider risk-producing scenarios or use cases to help target a mitigation strategy.
- Develop risk counter-measures based on these scenarios, such as data handling policies, training, technological solution (for example, to de-identify personal information) and a data ethics framework.

**Recommendations for decision makers (including donor agencies)**

- Seek ways to complement the value-proposition of open data with a broader awareness of the risks involved— for instance, through an effort to collect (learn-by-failure) case studies or stories that illustrate what can go wrong.
- Support or develop “data responsibility” models, including decision trees or expert systems that enable responsible decision making at each stage of the data life cycle (collecting, processing, sharing, analyzing, and using);

**Secure resources, build evidence, and focus on sustainability.** Open data projects can often be initiated with minimal resources, but require funding and additional sources of support to sustain themselves and scale. It is important to recognize that access to funding at the outset is not necessarily a sign that open data projects are destined for success. A longer term, yet flexible, business model or strategy is a key driver of sustainability, and should be developed in the early stages of the design process.

**Recommendations for practitioners**

- Identify local and international funders active in the sector or vertical problem area to be addressed, or in the use of data and technology to solve public problems.
• Determine how long current funding streams will be sufficient for sustainability.
• Explore and learn about additional funding or revenue generation options (e.g., tiered pricing models for open data-driven business offerings).

Recommendations for decision makers (including donor agencies)

• Develop assessment methodologies that can help identify the cost and resources necessary to sustain open data initiatives, such as the World Bank’s Open Government Data Toolkit, the Open Governance Costing project being advanced by the World Bank and Research Consortium on the Impact of Open Government Processes.633
• Coordinate and increase funding resources—for instance, by allocating an (open) data line in each budget proposal.

Build a stronger evidence base and support more research. This book sought to capture the narratives, practice, and evidence around open data’s uses in developing economies. Although there are some early, often muted signals pointing to the impacts of open data for development, the field is still largely built on a belief that open data is creating demonstrable positive outcomes. To move to a more evidence-based understanding of open data in developing economies, we distilled a theory of change and analytical framework informed by the current practice, not to further entrench faith in the positive narrative surrounding open data, but to create a flexible analytical framework that can inform future research and impact assessment. We identified a number of premises—in the form of apparent enabling conditions and disabling factors for open data initiatives—but these premises need further study (and scrutiny) by the research field to determine whether or not they hold water in practice. Thus we end with a call for more research; if open data is to reach its significant, and much-discussed, potential for spurring development, we need to move beyond ideology to create a systematic understanding and evidence base regarding what open data’s impacts have been to date and how positive impacts can be enabled.

Recommendations for open data practitioners

- Embed research and analysis of what works in the design of the open data initiative allowing for both more iterative approaches and long-term insights into how to improve certain variables.
- Integrate lessons learned and research findings into the design and development of open data initiatives (toward a more evidence-based design process).

Recommendations for decision makers (including donor agencies)

- Support more research and the further development and implementation of assessment frameworks (as provided in this book) that can help identify what works and what doesn’t; as well as what can be used to scale open data initiatives across developing economies (including the possible creation of “what works labs” in different regions).
- Seek ways to translate and disseminate existing research and evidence into an “open data canvas” (akin to the GovLab Public Projects Canvas634), using the Periodic Table we developed in this book, that can guide more informed approaches to leverage scarce resources and ensure that interventions do not reinforce existing power or economic inequities.

Finally, given the nascent nature of existing open data initiatives, the signals of open data’s impact in developing economies are still largely muted, as evidenced in the examples discussed in our paper. Our goal in this book was not to use these examples as the ultimate proof of open data’s importance for development; rather, we have picked up these signals and placed them into an analytical framework to enable further practice and analysis going forward. It is only with this type of structured analysis that we can gain a systematic and comparative evidence base of whether and how open data is meaningfully impacting on-the-ground conditions in developing economies.

Remaining Questions and Evidence Gap

Although much research has contributed to our understanding of how and when open data works, there remain several questions that could benefit from more evidence and research. For instance:

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Matching supply and demand:
- How can we identify and unlock currently closed datasets that are likely to have a real-world impact, while avoiding “open-washing”—i.e., the tendency of governments to characterize data releases of questionable impact as examples of “open data” as a means for improving reputation?
- How can we better match the supply of open data to the demonstrated demand for data among communities of use, and, as a result, minimize instances of scarce resources being used to open data with low potential for use and impact?

Building capacity and an institutional open data culture:
- How can developing countries build open data capacity, e.g., technical readiness, culture change, and training, necessary to maximize positive impacts and avoid potential harms?
- How does the average cost of building open data capacity differ between developing and developed countries?
- How does one establish a data-driven mindset and sense of responsibility among decision makers in developing economies that would generate a commitment and willingness to act upon the insights gained from open data?
- How can development agencies accelerate the supply and responsible use of open data and share their own data with a broader range of constituencies, including governments, NGOs, educational institutions, business hubs, and other donor organizations?
- How can we strategize and implement institutional and cultural change, including within international development organizations, to amplify the impact of open data in developing economies?

Building an open data ecosystem:
- How can we better capture the direct effects of impact enablers—like intermediaries—to help practitioners target efforts?

Risks and challenges:
- How can we avoid entrenching existing power asymmetries and inequalities—both socioeconomic and digital—when much of the marginalized community in developing countries is not represented in official datasets?
- How can we minimize the potential privacy and security harms resulting from the opening of more government data?