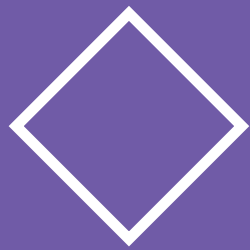


DATA+ Demand



# TOWARD AN OPEN DATA DEMAND ASSESSMENT AND SEGMENTATION METHODOLOGY



Stefaan G. Verhulst  
Andrew Young





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## Contacts

Interested in learning more or applying the methodology in your country or city?

Contact Stefaan Verhulst at [stefaan@thegovlab.org](mailto:stefaan@thegovlab.org)

# Open Data: “If You Build It, Will They Come?”

## WHY WE NEED A METHODOLOGY

Across the world, significant time and resources are being invested in making government data accessible to all with the broad goal of improving people’s lives. The 2016 [Open Data Barometer](#) found that 79 out of 115 countries examined have an open data portal. As of September 2017, [Data.gov](#), the United States’ open data portal, provides access to 302,614 datasets. Meanwhile, [54 countries](#) across the globe have adopted the [International Open Data Charter](#).

Evidence of [open data’s impact](#)—on improving governance, empowering citizens, creating economic opportunity, and solving public problems—is emerging and is largely encouraging.

Yet much of the potential value of open data remains untapped, in part because we often do not understand who is using open data or, more importantly, who is not using open data but could benefit from the insights it may generate. By identifying, prioritizing, segmenting, and engaging with the actual and future demand for open data in a systemic and systematic way, practitioners can ensure that open data is more targeted.

We know that we cannot simply focus on releasing open data, nor can we build a portal without understanding its possible uses and demand. Yet, we often do just that. Understanding and meeting the demand for open data can increase overall impact and return on investment of public funds.

## WHO THE METHODOLOGY IS FOR

In what follows, we provide open data policymakers and practitioners with an approach for identifying, segmenting, and engaging with demand. This process specifically seeks to empower data champions within public agencies who want to improve their data’s ability to improve people’s lives.

## WHAT THE METHODOLOGY IS NOT MEANT FOR

In implementing our methodology, we learned that assessing demand is often confused with critiquing current open data efforts. Our methodology is not meant to assess current performance. Using a customer-centric and demand-driven strategy, it instead seeks to enable organizations to increase the value of their work.

## HOW WE DEVELOPED THE METHODOLOGY

We narrowed our methodology to just six steps to enable open data champions to repeatedly map the current and future demand for open data within their country or city. [Previous work](#) examining the global impacts of open data at the GovLab and a six-month, hands-on project with the Inter-American Development Bank informed this methodology.

This latter project was a collaboration with the Viceministerio de la Presidencia of Costa Rica to fine-tune and experiment with the emerging methodology. In what follows, we include some examples of the exercise in a manner that doesn't disclose sensitive or operational details. The methodology was subsequently updated to reflect the lessons learned and, as such, the examples may not always fully match the enhanced templates we present later in the document.



# Six Steps to Assess and Segment Open Data Demand



## Matching Demand

The final step involves translating these assessments and segmentations into clear strategies.



## Taking stock

The first step involves developing a rapid baseline of current state of affairs.



## Prioritization of the Problem

For open data efforts to make direct impact, they have to be problem-led and focused on important needs and questions within society, not just datasets.



## Assessing Readiness

This step aims to determine which of the actors, are the most ready to engage around open government data.



## Segmenting Stakeholders

Mapping the universe of actors who have a clear interest in answering the questions identified using open data allows data holders to segment and target demand around problems and questions.



## Formulating Questions

Once priorities have been reviewed and the options narrowed down, step three focuses on defining, deepening and contextualizing the questions that are associated with the agreed upon problem area.

STEP 1

## Taking stock

.....





**The first step is taking stock and developing a baseline of the supply, use and impact of open data in a particular country or city. Using this information, officials should also specify their expectations and goals moving forward.**

.....

### **Why It's Important**

A baseline can help identify priorities and establish indicators to measure improvements over time. It is essential to project or product management.



## Considerations and Template

Issues to consider when develop a baseline prior to assessing the demand of open data include:

TOPIC	METRICS	GOALS
Scope and scale of the supply of open data	How, and how many, data sets are available? How well do they perform against objectives?	What goal do practitioners hope to achieve by opening data sets? When do they want to achieve their goal?
Demand and Use of Open Data	What is known about the demand or use of data made open? Are instructive examples available? What are common data requests on government feedback platform? What is the current state of “freedom of information” requests?	Any goals with regard to reaching users?
Impact of Open Data vis-a-vis Priorities	What is known about the impact of open data to: <ul style="list-style-type: none"><li>- Improving Governance</li><li>- Empowering individuals</li><li>- Creating economic opportunity</li><li>- Solving Public Problems?</li></ul>	What specific societal priorities should be targeted?



## Other Resources

The GovLab’s Periodic Table of Open Data provides a template to develop a more detailed baseline by documenting the enabling conditions and disabling factors that often determine the impact of open data initiatives. The 27 elements in the Periodic Table are organized within five central issue categories—Problem and Demand Definition, Capacity and Culture, Partnerships, Risks, Governance—that are likely to either enable or disrupt the success of open data projects when replicated across countries. Learn more at [odimpact.org](http://odimpact.org)

### Examples: The Open Data Ecosystem in Costa Rica

This broad mapping of the Costa Rican open data ecosystem provides a snapshot of the country’s open data ecosystem. This type of high-level assessment can inform how officials consider opportunities, challenges, and priority areas when assessing and segmenting the demand for open data.

*The example does not fully reflect the above approach as it was based upon a previous iteration of the template. Still, it illustrates the type of insights that can help develop a baseline.*

TOPIC	METRICS
Supply of Open Data	<p>Most of Costa Rica’s data for 2016 was available through the National Institute of Census and Statistics (<a href="#">INEC</a>), and the new open data website (<a href="#">Datos Abiertos Costa Rica</a>) provides links to agency datasets. However, the progress of open data development in Costa Rica is stagnant. The country still ranks poorly according to multiple international open data benchmarks, such as:</p> <ul style="list-style-type: none"><li>• The Global <a href="#">Open Data Index</a>, which rates Costa Rica 23% open, 64th internationally, with 0% of their data “fully” open, defined as “open data and content [that] can be freely used, modified and shared by anyone for any purpose”.</li></ul>



- The Open Data Barometer, which gave Costa Rica a score of 20 out of 100 or 71st internationally. Research conducted for the Open Data Barometer for the years 2015-2016 found that in terms of “readiness” to successfully secure positive outcomes from open data, government policies were 33% ready while government action showed 20% readiness. Citizens and civil rights were 41% ready while private businesses were 15% ready.

Open Data Watch, which scored Costa Rica 52 out of 100

- for 2017 and ranked it last of 8 Central American countries. In the categories of social, economic, and environment data, Costa Rica’s openness and coverage score is highest in the environment category with a score of 25 out of 100.

---

#### Demand and Use of Open Data

Some exemplary uses from open data in Costa Rica include:

- Civil Society Organizations:
  - Asociación Centro Ciudadano de Estudios para una Sociedad Abierta (ACCESA)’s Por mi Barrio, a community engagement and citizen-reporting platform.
  - Organización Abriendo Datos Costa Rica’s Atisbando el bus, a prototype transport application bringing built based on evidence and community feedback on current challenges in the transportation system. Asociación Centro Ciudadano de Estudios para una Sociedad Abierta (ACCESA)’s Por mi Barrio, a community engagement and citizen-reporting platform.
- Media and journalists:
  - The newspaper La Nación’s La Nación Data, a news site that provides election data for the public.
- Government:
  - Autoridad Reguladora de los Servicios Públicos (ARESEP) runs Estaciones CR, which allows fuel users to check if a service station has reported faults in ARESEP quality controls. Autoridad Reguladora de los Servicios Públicos
  - (ARESEP) maintains Transporte CR, an app to consult the rates of public transport, bus, and train modality. Users can also report anomalies in the collection of the authorized rate in these services.



- Curridabat municipality government maintains the open data platform Municipalidad de Curridabat.
- The Global Biodiversity Information Facility (GBIF) is “an international network and research infrastructure funded by the world’s governments and aimed at providing anyone, anywhere, open access to data about all types of life on Earth.” Costa Rica has one the richest biodiversity in the world, containing nearly 6% of the world’s biodiversity despite only accounting for 0.03% of the earth’s surface. That biodiversity makes the GBIF an important data source for Costa Rica’s environmental policies and initiatives.

Impact of  
Open Data  
vis-a-vis  
Priorities

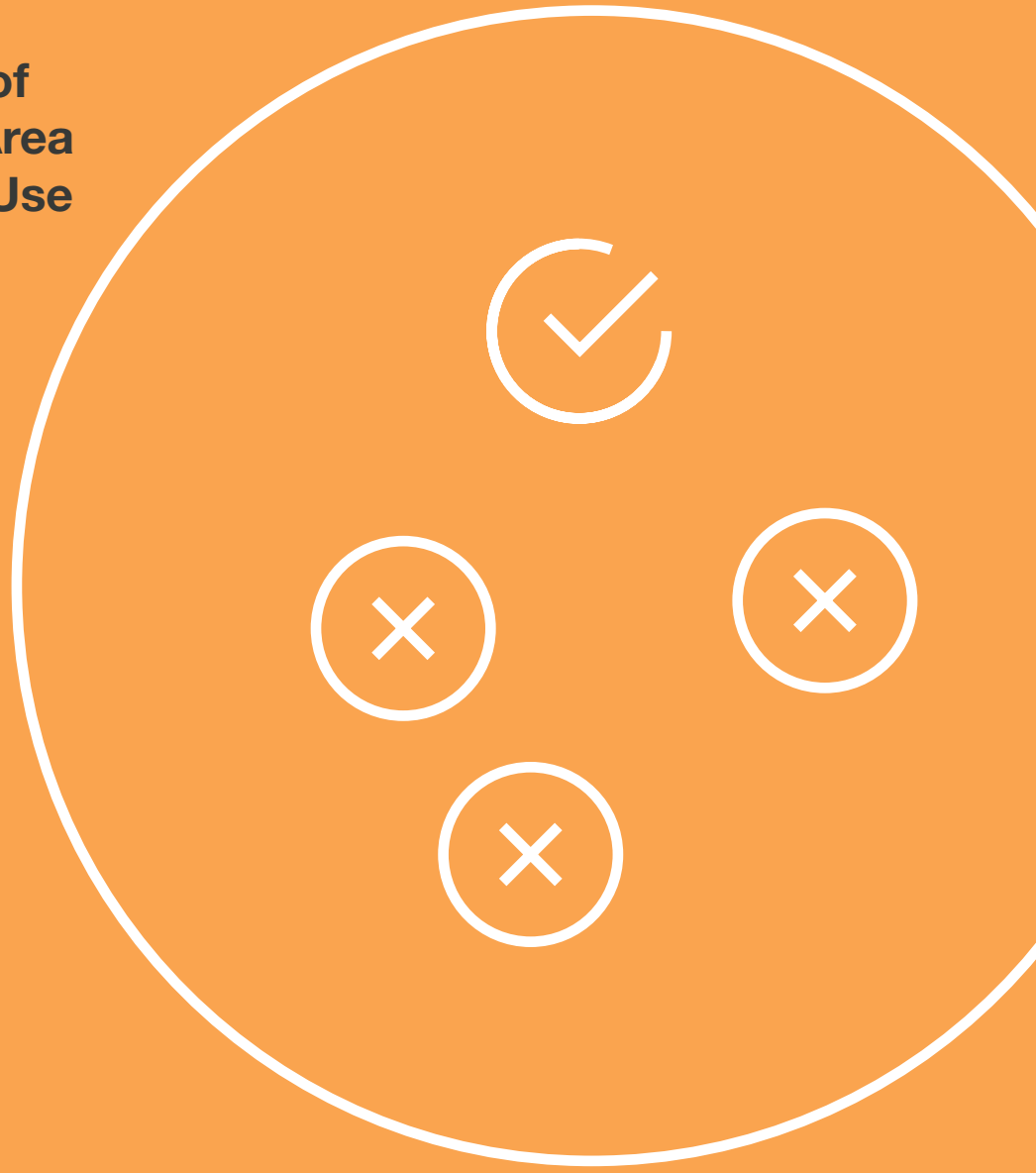
The OECD public governance review identifies the following as Costa Rica’s policy priorities:

- Human Rights and Democracy;
- Economic Growth;
- Social Development and Living Conditions; and
- Education, Environment Protection, and Health.

STEP 2

**Prioritization of  
the Problem Area  
and Possible Use  
of Open Data**

.....







**The second step focuses on how to align open data demand with specific priorities, needs, and questions within a society - not just finding potential users of existing datasets. It also involves identifying and prioritizing how open data could address selected problem areas.**

.....

### **Why It's Important**

As with most public goods, the demand for open data may be infinite yet the supply of resources is constrained. To ensure the greatest social return on investment with the resources available, it is important to have a sense of what societal problems are considered priority areas; and what possible uses of open data to address that problem area could be most effective.



Rather than focusing on releasing datasets, government data holders should consider what types of questions could be answered through an open data-driven effort and, subsequently, what constituencies would benefit from having those questions answered.

## Considerations

Step 2 involves prioritizing specific problems, questions, and needs in society, such as climate change, economic inequality, housing or human mobility. Ideally, such a prioritization of the problem space should be:

- Developed in a participatory manner; and
- Reflect political realities, practical constraints, and a sense of urgency.

Yet, officials should not just prioritize a problem area but also to describe (and prioritize) the ways open data could be used to address that societal priority.

Previous research documents how open data can address societal challenges and create public value by:

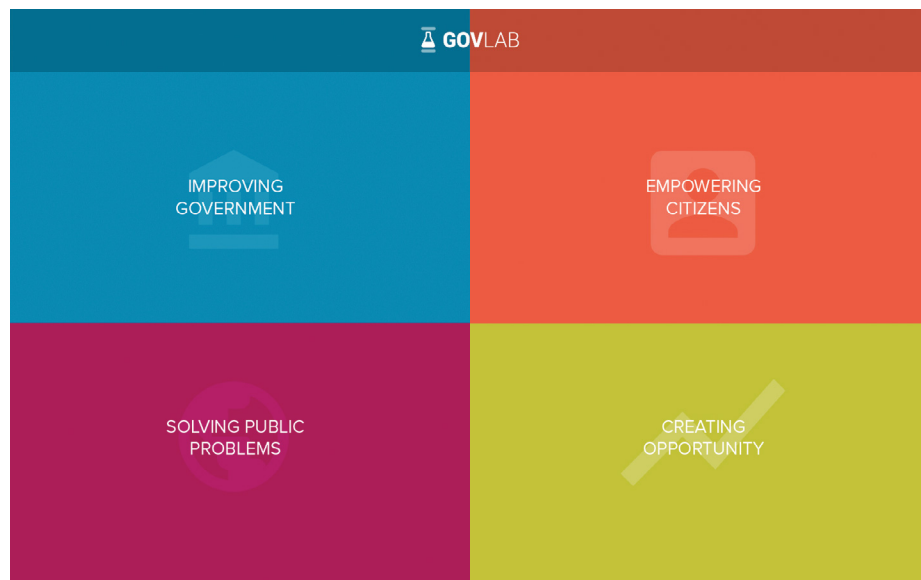
- Improving Government
  - Increasing institutional transparency and accountability of government agencies and officials; and
  - Enhancing policy development and public service delivery.
- Empowering Citizens
  - Providing for more informed decision making among citizens; and
  - New forms of social mobilization.



- Creating Economic Opportunity
  - Fostering innovation; and
  - Promoting economic growth.
- Solving Public Problems
  - Providing more data-driven assessments and situational analysis; and
  - Enabling more data-driven engagement.

## Open Data's Impact

Open Data is changing the world in four ways.



 [Learn more at odimpact.org](http://odimpact.org)



## Template

### Problem priority:

#### Open Data Value Propositions

#### How the use of Open Data can address the Problem Area

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##### IMPROVING GOVERNANCE

- Does open data increase institutional transparency and accountability?
- Does it enhance policy development and service delivery?

---

##### EMPOWERING CITIZENS

- Does open data inform decision-making?
- Can open data support new forms of social mobilization?

---

##### CREATING ECONOMIC OPPORTUNITY

- Does it foster Innovation?
- Does open data promote economic growth?

---

##### SOLVING PUBLIC PROBLEMS

- Can open data enable better data-driven assessments and situational analyses?
- Does it enable more data-driven engagement?

## Example: Prioritization of Problems Related to the Housing Crisis in U.S. Cities

To demonstrate how this process works, the below sample table describes how open data could address a problem like fair and affordable housing in US cities.

### Problem priority: Housing Crisis in US Cities

#### Open Data Value Propositions

#### How the use of Open Data can address the Problem Area

---

##### IMPROVING GOVERNANCE

- Data-Driven Enforcement
  - Improved handling of delinquent landlords, illegal conversions, et al
  - Demand for repairs



- Improved allocation and access of housing
  - Shelter placement
  - Affordable housing state of play

---

#### EMPOWERING CITIZENS

- Improved Navigation of the Housing Market
  - Rating landlords
  - Real estate availability and options
  - Cost of living/property taxes/quality of life
  - Apartment rental information

---

#### CREATING ECONOMIC OPPORTUNITY

- Market Trends Analyses
- Data for Capital Improvements

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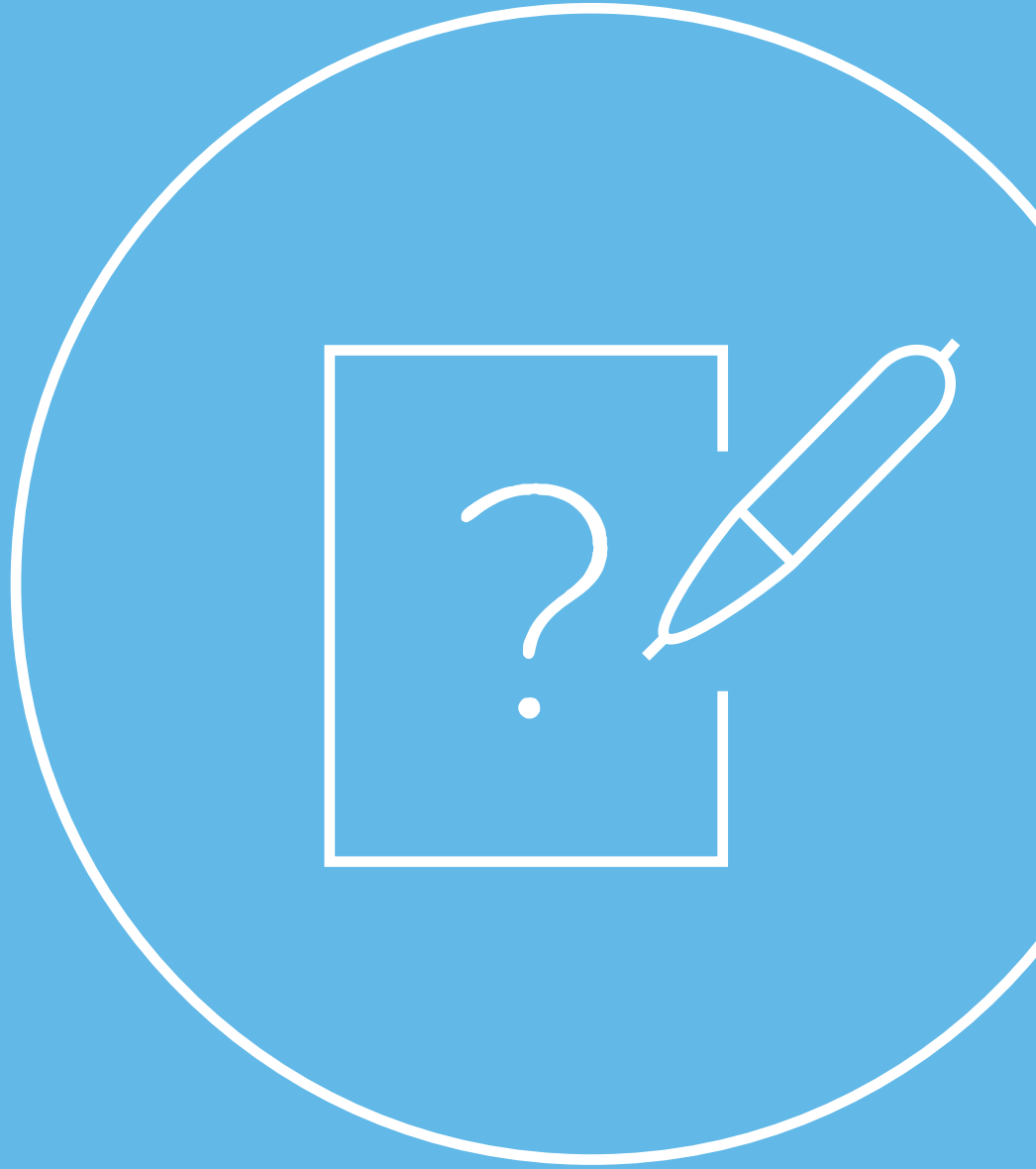
#### SOLVING PUBLIC PROBLEMS

- Increased Awareness of Safety Conditions
  - Code compliance (e.g., gas lines)
  - Crime/violence mapping
- Data-Driven Resiliency
  - Environmental impact reporting
  - Coastal flooding resilience

STEP 3

## Formulating Questions

.....





**Once officials review their priorities and narrow their options down, step three calls them to define, deepen and contextualize the key questions driving the problem area.**

.....

### **Why It's Important**

Open data is a societal asset but is only valuable if used constructively and appropriately to answer the questions that matter to those with the ability to create public value using data. By spending considerable time and effort formulating key questions, officials can better address those needs.



## Considerations

At this stage, officials might find it important to assess the supply of data that is currently open or could be made accessible as it relates to newly identified questions to ensure that relevant data is or could be made open.

## Template

Open Data Value Propositions	Questions
IMPROVING GOVERNANCE	<i>Increasing Institutional Transparency and Accountability Enhancing Policy Development and Service Delivery</i>
EMPOWERING CITIZENS	<i>More Informed Decision Making New Forms of Social Mobilization</i>
CREATING ECONOMIC OPPORTUNITY	<i>Fostering Innovation Promoting Economic Growth</i>
SOLVING PUBLIC PROBLEMS	<i>More Data Driven Assessments and Situational Analysis Enabling More Data-Driven Engagement</i>

## Example: Costa Rica Climate Change and Environmental Degradation Key Questions

This table articulates several key questions formulated through research and multi-stakeholder outreach and interviews in Costa Rica. It provides an example of the types of questions matter most in addressing climate change and environmental degradation.

Open Data Value Propositions	Climate Change and Environmental Degradation Questions
IMPROVING GOVERNANCE	<i>Increasing Institutional Transparency and Accountability</i> <ul style="list-style-type: none"><li>• How can civil society and other non-governmental actors promote institutional transparency and accountability on:<ul style="list-style-type: none"><li>– Tracking <u>illegal logging</u> and <u>fishing practices</u>, and increasing accountability of enforcement actions?</li></ul></li></ul>





- Visibility into the functioning, budgets, and contracting of relevant environmental ministries?  
Oversight and scrutiny of government's
- compliance with commitments on carbon neutrality?

- Can stakeholders from different sectors collaboratively develop indicators of success and progress against environmental goals, institutional objectives, and government commitments (e.g., the Sustainable Development Goals)?

#### *Enhancing Policy Development and Service Delivery*

- How can data fill gaps in environmental policy-making as it relates to:
  - Carbon emission rates?
  - Rate of forestation/deforestation?
  - Regional Biodiversity?
  - Positive and negative impacts of ecotourism?
  - Water management?
- How can subnational environmental services (e.g., at the county level), such as water management, be improved in an evidence-based manner?
- How environmental data collection infrastructure at the subnational government level be established or improved?
- How can urban planning decision-making, particularly in San José, be made more sustainable and forward-thinking?

---

## EMPOWERING CITIZENS

#### *More Informed Decision-Making*

- How can grassroots organizations move toward more sustainable practices, such as increasing community cycling and reducing reliance on motor vehicles?
- How can citizens be prepared for potential climate-related weather crises?

#### *New Forms of Social Mobilization*

- How can citizen engagement and advocacy be fostered and channeled effectively in areas such as:
  - Illegal logging, overfishing, and irresponsible farming?



- population distribution and use of protected areas?
  - “Responsible farming” techniques and other eco-initiatives driven by communities?
  - Conservation resources and capacity for supporting volunteerism?
- How can citizens play a greater role in monitoring the success or failure of green businesses in reducing carbon emissions?

---

### CREATING ECONOMIC OPPORTUNITY

#### *Fostering Innovation*

- How can sustainable farming practices, whether they pertain to land, water, or other natural resource use, be supported and made more effective?
- How can data empower upstream landowners interested in experimenting with sustainable, precision farming?
- How can smallholder farms navigate shifts in precipitation and temperature levels?
- What strategies could most effectively foster economic development in the renewable energy sector?

#### *Promoting Economic Growth*

- How can ecotourism infrastructure be bolstered while minimizing harmful land use effects?
- How can rural community tourism and its positive economic impacts be supported and expanded?
- Can new jobs be created using evidence-based “sustainable” fishing and logging practices?

---

### SOLVING PUBLIC PROBLEMS

#### *More Data Driven Assessments and Situational Analysis*

- How can greenhouse gas emissions be reduced in important agricultural industries, such as coffee?
- How can Costa Rica continue its evolution as a green energy standard-bearer?



- What is the optimal approach for providing environmental evidence for researchers, advocates, and local residents?
- How can stakeholders more effectively assess the impacts of current environmental issues—such as the impacts of water security, irresponsible farming, and deforestation—on the exacerbation of upstream water pollution?
- How can practitioners more effectively evaluate the impacts of new environmental experiments and pilot projects, such as sanitizing water from flood rains and reintroducing it to needy waterways and drinking supplies?
- How can targeted efforts be crafted to avoid negative impacts of sea level rise on drinking water supply?
- How can environmentalists track the adaptation of wetlands and other ecological areas resulting from changes in climate?

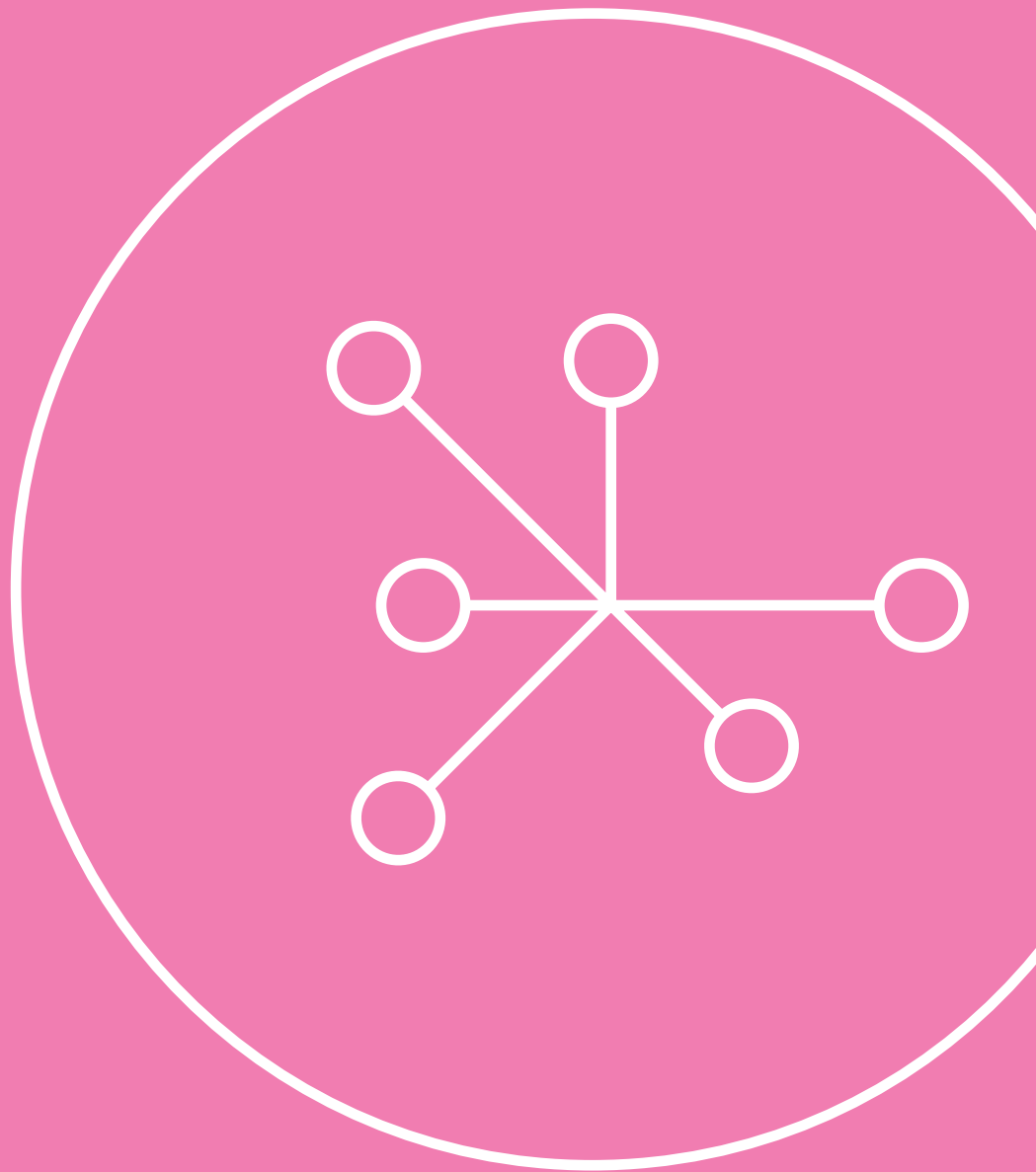
#### *Enabling More Data-Driven Engagement*

- How can targeted advocacy and conservation initiatives be developed related to:
  - Wildlife population, behavior, movement and habitat quality?
  - Air quality?
  - Greenhouse gas emissions?
  - Poaching prevention?
  - River/ocean surveillance to combat illegal fishing and marine waste?
- How can disaggregated environmental information be collectively assessed and analyzed to inform civil society interventions, targeted partnerships, and problem-solving efforts related to:
  - Soil erosion prevention?
  - Regions with value in terms of biodiversity, tourism, and country history (e.g., Monteverde cloud forest)?
- How can preparation and resiliency efforts for potential, climate change-related natural disasters achieve better outcomes?

STEP 4

## Segmenting Stakeholders

.....





## Mapping and targeting actors who have a clear interest in the questions prioritized.

.....

### Why It's Important

Taking a more question and problem-driven approach to stakeholder segmentation helps officials to avoid open data release and engagement efforts targeted exclusively at the “usual suspects” already benefiting from open data. While those voices are important, determining who has a mission to address the prioritized problems and questions can help broaden the scope and scale of potential open data users.



## Considerations

Actors can be segmented according to their relation to the policy questions and subsequent answers to them. Some organizations have a clear responsibility or stated mission to address the problem. Other actors can act upon the answers or might directly benefit from solving the problem.

## Template

Guiding questions that could help officials complete the mapping exercise include:

- What government bodies or intermediaries are responsible for addressing the problem or providing services? What are their priorities and needs?
- What private actors (including civil society, academia, community groups and industry) and advocacy groups are focused on the problem area? Who represents their constituencies and main funders?  
Who makes up the affected user base?
- What experts, including think tanks and academics, are working in the space?

Open Data Value Propositions	Key Actors
------------------------------	------------

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<b>IMPROVING GOVERNANCE</b>	Government Private Sector (including civil society, academia, community groups, and industry) Other
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<b>EMPOWERING CITIZENS</b>	Government Private Sector Other
----------------------------	---------------------------------------



CREATING  
ECONOMIC  
OPPORTUNITY

Government  
Private Sector  
Other

SOLVING PUBLIC  
PROBLEMS

Government  
Private Sector  
Other

## Example: Costa Rica Climate Change and Environmental Degradation Constituency Mapping

This table, showing important stakeholders in Costa Rica interested in addressing climate change and environmental degradation, shows how officials can segment actors. This constituency mapping considers actors in the public and civil sectors that could improve governance, empower citizens, create opportunity, and solve public problems through the more effective use of open climate data.

Open Data Value  
Propositions

Climate Change and Environmental  
Degradation Questions

IMPROVING  
GOVERNANCE

Government

- Ministry of Environment, Energy and Telecommunications (MINAET - Ministerio de Ambiente, Energía y Telecomunicaciones)
- National System of Conservation Areas (SINAC - Sistema Nacional de Áreas de Conservación)

Private Sector (including civil society, academia, community groups, and industry)

- INBio: National Biodiversity Institute of Costa Rica
- CATIE
- Organization for Tropical Studies
- NAMA Cafe
- CRUSA (Costa Rica - USA) Foundation
- Inter-American Development Bank



---

## EMPOWERING CITIZENS

### Government

- Ministry of Environment, Energy and Telecommunications (MINAET - Ministerio de Ambiente, Energía y Telecomunicaciones)
- Ministry of Health (MinSalud)
- Ministry of Public Works and Transport

### Private Sector

- BiciBus
- Fundacion Neotropica
- Association of Volunteers for Service in Protected Areas (ASVO)
- Corcovado Foundation
- Comunidades Ecologistas la Ceiba (Friends of the Earth Costa Rica)
- Earth Charter Initiative
- Costa Rican Organic Agriculture Movement (MAOCO)
- GIZ Office: Costa Rica
- Nosara Civic Association
- Costa Rica Bird Observatories

---

## CREATING ECONOMIC OPPORTUNITY

### Government

- FONAFIFO
- Ministry of Agriculture and Livestock

### Private Sector

- The Nature Conservancy's subsidiaries
  - Water Fund (Agua Tica)
  - Indigenous Eco Tourism Network
- Monteverde Conservation League
  - Children's Eternal Rainforest
- Global Open Data for Agriculture and Nutrition (GODAN)
- Asociación Comunitaria Conservacionista de Turismo Alternativo y Rural (ACTUAR) Costa Rica





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## SOLVING PUBLIC PROBLEMS

### Government

- Ministry of Environment, Energy and Telecommunications (MINAET - Ministerio de Ambiente, Energía y Telecomunicaciones)
  - National System of Conservation Areas (SINAC)
- Ministry of Health (MinSalud)

### Private Sector

- NAMA Cafe
- Osa Conservation
- INBio
- Foundation Keto
- Conservation International
- The Nature Conservancy
- CPSU

STEP 5

**Segmenting  
Assessing  
Readiness  
and Impact**

.....





**At this step, officials should assess demand in terms of “readiness” and impact. In other words, they should ask which of the actors, segmented above, would most effectively use the datasets if the data was made open.**

**This assessment can be achieved by adding the actors to a matrix according to their:**

- Capacity to analyze data; and
- Potential to impact the prioritized problem area.

.....

### **Why It's Important**

An assessment of “readiness” can help identify both gaps and opportunities, informing:

- Who to engage with first to gain rapid result and impact;
- How to align existing resources with gaps in capacity; and
- What roles that each actor can play in leveraging open data to address key questions that if answered could help address priority problem areas.



## Considerations

Assessing from a distance an organization's technical capacity and potential to impact a situation over the short term can be challenging. While the readiness assessment will need to be driven somewhat by proxy analysis and desk research, the following questions can help provide some insight into an organization's readiness:

- Are resources limited, such as overall staffing or data capacity?
- Does the entity exhibit a clear focus on addressing the problem under consideration in the targeted region?
- Are human capital and other resources available to act on insights generated through the data?

## Template

	Long-Term Potential Impact	Short-Term Potential Impact
HIGH DATA CAPACITY		
LIMITED DATA CAPACITY		

### Example: Costa Rica Climate Change and Environmental Degradation Readiness Matrix

The following matrix shows how previously identified actors can be assessed within the context of addressing climate change challenges using open data.



## Long-Term Potential Impact

## Short-Term Potential Impact

### High Data Capacity

- GODAN – This global network has the potential to create a large global impact for agriculture. Despite its high data capacity, however, its international remit renders it somewhat less likely to create immediate on-the-ground impacts in Costa Rica compared to other actors doing dedicated work in the country.

- NAMA Cafe – A coffee farming practice involving minimum carbon emission that is based on the Nationally Appropriate Mitigation Actions (NAMA), which is a recommendation of COP 2007.
- Fundacion Neotropica – One of the oldest environmental organization in Costa Rica, which contributes to sustainable development by conducting and disseminating research to promote science-based efforts to protect the environment.
- Centro Para la Sostenibilidad Urbana (CPSU) - An organization that works to create more inclusive and sustainable cities through research, action, advocacy, and capacity building.

### Limited Data Capacity

- CATIE – A global organization with a broad mission—contributing to the “sustainable growth of communities” — CATIE’s capacity and potential for impact is more globally distributed because of its relatively small footprint in Costa Rica.

- BiciBus – Working to make San José a more bike-friendly and low-emission city but with a small team that would benefit from additional data science capacity.
- CRUSA (Costa Rica - USA) Foundation – Building on Costa Rica’s previous relationship with the US Agency for International Development, CRUSA is a philanthropic organization that can create significant impact by giving grants in priority areas like water resource management and energy efficiency, even though it does not directly use data to address these issues in the same way as other identified actors.

STEP 6

## Matching Demand

.....





## The final step is finding ways to address the identified demand. Officials can address demand by translating their assessments and segmentations into clear strategies for:

- Improving the supply of open data to match demand;
- Targeting and engaging actors representing the demand side;
- Collaboratively leveraging open data to answer the most important questions relevant to the problem at hand; and
- Creating new public value and positively impacting the identified societal problem.

.....

### Why It's Important

Assessing and segmenting the demand for open data as it relates to particular problems and questions can enable the design of more targeted and effective engagements with relevant actors. Rather than open calls for input (which also have value) or hackathons with the “usual suspects,” this methodology helps design engagements with a more diverse and potentially impactful group of current and potential open data users.



## Considerations

Engagement and approaches for matching supply and demand, co-created with actors representing the demand side, could include data collaboratives, where data and data science expertise is exchanged across sectors.<sup>1</sup> It could also include open innovation challenges, public events, or open data education programs.

## Template

The following table explains how practitioners might match demand within the context of a hypothetical project targeting affordable housing in the United States. It includes actions that project leads might take.

Step	Things to do
<b>DATA AUDIT</b>	In an effort to match supply and demand around housing crisis open data, compare existing open data sets from across agencies with the types of information needed to answer priority questions surfaced earlier in the methodology.
<b>CONSIDER THE POLITICAL ECONOMY</b>	Prior to launching an engagement with the demand for housing data, assess political considerations and sensitivities can ensure that the matching exercise is well-positioned for navigating politically fraught topics.
<b>ENGAGE AGENCIES HOLDING THE DATA</b>	Coordinate with housing policy experts at relevant agencies can ensure that the engagement's structure is consistent with the datasets available and government priorities as well as consistent with relevant efforts to address the housing crisis in the works.



<sup>1</sup> More information on Data Collaboratives can be found at <http://datacollaboratives.org/>.





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**ASSESS DATA  
QUALITY AND  
RELEVANCE**

Work closely with agency stakeholders, an upfront consideration of the quality of available datasets, and their relevance for key housing questions to ensure that engagement with the demand side is positioned for success.

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**BRING DATA  
EXPERTISE TO  
THE TABLE**

Involve data experts within agencies working to address the housing crisis as well as high-capacity data users from the local 'civic hacking' community, to ensure engagement can practically address opportunities and challenges

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**DATA  
PREPARATION**

Work with identified data experts from the housing space and undertake a data preparation effort involving data cleaning, consolidation and augmentation to align the engagement with demand.

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**SHARE  
ANALYSES WITH  
STAKEHOLDERS**

During the outreach stage, share the products of the data audit and quality assessment with stakeholders to sync expectations and enable pre-event ideation.

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**ORGANIZE  
ENGAGEMENT(S)  
BRINGING  
TOGETHER SUPPLY  
AND DEMAND**

Armed with the insights gained throughout the implementation of the methodology, design and facilitate a workshop with government representatives working to address the housing crisis as well as open data champions and identified demand-side actors in a knowledge-sharing and brainstorming process to better align supply and demand and develop new approaches for the housing crisis.

# APPENDIX 1:

## Open Data Demand Assessment Templates

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## STEP 1: Taking stock

TOPIC	METRICS	GOALS
..... Scope and scale of the supply of Open Data		
..... Demand and Use of Open Data		
..... Impact of Open Data vis-a-vis Priorities		

## STEP 2: Taking stock

Problem priority: OPEN DATA VALUE PROPOSITIONS	HOW THE USE OF OPEN DATA CAN ADDRESS THE PROBLEM AREA
Improving Governance (Increasing Institutional Transparency and Accountability; Enhancing Policy Development and Service Delivery)	
Empowering Citizens (More Informed Decision Making; New Forms of Social Mobilization)	
Creating Economic Opportunity (Fostering Innovation; Promoting Economic Growth)	
Solving Public Problems (More Data Driven Assessments and Situational Analysis; Enabling More Data-Driven Engagement)	

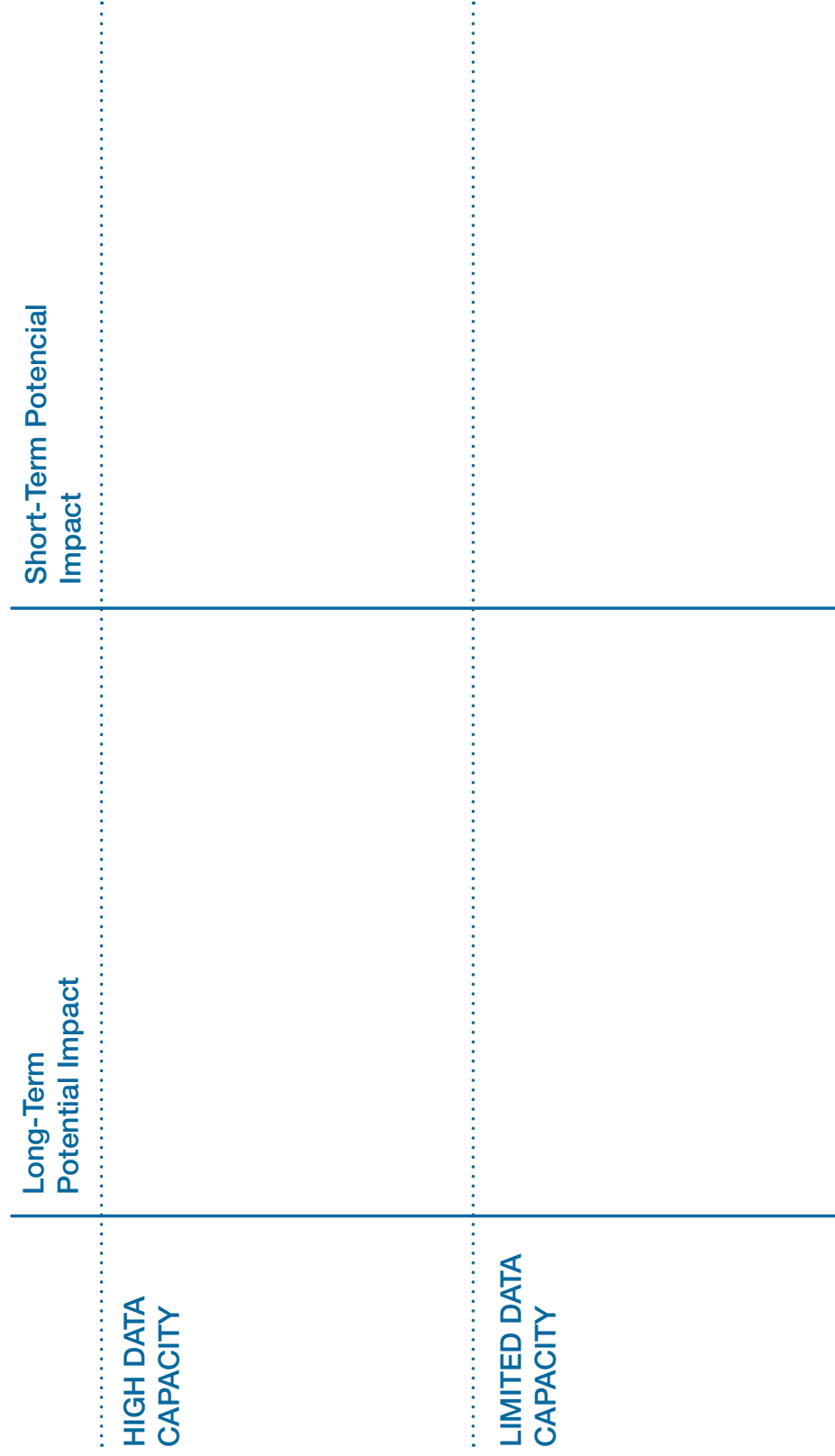
# STEP 3: Formulating Questions

Open Data Value Propositions	Questions
<b>IMPROVING GOVERNANCE</b>	<i>Increasing Institutional Transparency and Accountability</i> <i>Enhancing Policy Development and Service Delivery</i>
<b>EMPOWERING CITIZENS</b>	<i>More Informed Decision Making</i> <i>New Forms of Social Mobilization</i>
<b>CREATING ECONOMIC OPPORTUNITY</b>	<i>Fostering Innovation</i> <i>Promoting Economic Growth</i>
<b>SOLVING PUBLIC PROBLEMS</b>	<i>More Data Driven Assessments and Situational Analysis</i> <i>Enabling More Data-Driven Engagement</i>

## STEP 4: Segmenting Stakeholders

Open Data Value Propositions	Key Actors
<b>IMPROVING GOVERNANCE</b>	Government Private Sector (including civil society, academia, community groups, and industry) Other
<b>EMPOWERING CITIZENS</b>	Government Private Sector Other
<b>CREATING ECONOMIC OPPORTUNITY</b>	Government Private Sector Other
<b>SOLVING PUBLIC PROBLEMS</b>	Government Private Sector Other

# STEP 5: Assessing Readiness and Impact



## STEP 6: Matching Demand

Steps	Strategy and Lessons Learned
1. DATA AUDIT	
2. CONSIDER THE POLITICAL ECONOMY	
3. ENGAGE AGENCIES HOLDING THE DATA	
4. ASSESS DATA QUALITY AND RELEVANCE	
5. BRING DATA EXPERTISE TO THE TABLE	
6. DATA PREPARATION	
7. SHARE ANALYSES WITH STAKEHOLDERS	
8. ORGANIZE ENGAGEMENT(S) BRINGING TOGETHER SUPPLY AND DEMAND	



# APPENDIX 2:

## Open Data Periodic Table of Open Data Elements

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Based on existing literature and case studies, The GovLab developed a Periodic Table of Open Data Elements detailing the enabling conditions and disabling factors that often determine the impact of open data initiatives. Although the importance of local variation and context is, of course, paramount, current research and practice shows that the elements included in five central issue categories — Problem and Demand Definition, Capacity and Culture, Partnerships, Risks, Governance — are likely to either enable or disrupt the success of open data projects when replicated across countries.

The Table can also be used as a checklist to either establish a baseline of current state of open data or assess readiness.

More information at <http://odimpact.org/periodic-table.html>

Problem and Demand Definition	Capacity and Culture		Governance		Partnerships	Risks	
<b>U</b> User Research						<b>Pr</b> Privacy Concerns	
<b>C</b> Causes and Context	<b>Di</b> Data Infrastructure			<b>Od</b> Open by Default	<b>Dh</b> Data Holders	<b>Ds</b> Data Security	
<b>Rf</b> Refinement	<b>Pu</b> Public Infrastructure	<b>Se</b> Skills & Expertise			<b>Fi</b> Freedom of Information	<b>I</b> Intermediaries	<b>Dm</b> Poor decision-making due to faulty information
<b>Bg</b> Benefit and Goals	<b>Lp</b> Tech Literacy & Internet Penetration	<b>Fl</b> Feedback Loops	<b>M</b> Performance Metrics	<b>Dq</b> Data Quality	<b>De</b> Domain Experts	<b>Pa</b> Entrenching power asymmetries	
<b>Da</b> Data Audit and Inventory	<b>Rb</b> Cultural/ Institutional Roadblocks	<b>Rs</b> Resource Availability & Sustainability	<b>Rm</b> Risk Mitigation	<b>R</b> Responsiveness	<b>Co</b> Collaborators	<b>Ow</b> Open washing	





DATA+ Demand

