



Deliverable D1.1

Initial Stakeholder Analysis of the Demonstration Cases



Deliverable Title	Initial Stakeholder Analysis of the Demonstration Cases
Status	Final
Related Work Package	WP1 Social dimensions: co-designing Citizen Observatories
Deliverable lead	UNESCO-IHE
Author(s)	Ellen Pfeiffer, Uta Wehn, Mohammad Gharesifard, Abeer Al Momani
Internal reviewer(s)	Somya Joshi, Mwape Sichilongo, Stijn Vranckx, Nina Costa
Contact for queries	Meike Remmers, UNESCO-IHE, m.remmers@unesco-ihe.org
Dissemination level	Public
Due submission date	31.12.2016 (M4)
Actual submission	31.12.2016
Project acronym	Ground Truth 2.0
Grant agreement number	689744
Funding scheme	H2020-SC5-2015-two-stage/Topic SC5-17-2015/Innovation Actions
Abstract of Deliverable	This document summarizes the analytical framework for context and stakeholder analysis in the GT2.0 project; presents the findings of the baseline context and stakeholder mapping per case; and provides implications for the subsequent GT2.0 Tasks and Work Packages.

Versions and Contribution History

Version	Date	Modified by	Modification details
v.01	18.12.2016	Ellen Pfeiffer	Initial Draft
v.02	30.12.2016	Ellen Pfeiffer	Revision, Final Version

Table of contents

- Versions and Contribution Historyi
- 1 Introduction.....1
 - 1.1 Background and Purpose of this Document.....1
 - 1.2 Challenges and Requirements for the GT2.0 Stakeholder Analysis2
- 2 Approach and Methodology.....4
 - 2.1 Overview Stakeholder Analysis4
 - 2.2 GT2.0 Stakeholder Framework.....5
 - 2.2.1 CO Core Stakeholders 6
 - 2.2.2 Enabling Environment 7
 - 2.2.3 Market Forces 10
 - 2.2.4 Internal stakeholders 12
 - 2.3 Baseline Context Analysis.....13
 - 2.4 Data Collection and Analysis14
- 3 Analysis Demo Cases16
 - 3.1 Environmental Quality of Life – Flanders, Belgium16
 - 3.1.1 Context Mapping 16
 - 3.1.2 Stakeholder Inventory 21
 - 3.1.3 Key Observations 32
 - 3.2 Preparing for Climate Change – Catalonia, Spain.....33
 - 3.2.1 Context Mapping 33
 - 3.2.2 Stakeholder Inventory 38
 - 3.2.3 Key observations 52
 - 3.3 Water availability in Climate-Proof Planning – Rivierenland, Netherlands53
 - 3.3.1 Context Mapping 53
 - 3.3.2 Stakeholder Inventory 58
 - 3.3.3 Key observations 66
 - 3.4 Water quality management in Stockholm and Flen/Sweden67
 - 3.4.1 Context Mapping 67
 - 3.4.2 Stakeholder Inventory 71
 - 3.4.3 Key observations 84
 - 3.5 Biodiversity conservation in the Mara triangle, Kenya85
 - 3.5.1 Context Mapping 85
 - 3.5.2 Stakeholder Inventory 89
 - 3.5.3 Key observations 100
 - 3.6 Community-based natural resource management in the Silwana-Complex, Zambia101
 - 3.6.1 Context Mapping 101
 - 3.6.2 Stakeholder Inventory 105
 - 3.6.3 Key observations 114
- 4 Comparative notes and outlook for the updated stakeholder analysis.....115
 - 4.1 Cross-cutting observations.....115

4.2	Outlook next steps	115
5	Bibliography and References.....	117
6	Annexes	120
6.1	Protocol Pre-Screening.....	120
6.2	Protocol Context Mapping	121
6.3	Stakeholder Mapping - Process and Stakeholder Mapping	123
6.4	Protocol Stakeholder Validation	125
6.5	GT 2.0 Stakeholder “Search Profile”	127

List of figures

Fig 1	Core configuration of GT2.0 Citizen Observatories	1
Fig 2	Selected stakeholder-related information needs of GT2.0 Work Package 1 tasks	2
Fig 3	GT 2.0 Main Stakeholder Categories	5
Fig 4	Stakeholder “Sunburst” of the Belgian Demo Case	14
Fig 5	Target Area of the Belgian Demo Case	16
Fig 6	Structure of the Flemish Water Governance Institutions.....	17
Fig 7	Baseline Indicators Transparency and Participation in Regulation, Belgium	17
Fig 8	Belgian home ownership (in % of population)	18
Fig 9	Internal survey results: What topics prioritize Flemish citizen with regard to EQL	19
Fig 10	ITU Access and Usage Indicators 2016, Belgium	20
Fig 11	Regional Well-Being Indicators, Belgium.....	20
Fig 12	Target Area of the Spanish Demo Case	33
Fig 13	Population Density in Catalonia and Boundaries of the Barcelona Metropolitan Area (AMB).....	33
Fig 14	Structure of the Catalanian regional government.....	34
Fig 15	Catalonian Climate Change Response framework.....	35
Fig 16	Visualization of protected areas, agricultural value areas and connectivity areas in a 2006 Spanish spatial plan	35
Fig 17	Baseline Indicators Transparency and Participation in Regulation, Spain.....	36
Fig 18	ITU Access and Usage Indicators 2016, Spain.....	37
Fig 19	Regional Well-Being Indicators Catalonia	37
Fig 20	Target Area of the Dutch Demo Case	53
Fig 21	Dutch Provinces and Water Boards	54
Fig 22	Institutional layers and mutual dependencies of Water Management in the Netherlands	54
Fig 23	Baseline Indicators Transparency and Participation in Regulation, The Netherlands.....	55
Fig 24	ITU Access and Usage Indicators 2016, Netherlands.....	56
Fig 25	Target Area of the Swedish Demo Case.....	67
Fig 26	Baseline Indicators Transparency and Participation in Regulation, Sweden.....	68
Fig 27	ITU Access and Usage Indicators 2016, Sweden.....	69
Fig 28	Regional Well-being indicators Sweden	70
Fig 29	Regional specialization in knowledge-intensive services	70

Fig 30 Target Area of the Kenyan Demo Case	85
Fig 31 Boundaries of Narok County.....	85
Fig 32 Implementation of NBSAPs in Africa	86
Fig 33 Outline of the Mara Catchment.....	86
Fig 34 Traditional Masai tribal areas	87
Fig 35 Mobile network coverage in the project area	87
Fig 36 ITU Access and Usage Indicators 2016, Kenya.....	88
Fig 37 Touristic infrastructure in Narok County	88
Fig 38 Target Area of the Zambian Demo Case	101
Fig 39 Ecoregions Zambia	102
Fig 40 Elephant Population in the KAZA-TFCA	103
Fig 41 Climate Change Scenarios predicting a 'hot spot' in the project area.....	103
Fig 42 ITU Access and Usage Indicators 2016, Zambia.....	104
Fig 43 Main sources of livelihoods in Zambia per region	104
Fig 44 Initial set of analytical dimensions guiding the in-depth stakeholder analysis	116

List of tables

Table 1 Data Sources for the Baseline Stakeholder Mapping	15
Table 2 Demo Case Stakeholder Inventory, Belgium	21
Table 3 Demo Case Stakeholder Inventory, Spain	38
Table 4 Demo Case Stakeholder Inventory, Netherlands	58
Table 5 Demo Case Stakeholder Inventory, Sweden	71
Table 6 5 Demo Case Stakeholder Inventory, Kenya	89
Table 7 Demo Case Stakeholder Inventory, Zambia	105
Table 8 Community Members identified in the Baseline Analysis.....	125
Table 9 Generic inventory of potentially relevant Demo Case stakeholder groups and their role	127

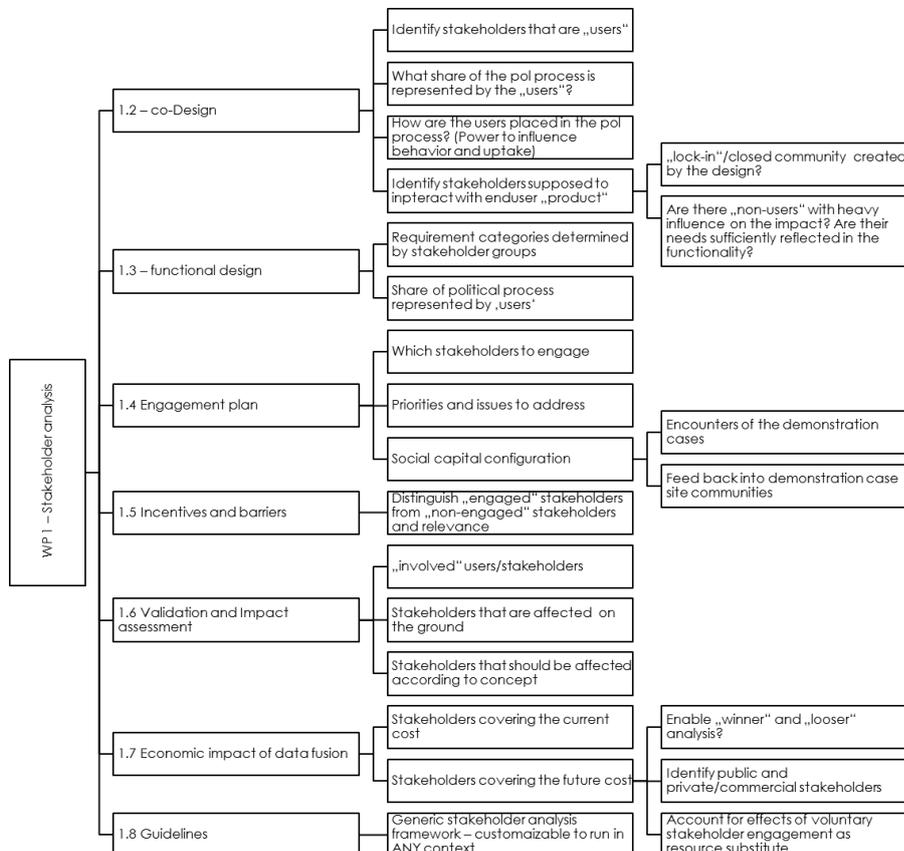
analytical findings in the six Ground Truth 2.0 Demonstration Cases. Chapter 4 documents cross-cutting observations and outlines next steps and implications to prepare the updated stakeholder analysis.

1.2 Challenges and Requirements for the GT2.0 Stakeholder Analysis

GT2.0 presents a specific methodical challenge for stakeholder analysis because of its multiple objectives. Traditional approaches to stakeholder analysis either determine which groups and people are important to involve to achieve a policy agenda on a given budget (a “political” approach), or examine groups or organizations that can help or hinder securing the commercial success of a business or project (a “business” approach). The GT2.0 project aims to both develop a platform for “extensive citizen participation” as a funded project, and to transition the resulting platforms into a stable, long-term business model after the end of the project. Therefore, the stakeholder analysis for GT2.0 has to consider several perspectives at the same time.

First, the information generated by the stakeholder analysis will be used by all work packages (WPs), but each WP and task requires different stakeholder and context information as input (see Fig 2). Accordingly, the analytical framework has to identify stakeholders relevant to public policy and social innovation (WP1, 4), groups relevant for the technical IT product development (WP2), provide room for the analytical categories of market analysis (WP3), and, not least, also deliver a stakeholder analysis for the GT2.0 project itself (WP5). Accordingly, the framework must be open for manipulation by task leaders to allow them to disaggregate, select and recombine stakeholder data in various ways.

Fig 2 Selected stakeholder-related information needs of GT2.0 Work Package 1 tasks



Secondly, the methodology will be validated in the process and transformed into generic guidelines. This means the framework has to be comprehensive enough to support meaningful stakeholder analysis for future initiatives in various geographical contexts, social settings and related to different issues.

Finally, GT2.0 follows an iterative and evolutionary methodology, learning and validating approaches based on the Demo Case experiences. Accordingly, the initial design needs to be adaptable and flexible, to give room for update and evolution of the stakeholder analysis in parallel to the GT2.0 activities. This requirement also concerns flexibility to incorporate outputs of the other work packages. Many GT2.0 tasks will produce relevant information about and with stakeholders, albeit in different formats. To avoid replication of data collection and analysis efforts, it is essential to create a framework that can draw on these insights for the updated analysis.

2 Approach and Methodology

2.1 Overview Stakeholder Analysis

The term stakeholder, and the concept of “holding a stake”, was originally used to describe investors owning a piece of a business, i.e. holding a financial stake. From a private business perspective, stakeholders are *groups without whose support the organization would cease to exist*. Over time, the definition has expanded to include parties who are involved in or are affected by a course of action of an organization, who thus hold other types of ‘stakes’ – personal, emotional or in the form of shared resources. Modern definitions usually define stakeholders as all persons or groups who “*can affect or be affected by the organization’s actions, objectives and policies.*” This modern understanding recognizes subjective view on an issue. Stakeholders are, to a degree, self-selecting: those who judge themselves to be stakeholders are stakeholders.

But cataloguing stakeholders is not an end by itself. A stakeholder analysis aims to create a decision support tool tailored to the needs of specific managers and decision-makers. Understanding the political and societal forces that might affect a project, programme or organization enables the selection and prioritization of management and communication approaches appropriate and effective for specific target audiences. Searching for actors engaged in similar activities helps avoiding duplication and repeating mistakes, or to suggest possible partnerships and alliances where possible and appropriate.

In the specific context of GT2.0, the objective is to provide the basis for co-designing and co-creating Citizen Observatories that achieve the desired social innovation impacts. COs are hybrid structures that include (1) technical features (IT platform and Smartphone applications), (2) services and social innovation (enabling and improving information for decision makers and collaborative planning processes), as well as (3) community building activities required to reach critical mass and enable commercialization. Considering the complexity of this ‘product’, defining stakeholders to involve in the design process, as well as the conditions under which they should be engaged is a theoretical and practice challenge. Stakeholders are not equally powerful and different stakeholders are entitled to different consideration. In some cases, stakeholders might be legally mandated or entitled to be involved. In other cases, the allocation decisions connected to spatial planning and natural resource management might involve conflicts, and raise questions about justice, fairness, and equity.

Collaborative planning processes transfer competences to informal institutions and actors beyond the nation-state, raising questions of legitimacy of the multi-stakeholder systems that are created or strengthened. Legitimacy derives from accountability, and while Citizen Observatories can be seen as tools to increase the accountability of planning authorities, as a civilian endeavour it has to gain legitimacy itself. COs can derive legitimacy, for example, by ensuring the configuration of members represents societal values, or by aiming to create societal benefits that are widely accepted. These abstract-sounding challenges manifest in daily practical management decisions such as who to invite to co-design workshops. Answering these challenges, effective stakeholder mapping for GT2.0 has to uncover sufficient information needed to decide

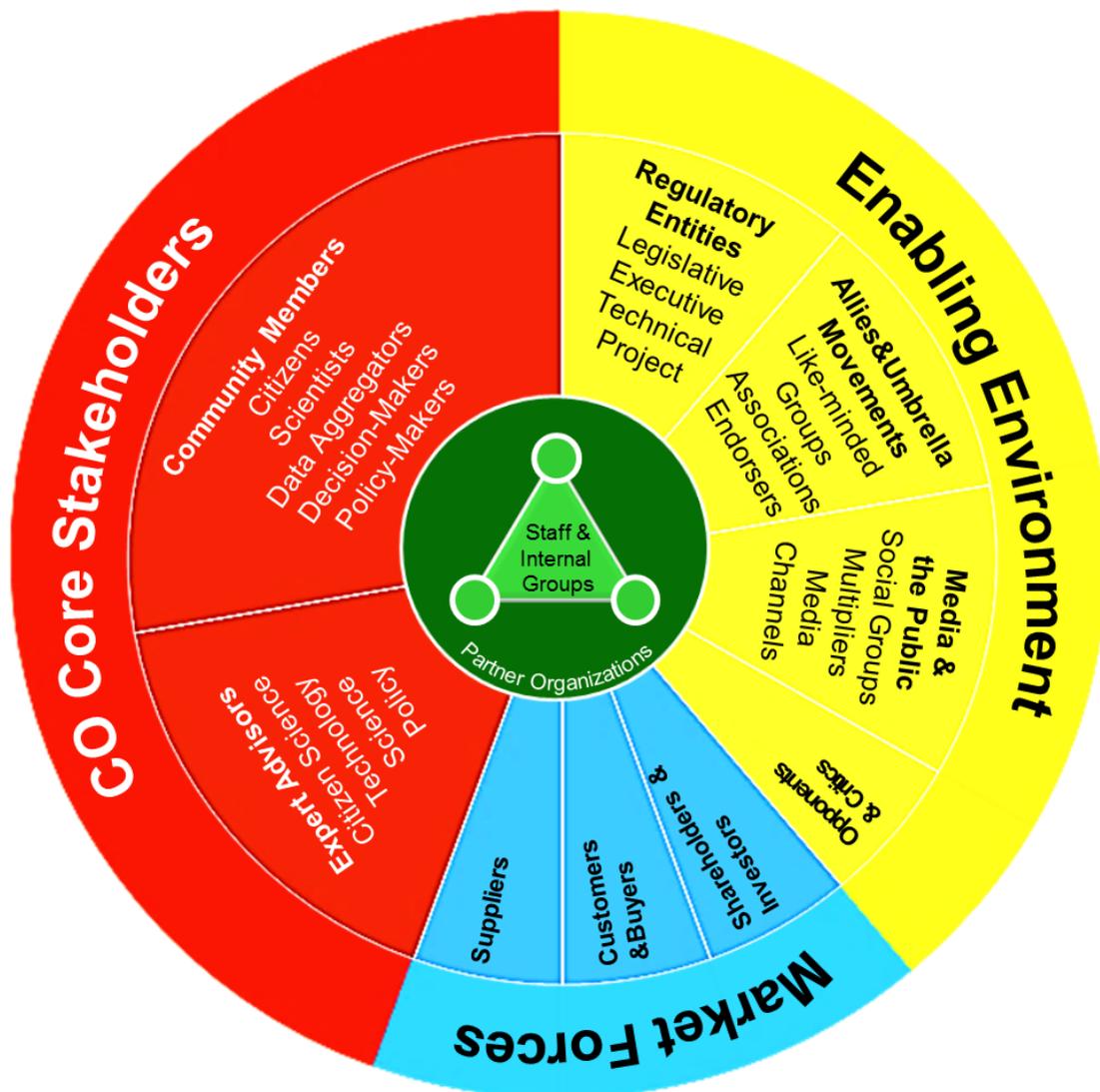
- WHO to engage;
- WHY to engage;
- HOW to engage; and
- WHEN to engage,

for the different social, technical, political and commercial design aspects of the Demo Case COs.

2.2 GT2.0 Stakeholder Framework

For the purpose of the project, we developed an integrated analytical framework, drawing on a broad set of sources and analytical approaches to stakeholder analysis, social network analysis and knowledge network analysis (see Bibliography). The resulting frame clusters the stakeholder groups needed across all work packages into 10 main categories. Categories are based on the role of a stakeholder in the project, i.e. on the rationale and logic guiding their engagement (see Fig 3 below). The framework is modular; the design is meant to enable GT2.0 task leaders to quickly identify groups relevant to their task, and work with a tailored sub-set of stakeholders. Notably, the framework intentionally allows and requires stakeholders with more than one role to be listed in several categories, thus drawing attention to potential role conflicts, or engagement for multiple reasons. The following sections will further define and illustrate the stakeholder groups clustered in the different categories and outline when and how the categories are relevant for the GT2.0 tasks.

Fig 3 GT 2.0 Main Stakeholder Categories



2.2.1 CO Core Stakeholders

Core Stakeholders are groups and persons who will be actively and personally involved in the Citizen Observatory and the effort to develop it. They are the key actors to recruit for the co-design process and priority target groups during the upscaling phase. The relationship with the citizen observatories is personal and interactive. Core stakeholders consist of two major sub-categories: **Community Members** and **Expert Advisors**.

Community Members

Citizen observatories represent a form of collective action, meaning that citizens, data aggregators, scientists, policy- and decision-makers “join” a collective effort. Practically, this effort creates a virtual community, commonly defined as an “*aggregation of individuals or business partners who interact around a shared interest, where the interaction is at least partially supported and/or mediated by technology and guided by some protocols or norms.*” (Porter 2006) Community members are all stakeholders who identify or perceive themselves as being a part of the social group that forms the CO community. In many cases, becoming a member of a community involves a visible act, such as signing a consent form, registering an account for an app, or posting to an online platform.

Why analyse? Building sustainable CO communities that engage with the platform beyond the duration of the project forms the heart of the GT2.0 efforts. Identifying stakeholders who could be or should be members, inviting them to join, and keeping them engaged is key priority for the stakeholder analysis and engagement strategy. From a technical perspective (WP 2), the community will include the core of “users” of the technical platform. From a business development perspective (WP3), the size and composition of the community will determine the feasibility of different business opportunities.

When to analyse? Project start: Mapping of groups sharing common interests with regard to the CO, from which pilot members can be recruited for the design phase. Preliminary identification of target groups that are likely to be relevant for upscaling. Year 2 and 3: Updated mapping of target groups for upscaling and in-depth analysis of the internal composition of the CO community to monitor if the evolving membership structure supports the project objectives, the intended business model, and the requirements of a sustainable knowledge-based community.

How typical stakeholders in this group might be called in different disciplines:

- *Project Management:* project beneficiaries, target groups
- *Business Development:* customers, clients, target market segments, early adopters
- *IT Development:* users
- *Political participation:* civil society, private sector, government, research
- *Knowledge Networks:* “We” in the Noosphere, human attractors, feedback controllers

Expert Advisors

Expert Advisors are stakeholders who possess and contribute knowledge or experience valuable for the development and activities of the Citizen Observatory, but who are unwilling or unable to become members of the core community. As examples, this concerns scientific issue area experts, software developers, or leaders of other citizen observatories who are too busy to “join” the community or are located outside the case region. For (senior) political actors and staff of government agencies and departments, becoming personally involved in the CO community might be restricted or impossible due to political or institutional considerations. Nevertheless, such actors might be willing to share relevant ex-

perience one-off during the design process, or to provide occasional advice when approached about a specific issue.

Why analyse? Involving leaders of other citizen observatories in the design process helps to avoid (common) mistakes, exchange ideas and provide a reality-check for suggestions. (In the GT2.0 context, the other five Demo Case leaders and the leaders of the EU ‘sister projects’ are pre-identified in this role by the DoA.) The data aggregators software developers and technology consultants are important partners during the development process, but usually only key account managers will join the collective activities in the longer term. “Neutral” scientific advisors can help increase the credibility (epistemic authority) of the CO. Experienced political operators are often crucial to open doors and facilitate political communication.

When analyse? Early on: Identify relevant citizen observatories, virtual communities, and community action groups in the project area. Identify one or two experienced personalities with intimate knowledge of the local political dynamics and its written and unwritten rules. Identify one or two independent scientific experts to informally ‘peer-review’ the scientific elements of the design and flag potential issues. Screen the project context for important gatekeepers and multipliers. Later: Outreach to policy-makers and decision-makers in the initial phase will identify individuals important to the success of the CO but unwilling or unable to become members; such individuals should be targeted as long-term expert advisors. Scan for eminent local scientists and experts as potential candidates to for advisory bodies to replace the GT2.0 committees after the end of the project.

How typical stakeholders in this group might be called in different disciplines:

- *Project Management:* *partners, consultants*
- *Business Development:* *primary/secondary stakeholders¹, special interest groups*
- *IT Development:* *n/a (inputs of such groups channelled via Product Owner)*
- *Political participation:* *civil society, private sector, government, research²*
- *Knowledge Networks:* *part of the Noosphere*

2.2.2 Enabling Environment

The Enabling Environment consists of stakeholder groups that influence how the activities and contributions of the CO are received, and enable or limit the impacts it can achieve. While a CO is free to choose which groups and individuals it defines and targets as members and advisors, stakeholders of the Enabling Environment are defined by forces outside the control of the CO. The four main sub-categories are **Regulatory Entities, Allies & Umbrella Movements, Media & the Public, and Opponents & Critics.**

Regulatory Entities

Regulatory entities are formal authorities that define the playing field and rules of the game for CO activities, based on a formal or legal mandate. This includes legislators, government and statutory agen-

¹ The specific configuration of the planned Citizen Observatories means that the lines between primary and secondary stakeholders in a classic business sense do not apply.

² From the political perspective, the stakeholder groups targeted to recruit community members and expert advisors are fundamentally the same. The distinction between the categories is only visible at the level of the individual stakeholder (organization), and depends on location, seniority and attitude

cies, and oversight bodies. Stakeholders count as regulatory entities if they hold the formal authority to determine what a Citizen Observatory can, must, should or ought to be doing, by granting rights, permissions or certifications, or by defining obligations, responsibilities or duties. Formal authorities have an institutional relationship with the CO, creating what scientists call a “*desire-independent reason for action*” (Searle, 2010:123).

Why analyse? Regulatory entities determine the formal and legal boundary conditions for the CO operations. In operational terms, they set rules the CO has to comply with. In political terms, they represent agencies that formally ‘own’, or have a legally defined role, in the land and natural resource management process targeted by the CO. A different set of legislation and regulation usually determines the legal boundaries of political information and participation. Formal authorities have ‘project critical’ influence, and have to be engaged to achieve the project’s objectives, whether or not they are supportive, neutral or hostile to the idea of citizen observatories. It should be noted that this not only concerns government agencies related to the political process targeted by the COs, but also project funders and hosting organizations, as well as the legal owners of technical standards and intellectual property the project relies on.

Double roles and potential role conflict: While decision-makers are meant to participate in the CO and will, ideally, become active members of the CO Community, it is important to keep transparent if and when they are legally or politically responsible (and accountable) for a final decision. Accordingly, a decision maker who becomes active in the CO has to be mapped twice, as regulatory entity as well as community member, indicating the double role and potential role conflict.

When to analyse? Project Start: Mapping of policy-related entities to determine parameters of citizen engagement and prepare engagement of relevant decision-makers; basic screening of operation-related regulators for business permits, data management and knowledge services to identify risk factors and formal permit processes that require time, preparation or negotiation. Year 2: Full mapping of operation-related authorities after identification of potential business models.

How typical stakeholders in this group might be called in different disciplines:

- *Project Management:* regulators, also: funding authority, statutory agencies
- *Political participation:* legislators, local/national government
- *Business Development:* regulators, government entities, professional associations
- *IT Development:* bodies for technical standards/certifications, regulators (data safety/protection)
- *Knowledge Networks:* “Them” in the Noosphere

Allies and Umbrella Movements

To be successful, new local initiatives and communities benefit from endorsements by trusted actors, alliances with other organizations and networks, and from the support and weight of broader movements. Endorsements document the ideational support of a more powerful actor, but frequently represent the only tangible support granted, and are thus also the weakest form of support and usually a tool that helps to gain access to potential members, advisors and allies. Potential allies are people and groups working to achieve similar objectives than the CO, but by different means, for different reasons, or on a different scale. This means their motivation for ‘joining’ in the CO itself is low, while an alliance

creates win-win situations, in which the success of one group will support the objectives of the other.³ In contrast, affiliation with an umbrella movement means that “we join them” in a collective effort, for example international networks for citizen science or open data. From the perspective of the umbrella movement, we are a “community member”, contributing to their cause and gaining weight in return.

Why analyse? Endorsements, alliances and membership in umbrella movements serve to build or borrow political and social capital. A new CO is unknown to other actors - endorsements and affiliations with a known organization help to communicate what the platform stands for, and signals to funders, potential members and collaborators that the CO initiative is serious, credible and respectable.

When to analyse? In a case like GT2.0, some affiliations are known and built into the DNA of the project (e.g. ODC), which has to be reflected in the baseline analysis. In addition early on: Basic screening the context for obvious allies. Upscaling phase: Identify promising targets for strategic alliances and possibilities to position the CO as part of broader “movements”.

How typical stakeholders in this group might be called in different disciplines:

- *Project Management:* secondary stakeholders
- *Business Development:* professional associations, lobby groups, corporate networks
- *IT Development:* consortia of open source platforms/standards
- *Political participation:* external stakeholders
- *Knowledge Networks:* part of the Noosphere

Media and the Public

This category subsumes all external stakeholders who are relevant to the creation of a positive and receptive environment for the observatory and its activities. To break down the monolithic notion of ‘the public’ and enable meaningful communication and outreach strategies, the stakeholder analysis needs to screen for distinct population groups that might require a tailored message (e.g. farmers or language groups), communication channels or multipliers that could help reach a large number of people (e.g. local churches or NGOs with an interesting membership), and local VIPs and opinion leaders (who do not necessarily care about the issue or CO objectives but will promote a ‘good cause’).

Why analyse? To upscale the citizen observatories and sustain their activities in the long-term, communication of their activities and raising awareness for the related concerns is essential. Social structures and local preferences for media and other social channels determine the most effective ways to reach both large numbers of people, and to direct messages to groups with specific known interests. Multipliers and local opinion leaders – trusted sources of local communities - are especially important to increase the impact of communication.

When to analyse? Early on: Create an understanding of the general structure of the local context, to identify main entry points or pillars for project communication. Later updates in collaboration task leaders for stakeholder engagement (more detailed mapping of the media landscape) and market analysis.

How typical stakeholders in this group might be called in different disciplines:

- *Project Management:* local community, bystanders
- *Business Development:* consumers, the public, excluded stakeholders

³ As examples, groups involved in local implementation of SDG targets on water quality, urban green spaces or sustainable tourism will have similar objectives as the demo cases in Sweden, Flanders and Kenya respectively. Relevant NGOs might be working at the national level, but team up with a CO to advocate on specific linked issues. Some local action groups might simply prefer to remain ‘offline’.

- *IT Development:* *n/a (managed/channelled via Product Owner)*
- *Political participation:* *civil society, the public, local communities*
- *Knowledge Networks:* *urban environment, periphery*

Opponents & Critics

Citizen Observatories are meant to be instruments of social innovation, facilitating participation and collaborative planning processes – an ambition that requires actors to change the current practice. Calls for change will usually elicit a range from enthusiastic support to outright hostility. Opposition to the proposed changes can be caused by a variety of reasons, ranging from people trying to prevent a loss of power or privilege (vested interests), people fearing change in general, to ideological convictions, to simple misunderstandings. Reflecting the mixed political and commercial objectives of the GT2.0 project, commercial competitors have been included as a special subgroup of this category, acknowledging inherent conflicts of interests but also recognizing that the ‘altruistic’ nature of the COs might leave more room for joint ventures and social enterprises as development of fully commercial IT platforms.

Why analyse? While some opponents might simply choose to avoid any contact with the CO, other actors might actively try to prevent the success of the CO. Depending on the power of the actor, such opposition can have significant influence on the impact of the planned activities. The key purpose of the opposition screening is, therefore, to identify opponents and critics significant enough to require an active response and mitigation. Especially in cases where criticism and opposition is rooted in misunderstandings or fear, opposition can often be reduced and conflicts avoided by outreach, information and awareness raising.

When to analyse? Early on: Screening for powerful actors to enable monitoring of their attitude. Detailed analysis once the fundamental goals and parameters of the CO have been co-designed, and implications for current practice become clearer.

How typical stakeholders in this group might be called in different disciplines:

- *Project Management:* *objectors, competitors*
- *Business Development:* *competitors, substitutes*
- *IT Development:* *non-users*
- *Political participation:* *negatively affected groups*

2.2.3 Market Forces

Market forces are all stakeholder groups that engage in direct economic (financial) transactions with the Citizen observatory. The segment has been included to facilitate integration of the planned commercialization strategy with the other project tasks and work packages. The initial frame clusters stakeholder groups that are usually absent from political and knowledge-based approaches to stakeholder analysis. The segment will be further refined and elaborated in collaboration with WP 3. Market Forces consist of three main sub-categories, **Shareholders and Investors**, **Prospective Buyers**, and **Suppliers**.

Shareholders and investors

Shareholders and investors are stakeholders with a direct financial stake in the CO, meaning they provided liquidity either in the form of loans that require repayment, grants in expectation of social returns or investments made with the expectations of a one-time or continuous financial return. The funding

modalities can take many different forms, but the stakeholder class is determined by the existence of an asymmetric donor-recipient-relationship with the CO.

Why analyse? Sustainable COs require investment of resources and major intellectual effort by either altruistic groups or commercial investors. In the first case, funding depends on effective alignment between interests and objectives of funders and community members despite the power asymmetry, a fact that requires careful consideration in the co-design process. For a long-term perspective, some altruistic funders have stable interests (e.g. foundations), while others are subject to political changes (e.g. ministries), or short-term hypes (e.g. crowd-funding). This has to be considered to ensure continued maintenance of the application. Similarly, where platforms are funded by commercial organizations, free services might be withdrawn or changed on the whim of the provider.

When to analyse? Initial stakeholder analysis: basic screening for prospective investors whose interests will require consideration during the co-design process. Detailed analysis once the fundamental goals and parameters of the CO have been co-designed, and benefits, resource streams and funding opportunities become clearer.

Double roles and potential role conflicts: In case several commercial organizations are involved in the co-design process, a funding commitment by one organization might be perceived as 'takeover' by a competitor by other partners.

Suppliers

Suppliers are organizations that deliver goods and services necessary to provide the services of the CO out of commercial interest, and linked with the CO over longer periods of time as part of a supply chain. Goods and services for COs might include hardware components (including maintenance), software components (including updates and continuous development), or knowledge and data services. The stakeholder category is especially relevant to distinguish potential revenue streams of the CO itself from revenues of project partners. Suppliers have a strategic relationship with the CO.

Why analyse? The inputs of technology and service providers determine and shape the functional range, price and quality of the CO technologies and services. If technologies and services that cannot be easily substituted, or require specific maintenance capacities, COs will be dependent on the product policy of few suppliers.

When to analyse? Initial stakeholder analysis: basic screening for stakeholders with a commercial interest in the success of the CO, and for influential technology partners who will require consideration during the co-design process. Detailed analysis once the fundamental goals and parameters of the CO have been co-designed, and benefits, resource streams and funding opportunities become clearer.

Double roles and potential role conflicts: Data aggregators/partners with proprietary technology and software are both relevant community members/expert advisors during the development phase and suppliers in the long term. The commercial interest as future supplier creates a strong long-term incentive for participation, but also vested interests to 'lock in' certain technologies creating friction between the project's commitment to open data standards and proprietary intellectual property.

Prospective Buyers and Customers

Prospective Buyers are stakeholders who buy technologies developed for or services of the CO and thus determine the commercial success of the observatories. The number, type and power of buyers as stakeholders depends on the selected business model – business-to-business (B2B e.g. advertising with few media companies as customers), business-to-customers (B2C, e.g. subscription models with many low-fee customers), or business-to-government (B2G, e.g. subsidy models or payment on a project/assignment base). Customer relationships are defined by a formal contract of sales with the CO, inclusion of prospective customers as stakeholders can thus be seen as a preliminary or exploratory contract negotiation.

Why analyse? “Customers” represent a special category of stakeholders in this assessment frame. IT development and project management approaches usually only have one customer to consider, while political platforms and development projects usually do not have commercial customers. In contrast, buyer motivations are considered one of the most powerful forces in the market for web applications. The type and interests of prospective buyers of the CO’s commercial services determines alignment and conflicts between commercial and political objectives of the CO. Identifying prospective customers is, therefore, crucial to ensure the right composition of interests in the co-design process.

When to analyse? The initial stakeholder analysis will perform a basic screening for influential stakeholders with a known interest in the finished ‘product’, whose interests will require consideration during the co-design process.

Double roles and potential role conflicts: Prospective buyers might also be community members or even regulatory entities (e.g. local authorities). This might create a power imbalance in the community, at worst creating the perception that other community members ‘serve’ this actor. Furthermore, experiences of similar projects suggest that actors who are involved in a co-design process might expect to receive all resulting services for free, eliminating them as future buyers; therefore, careful expectation management is required early on in the process.

2.2.4 Internal stakeholders

Internal Stakeholders are functional entities in the CO project or organization, i.e. groups that are engaged with the CO activities based on a formal appointment, assignment, mandate or (employment) contract, such as staff and advisory bodies. Their roles exist only because and as long as the CO exists, creating an immediate personal stake in its operation and success. Functional entities have an “incorporated” relationship with the CO, and represent the core enablers and resources of CO operation.

Why analyse? “Internal” stakeholders like staff and managers have high influence on all aspects of operations and are essential for long-term success. In a case like GT2.0, management of internal stakeholders presents a specific challenge, as platform development is funded as a project with a specific time limit. That means that an initial team of staff assigned by consortium partners and dedicated advisory bodies has to be transitioned to a continuous operational model with different/less staff, resources and partners after three years.

When to analyse? Project Start: Basic mapping of project-internal stakeholders. Year 2 and 3: Use updates to stakeholder analysis to monitor if functional entities for the longer-term perspective are being moved into place, and the balance of power and interests is shifted and aligned in ways that support the transition.

How typical stakeholders in this group might be called in different disciplines:

- *Project Management:* project leader, project team, subcontractors/consultants
- *Business Development:* managers, staff
- *IT Development:* administrators, programmers
- *Political participation:* policy-makers, bureaucrats
- *Knowledge Networks:* moderators

2.3 Baseline Context Analysis

Citizen Observatories as envisioned in GT2.0 are a contribution to sustainable resource management and sustainable development. Sustainability (science) is by nature ‘place-based’, delineated by the reference frames of local populations (Miller 2015). At the same time, many factors influencing the project outcome have different boundaries, and key stakeholders might be found outside the project area.

The initial context analysis clarified the outlines of the project area and why it was chosen. The subsequent baseline survey followed the structure of a PESTEL analysis, exploring political, environmental, social, economic and legal boundaries of the Demo Cases. The report will highlight the stand-out aspects discovered in the initial screening, based on the following guiding questions:

- Political and legal boundaries: What is the political structure in the project area – how many levels of government are there and how do the various levels affect the issue? What are defining features, drivers and conflicts of the local political culture? How open is the system to participation? Which legislation and regulation at which levels governs the issue addressed by the CO; which laws establish rights and limits to citizen participation?⁴
- Environmental boundaries: In what landscape does the project take place – are there defining features in geography, climate, ecosystems, seasons? What are the ‘natural boundaries’ of the issues investigated by the CO; is it linked to larger scale phenomena such as river catchments, ecosystems or habitats, weather zones, or migratory species?
- Social/Cultural boundaries: What factors inform the identity of the local population? Is the population homogenous, or are there major ethnic or tribal groups, different languages, or religious, social or cultural sub-groups? Is local culture highly autonomous, or do other cities or countries serve role models and trend setters?
- Technical boundaries: Are there any specific aspects in the technical infrastructure, access and use of technology that need to be considered in the project design? Are there any particular local preferences for social media networks or popular local online communities?
- Economic boundaries: What is the structure of the local economy and how is economic power distributed in the project region? Are there major employers or concentrated industrial clusters, ports or special economic zones inside or outside the project area?

Summary analysis of the screening results aimed to establish if the project area presents a match to the ‘problem area’, if the chosen scale for organizing action and collecting data corresponds to the neces-

⁴ Note: The updated legal context analysis will also consider regulation with regard to data and business operation, drawing on the outputs of T5.3 (data management) and T3.1 (market analysis).

sary scale and information needed to promote collaboration and find solutions. In addition, the context mapping was also used to inform the stakeholder analysis, exploring possible synergies and overlaps in spaces of interest.

2.4 Data Collection and Analysis

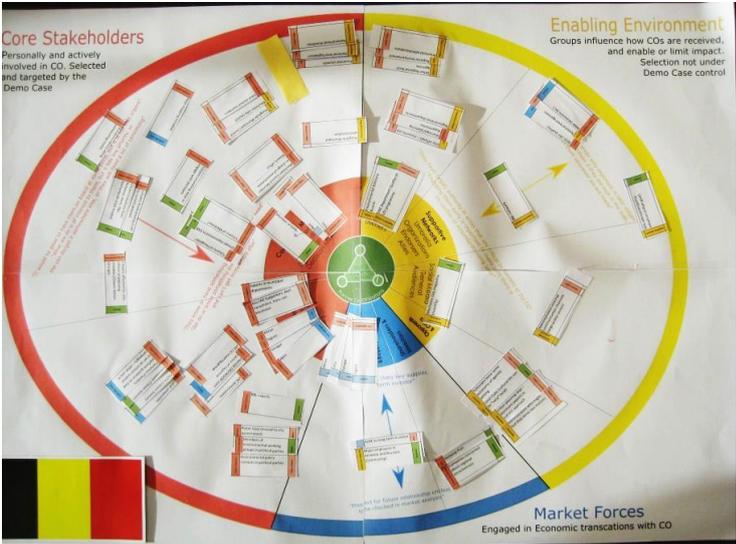
Data was collected for each of the six GT2.0 Demonstration Cases via desk study of project documents, secondary sources including empirical data provided by OECD, World Bank and the International Telecommunication Union (ITU), individual interviews with the Demo Case leaders (via phone conference and face-to-face), and workshop exercises.

The baseline stakeholder mapping was conducted in four stages. First, a short pre-screening interview conducted with the demo case leader during and shortly after the kick-off meeting served to get a sense of the range of stakeholders and contexts the stakeholder analysis would have to serve (for the interview protocol, see Annex 1). The results of the interviews served as an orientation and reality-check in the literature-based development of the analytical framework, and the assembly of a generic catalogue of potentially relevant stakeholder groups for citizen observatories.

In the second stage, extended semi-structured group interviews were conducted with the Demo Case leaders and up to two close collaborators. The interviews included a context mapping exercise, and clarification and mapping of the target process, and a mapping exercise designed to identify stakeholders in the categories “CO Core Stakeholder” and “Enabling Environment”.

The interviews were conducted via phone-conference, each lasting around 2-3 hours. Interview questions were both asked orally and shared on screen in a presentation, which also served to take notes in a way visible to the interviewees, to avoid misunderstandings, stimulate reflection and further association. Stakeholders identified in the proposal phase, as well as groups mentioned or implied in the pre-screening interview were copied into the presentations prior to the interview to avoid redundancies (for the interview protocols, see Annexes 2 and 3). Subsequently, the interview results were translated into an initial stakeholder inventory per case; listing all stakeholder group explicitly or implicitly mentioned and classifying them according to categories of the analytical framework.

Fig 4 Stakeholder “Sunburst” of the Belgian Demo Case



In the third stage, the stakeholder inventory was validated by working groups in a plenary workshop, and visually ordered to develop a timeline for engagement of different groups (see annex 4 and Fig 4).

In the final step, the stakeholders of the inventory have been mapped against a generic inventory stakeholder groups (see Annex 5). This mapping serves two purposes. On the one hand, the mapping the real-life stakeholder of the Demo Cases against the “generic” stakeholder groups validates the usefulness of the suggested framework. On the other hand, comparing the inventory of stakeholders against a ‘search profile’ of generic stakeholder groups serves to identify ‘blind spots’, i.e. stakeholders that might be a valuable addition to the Citizen Observatory, but that been considered for engagement yet. The summary analysis aimed to derive initial insights into priorities and gaps regarding stakeholders needed to reap the intended societal benefits, stakeholders needed to direct the design of the technical functionality, stakeholders needed to address the political process, and stakeholders needed to ensure uptake and impact of the COs.

The below table summarizes which data sources served to populate the initial stakeholder mapping. It should be noted that the majority of observations included in the baseline analysis involve perceptions, assumptions and opinions of Demo Case leaders and their key collaborators. This has two implications. On the one hand, the updated stakeholder analysis will seek to collect data from a wider range of stakeholders, and validate subjective information with objective or neutral empirical data. On the other hand, the assumptions and opinions in themselves present a valuable source of information; observing the influence of perceptions on the Demo Case design will also serve to inform the generic methodology (task 1.8).

Table 1 Data Sources for the Baseline Stakeholder Mapping

	Proposal Phase	Pre-Screening	Process Mapping	Secondary Data	DC Interview	Social Media	Workshop
CO Members	X	X	x		X	x	x
Expert Advisors	X	X	x	x	X		X
Regulatory Entities			X	X	X		X
Allies				X	X		X
Media & Public		X		X	X	x	X
Opponents		X	X		X	x	X
Investors					(x)		X
Suppliers	X				(x)		X
Buyers		x			(x)		X

3 Analysis Demo Cases

3.1 Environmental Quality of Life – Flanders, Belgium

3.1.1 Context Mapping⁵

The Demo Case targets the Belgian region of Flanders, matching the jurisdiction of the Flemish Department for Environment, Nature and Energy (Leefmilieu, Natuur en Energie - LNE), the main driving force behind the initiative.

Fig 5 Target Area of the Belgian Demo Case



As part of its political mandate, LNE offers local authorities guidance and subsidies to promote the implementation of local measures improving local environmental quality of life (EQL). The CO is envisioned to help stimulate and target such activities at the local level. The project is a successor to an earlier initiative that focused on educating the public about environmental quality of life as an issue. Two municipalities have been selected as pilot areas, one urban (Mechelen) and one rural (Hoogdele). Activities in Mechelen will build on existing contacts with the local authorities. Hoogdele has been actively ‘recruited’ for the pilot, but although local political actors are interested in the CO, they also expressed concern about the resources required for participation.

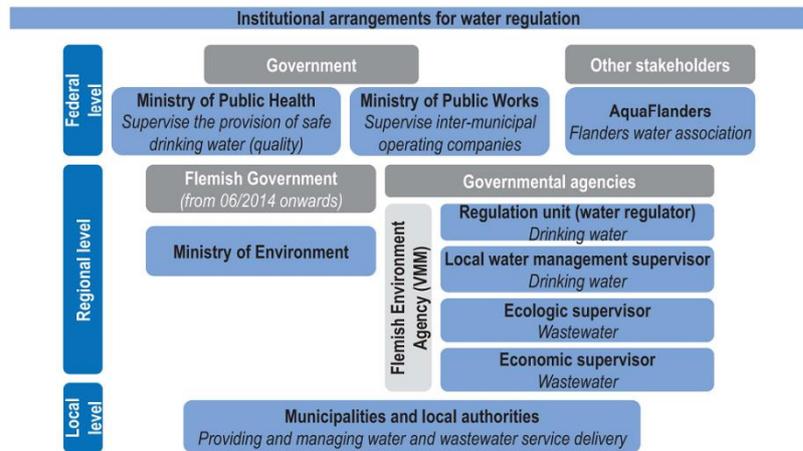
Political Context: The political structure in Belgium includes five levels – EU, national level, federal regions, provinces and cities/municipalities. The federal regions are considered to be the dominant political force for framework policies, with operational decisions taken at the local level, while provinces are considered to have little relevance. Competencies related to EQL specifically are concentrated on the local level (responsibility for action), and at the regional level (responsibility to motivate action with subsidies as main incentive). With regard to other related policy areas, such as environmental policies, spatial planning and natural resource management, competencies are overlapping; Fig 6 illustrates the resulting institutional complexity for water management. All government levels might be involved in implementing EU Directives or set their own policies. It is noted that an issue perceived as not sufficient-

⁵ For local summaries of statistical data and reports quoted, as well as additional background information see OECD country page (<http://www.oecd.org/belgium/>), OECD Better Life and Regional Wellbeing Indices (<http://www.oecdbetterlifeindex.org/countries/belgium/> and <https://www.oecdregionalwellbeing.org/BE2.html>), World Bank ‘Doing Business’ Analysis (<http://www.doingbusiness.org/data/exploreconomies/belgium>), International Telecommunications Union (<https://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>), and the European (<http://ec.europa.eu/eurostat>) and Belgian Statistical Services (<http://statbel.fgov.be/en/statistics/figures/>)

ly addressed by a lower level authority can usually be contested through formal channels at a higher level.

In terms of political culture, the Flanders is described as a rather closed system. Elected officials enjoy strong mandates; electoral programmes serve as a main platform for the competition of ideas. Voting is compulsory in Belgium. According to the OECD, voter turnout stands at 89.4% and is among the highest in the OECD. The interviews suggest that a majority of the Flemish population is satisfied with the dominance of elected mandate-holders, “as long as they do their job”. Reflecting this attitude, failure of government institutions can lead to a massive loss of confidence – the recent Euro crisis led to a 17% loss of confidence in the national governments in Belgium, compared to a 9% loss in the Netherlands, and a 6% gain in Sweden (OECD 2013). In terms of stakeholder information and participation, Belgium ranks at the OECD average for useful government data, but stays below OECD average reading consultation on draft regulation.

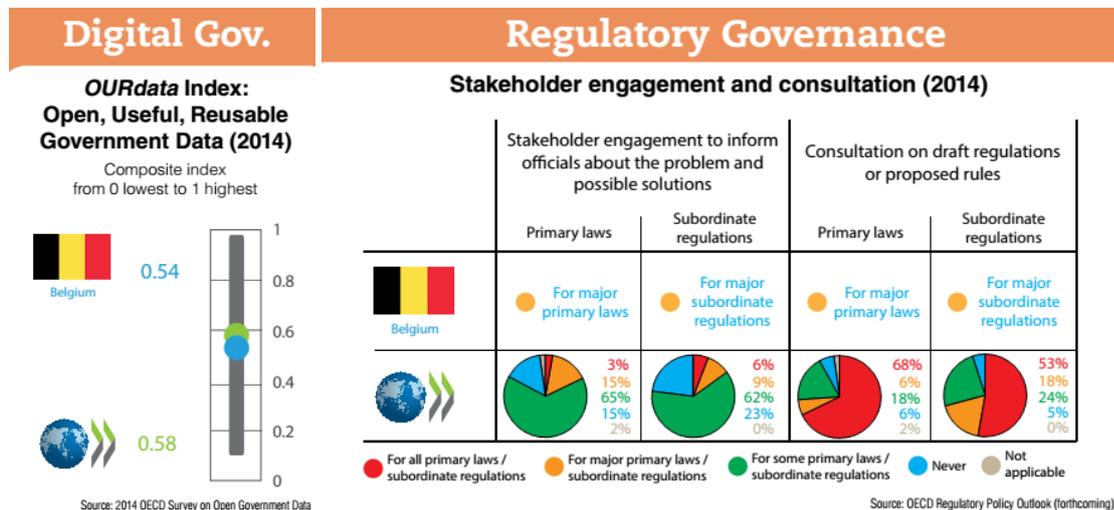
Fig 6 Structure of the Flemish Water Governance Institutions



Sources: OECD Survey on the Governance of Water Regulators, 2014; Flemish Environment Agency: www.en.vmm.be and written contribution received 2 May 2014; Elaborations on the metropolitan database, OECD (2012), Redefining “Urban”: A New Way to Measure Metropolitan Areas, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264174108-en>.

Reflecting this attitude, failure of government institutions can lead to a massive loss of confidence – the recent Euro crisis led to a 17% loss of confidence in the national governments in Belgium, compared to a 9% loss in the Netherlands, and a 6% gain in Sweden (OECD 2013). In terms of stakeholder information and participation, Belgium ranks at the OECD average for useful government data, but stays below OECD average reading consultation on draft regulation.

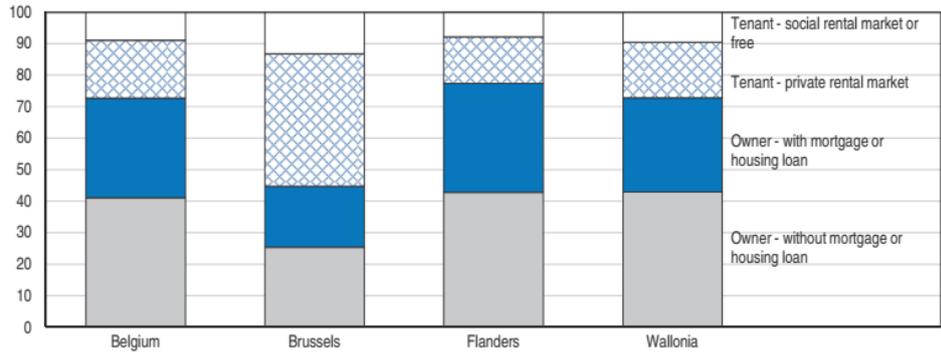
Fig 7 Baseline Indicators Transparency and Participation in Regulation, Belgium



Environmental Context: The Flemish landscape is highly fragmented, in part due to historical political encouragement of free-standing home ownership. The fragmentation of the landscape described above is clearly visible in housing data (see Fig 8). The lack of available plots has led to a quadrupling of real land prices during 1992-2013, while real house prices ‘only’ doubled. With few open spaces left in the area, urban expansion or infrastructure projects will almost inevitably lead to a loss of recreational areas, amplifying the impacts of planning mistakes. In addition, many citizens commute to work in bigger

metropolitan areas, separating professional and private living spaces, and thus contributing to the perception of the latter as the ‘house in the green’ to be preserved. Cities are currently seeking to improve their attractiveness, but one question the CO seeks to answer is how big an area citizens look at to judge if they are living in a “nice” environment, thus providing better insight into effective scales for organizing action.

Fig 8 Belgian home ownership (in % of population)

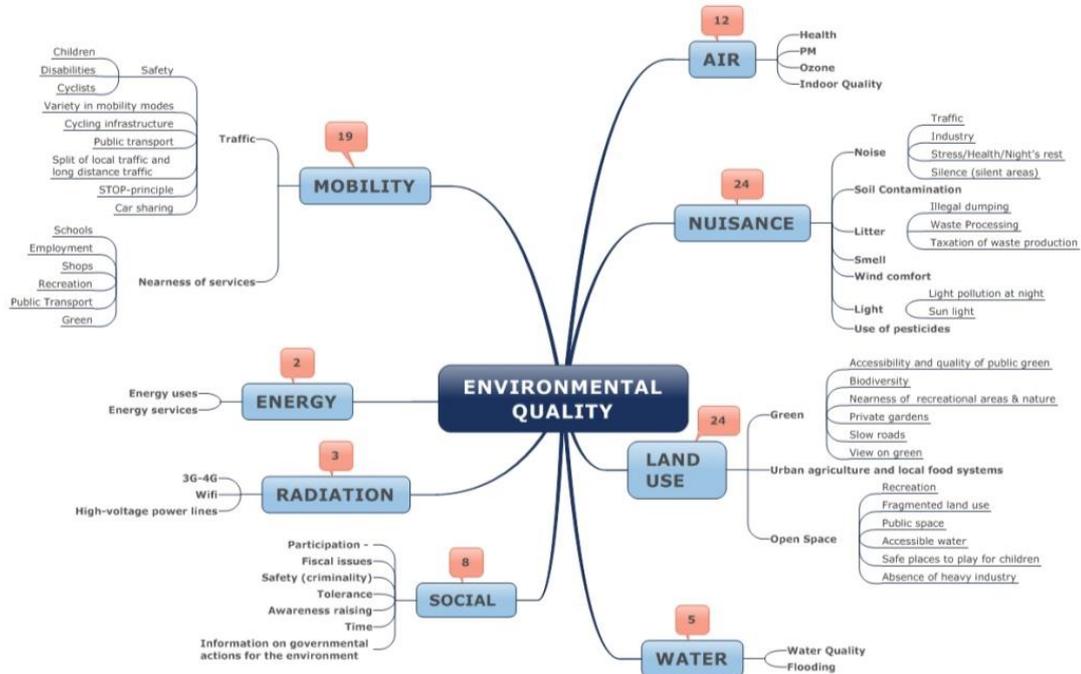


Source: S. Winters and K. Heylen (2013), “How Housing Outcomes Vary Between the Belgian Regions”, *Journal of Housing and the Built Environment*, July.

StatLink <http://dx.doi.org/10.1787/888933180994>

Social/Cultural Context: Life satisfaction in Flanders is very high, and ‘enjoying the good things in life’ is described as one defining characteristic of culture. For example, full-time employees in Belgium report having more time off than most other OECD countries. In terms of personal identity, local citizen are assumed to more strongly identify as ‘Flemish’ than as ‘Belgian’. Local cities compete and compare themselves to each other. Antwerp and Ghent are positively seen as local cultural centres, while Brussels providing a negative model of a city ‘where you work but don’t want to live’. In smaller communities, the culture is can be “very local”, with a population that has little desire to live in cities and rather wishes to escape the urban sprawl and ‘enjoy their garden’. The described attitudes match the mindmap of local citizen concerns found in a LNE survey, which describes issues related to the environmental quality of life predominantly in terms of “nuisances”.

Fig 9 Internal survey results: What topics prioritize Flemish citizen with regard to EQL



In terms of general attitudes relevant to the case, the 2014 Eurobarometer Poll “Attitudes of European citizens towards the environment”, found that in

- 95% of the Belgian population personally believe that protecting the environment is important, but only 28% of Belgians picked ‘Urban issues’ as addressed in the CO as major concern, compared to 60% or respondents expressing concern over air pollution and 48% over water pollution
- 67% of Belgians agree that environmental issues have a direct impact on their daily lives, and 68% of respondents felt that citizens themselves are not doing enough to protect the environment.
- 59% of Belgians feel well informed about the environment, 22% of respondents state a lack of information on urban issues, 33% on air pollution, 29% on water pollution
- Sources of environmental information are: 69% TV, 41% social media/internet, 41% newspapers. In terms of trusted sources 52% believe in the reliability of scientists, 41% trust environmental protection associations, 34% TV documentations

With regard to civil engagement, 34.2% of Belgians report to volunteer in some form over a year, which is about OECD average. Main areas for volunteering are education and culture, followed by sports.

Technical Context: Flanders is technically well connected; the share of households with a broadband connection is 85% in the Flemish region. The population is assumed to mainly use the market leaders in social networks. It is noted that a significant number of people are posting in Dutch or English because they either have international friends or ‘*think they are addressing an international audience*’

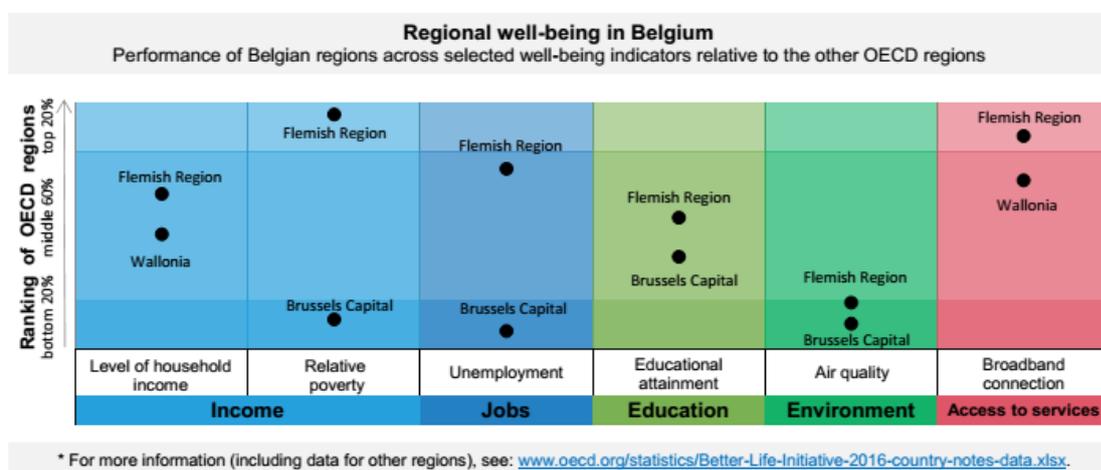
Fig 10 ITU Access and Usage Indicators 2016, Belgium

Economy	Fixed-telephone subscriptions per 100 inhabitants		Mobile-cellular subscriptions per 100 inhabitants		International Internet bandwidth Bit/s per Internet user		Percentage of households with computer		Percentage of households with Internet	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
17 Belgium	40.7	40.1	114.3	115.7	221'688	241'805	82.0	82.1	82.8	81.8

Economy	Percentage of individuals using the Internet		Fixed-broadband subscriptions per 100 inhabitants		Active mobile broadband subscriptions per 100 inhabitants	
	2014	2015	2014	2015	2014	2015
17 Belgium	85.0 ⁷	85.1 ⁶	36.0	36.8	57.8	66.6

Economic Context: Belgium’s average household income is close to the OECD average, but household net financial wealth is among the highest in the OECD, and Flanders the regional leader on all variables within Belgium. Brussels and Antwerp are economic centres of gravity, with industrial zones around the port of Antwerp (chemical, pharmaceutical), and otherwise many scattered SMEs, and a large public sector.

Fig 11 Regional Well-Being Indicators, Belgium



3.1.2 Stakeholder Inventory

Table 2 Demo Case Stakeholder Inventory, Belgium

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority: Engage in phase			reason	Implications, comments, open questions	Code
		1	2	3			
Core Stakeholders - Community Members (Recruitment Targets)							
CS - Community Members - Citizen target groups - individuals	Citizens of Meche-len/Hooglede who would like to see EQoL initiatives launched in their neighbourhood		x	x	we start with EAB, upscale to larger group per pilot city,	Does the EAB suggest EQL initiatives? Would citizens contact the EAB to suggest such initiatives - criticality high; Positive expectations: Improve recreation experience i.e. monitoring water quality in natural water bodies can lead to improved water quality which in turn benefits recreation Negative expectations it is possible that monitoring results can lead to unfavourable decisions, and such initiatives could be a waste of public money Enabling factors: Ability to share data on line in time-efficient way. - Hindering factors: Inability of the initiative to have an impact of decisions/policies.	Citizen
CS - Community Members - Citizen target groups - individuals	Citizens of Meche-len/Hooglede affected by side-effects of planning mistakes		x	x	we start with EAB, upscale to larger group per pilot city,	Clarify - this group is likely frustrated by current system, and might not feel represented by EAB or feel that inputs are not sufficiently considered; Enabling factors: Ability to share data on line in time-efficient way. - Hindering factors: Inability of the initiative to have an impact of decisions/policies.	Citizen
CS - Community Members - Citizen target groups - individuals	Everyaware (Citizen Science)			x	project is finished: scientific community that we can address		Citizen
CS - Community Members - Citizen target groups - individuals	Residents along commuting routes		x	x	Possible group of citizens worried/annoyed by local impact on their living environment		Citizen
CS - Community Members - Citizen target groups - children						Not yet considered, especially relevant via urban green spaces for families;	Citizen
CS - Community Members - Citizen target groups - organized citizens	Member of EABs	x			main access point to local community		Citizen
CS - Community Members - Citizen target groups - organized citizens	Groups represented in EAB		x		we like to address each group through their EAB representative	The EAB members are nominated as representatives of specific organized interests and likely to identify as advocates. Does the narrow focus on EAB members sufficiently consider possible role conflicts and gatekeeper issues? Nature conservation organizations might be concerned of increasing recreation	Citizen

Generic "Search Pro-	Demo Case - Stakeholder	Priority: Engage in phase			Implications, comments, open questions	Code	
CS - Community Members - Citizen target groups - organized citizens	Local chapters of environmental organizations (via BBL)		x		we have BBL (Flemish environmental umbrella organisation on board) to get into contact with citizens engaged in environmental organisations	activities that can negatively affect the nature.; disaggregate BBL groups;	Citizen
CS - Community Members - Citizen Tagert Groups - Community Action groups	Citizens of Meche-len/Hooglede - Citizen Action Groups with related issues		x	x	Organized citizen actions group will have the opportunity to use our CO platform to share observations of what worries them about their local environments	high aptitude for action, high awareness for problems in current system;	Citizen
CS - Community Members - Business target groups - major local presence						Consider employers with broad and frequent physical presence across project area - postal services, companies with many local branches/shops;	Citizen
CS - Community Members - Business target groups - leading employers	Companies concerned about regional attractiveness			x	The results of the CO can be useful for companies who are concerned about the well-being of their employees or want to promote the attractiveness of their office locations	;	Citizen
CS - Community Members - Business target groups - reliant on environmental/natural resources						relatively high pollution levels found in the area, clarify peculiar situation of Antwerp port ('outsourcing' of port access to the Netherlands under historic treaty) Industries that produce pollution might not want EQL to be monitored;	Citizen
CS - Community Members - Business target group - "corporate citizens"						;	Citizen
CS - Community Members - Policy target groups - decision-makers	Municipal planning departments		x	x	Group of decision makers with broad knowledge on the local context and we expect they will be interested in CO results	Key actors to consider citizen concerns in the planning and implementation of political initiatives potential perception to "serve two masters"; Designating a recipient of CO data who possess enough authority to take actions considered key success factor	Decision-maker
CS - Community Members - Policy target groups - administration	LNE Ambassadors	x		x	first key contacts, then we have a few key contacts at LNE, like to have a larger group of ambassadors later (also expert advisors)	;	Policy-maker

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

CS - Community Members - Policy target groups - policy-makers/legislators	Local council members	x	x	We want to address the local council member responsible for environmental topics during the start-up phase, other council members/mayor in the follow-up phase	Likely to be interested, key contact, but position unclear;	Policy-maker
- Community Members -	environmental working groups in political parties			x important group but 'far from the center of our case', we need a demonstration before we interact with them	political parties might perceive citizen engagement as loss of autonomy;	Policy-maker
CS - Community Members - Data Aggregators	Vito	x		GT2.0 partner	VITO as lead expert with Flemish network and Flemish experience; specific incentives and obstacles for 'scientific' data aggregators - improve data-based decision making and involve broader audiences, but also highest risk of reputational damage in case of low data quality	Data Aggregator
CS - Community Members - Scientists	Local universities			x Academic interest in our progress from a distance, except for 'Flemish sister projects'	;	Scientist
Core Stakeholders - Experts & Advisors						
CS - Expert Advisors - Design-Phase - experts citizen science	PASTA (Citizen Science)			x Ongoing citizen science project, interesting group of citizens involved (Antwerp)	;	Scientist
CS - Expert Advisors - Design-Phase - experts citizen science	Flamenco (Flanders, platform guidance on how to set up citizen science campaigns – other unit in VITO)	x	x	Sister project in which VITO is active (Flemish funding), different scope but also focus on citizen science campaigns in Flanders, regular bilateral meetings for cross-project learning, strengthening both projects	;	Scientist
CS - Expert Advisors - Design-Phase - issue experts	BBL experts			x BBL is on-board to reach out to large groups of citizens. BBL members will also be involved as experts in both environmental topics and engaging citizens.	;	Scientist
CS - Expert Advisors - Design-Phase - issue experts	Experts in municipal departments			The city employee(s) responsible for environmental topics in the administrations are our first contact points when addressing the pilot cities. For upscaling, they form a group we want to address at	;	Scientist
CS - Expert Advisors -	Vito	x		GT2.0 partner	VITO as lead expert with Flemish network and Flemish experi-	Scientist

Design-Phase - issue experts					ence;	
CS - Expert Advisors - Design-Phase - issue experts	IRCEL (Air quality) -			x	Experts at Flemish level for AQ -> contact once CO operational and possible to demonstrate results for pilot cities	Scientist
CS - Expert Advisors - Design-Phase - issue experts	VMM (Waterinfo.be)			x	Experts at Flemish level for a lot of environment topics (water, heat stress, climate,...)	Scientist
CS - Expert Advisors - Design-Phase - technology experts	Vito				GT2.0 partner	Citizen
CS - Expert Advisors - Design-Phase - technology experts	Altran	x			GT2.0 partner	Data Aggregator
CS - Expert Advisors - Design-Phase - technology experts	Akvo	x			GT2.0 partner	Data Aggregator
CS - Expert Advisors - Design-Phase - technology experts	Gavagai	x			GT2.0 partner	Data Aggregator
CS - Expert Advisors - Design-Phase - technology experts	Tygron	x			GT2.0 partner	Data Aggregator
CS - Expert Advisors - Design phase - reality checkers citizen observatories	Leaders other GT2.0 Demo Cases	x			GT2.0 partner	Citizen
CS - Expert Advisors - Design phase - reality checkers local politics	Experiences city official		x		ex-colleague at the city of Genk	Policy-maker
CS - Expert Advisors - Long-term - local policy	Mayor's office		x		We should ideally network in...	Policy-maker
CS - Expert Advisors - Long-term - science						Data Aggregator
CS - Expert Advisors - Long-term - policy linkages	LNE CO steering group	x			VITO has frequent (4-5 times per year) a meeting with the steering group of the Quality of Life initiatives at LNE, we have agreed to have GT2.0 progress as agenda	Policy-maker

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

				point at each meeting		
CS - Expert Advisors - Long-term - policy linkages	Flemish Government Team DO (Department of Administration and Chancery), WGDO,			x Cross-discipline teams for sustainable development supports the Flemish prime minister to coordinate its policy on sustainable development.	Centre of Expertise for Sustainable Development as asset;	0
Enabling Environment - Regulatory Entities						
EE - Regulatory Entities - process - Supra-national bodies	EU, EC				Issues binding legislation (directives), offers legal channels that might support or contradict local concerns;	Policy-maker
EE - Regulatory Entities - process - Legislators - national	Belgium				Sets overall policies for issue areas, authorizes and guides national agencies, determines authority of sub-national and local governments, decides parameters for participation;	Policy-maker
EE - Regulatory Entities - process - Legislators - sub-national 1	Flanders				Clarify driving forces of EQL programme;	Policy-maker
EE - Regulatory Entities - process - Legislators - sub-national 2	Province West Flanders				Clarify role;	Policy-maker
EE - Regulatory Entities - process - Legislators - sub-national 2	Province Antwerp				Clarify role;	Policy-maker
EE - Regulatory Entities - process - Legislators - local	Mechelen City council				Clarify role - set local policy, essential level enabling/ restricting citizen participation.;	Policy-maker
EE - Regulatory Entities - process - Legislators - local	Hooglede Municipal Council			political side more open than administration		0
EE - Regulatory Entities - process - Executive/ Administration - national	National ministries and agencies				Drafts national policies and regulations, implements national policies and directives, collect national level data, prepare technical reports influential for political agendas;	Policy-maker
EE - Regulatory Entities - process - Executive/Administration - sub-national 1	Flanders, LNE Department Quality of Life programme				Implements regional policies, including spatial planning and regional infrastructure;	Policy-maker
- Regulatory Entities - process -	Other Regional level agencies				Implements regional policies, including spatial planning and regional infrastructure;	Policy-maker
EE - Regulatory Entities - process - Executive/ Administration - sub-	Provincial administration - West Flanders				Implements regional policies, including spatial planning and regional infrastructure;	Policy-maker

national 2						
EE - Regulatory Entities - process - Executive/ Administration - sub- national 2	Provincial administrations Antwerp				Implements regional policies, including spatial planning and regional infrastructure;	Policy-maker
EE - Regulatory Entities - process - Executive/ Administration - local	Mechelen City administration			existing contact in Mechelen, open to project	Drafts and implements local plans and strategies, oversees and provides local services;	Policy-maker
EE - Regulatory Entities - process - Executive/ Administration - local	Hooglede Municipal administration			rural contact harder- have less people working full-time on issues, Hooglede expressed interest (impression that mostly [environmental professionals] interacting with people are interested, but decisions taken at different level (political), much more reluctance	Drafts and implements local plans and strategies, oversees and provides local services;	Policy-maker
EE - Regulatory Entities - process - Executive/ Administration - local sub-divisions	Environmental Advisory Boards				nominated by invited organization, formally appointed;	Decision-maker
EE - Regulatory Entities - process - Auditors & oversight					monitor and control the implementation of policies, provide channels to raise and address issues with policy processes;	Policy-maker
EE - Regulatory Entities - project - Standardization bodies	GEOSS, OGC, COBWEB, INSPIRE				Defines technical parameters project has to comply with to fulfil commitments regarding data accessibility and compatibility (might involve two-way dialogue - project can engage to set standards);	Data Aggregator
EE - Regulatory Entities - project - Donors - Funding Authority	EC				Defines framework objectives as part of calls for proposals, approves project contents and shapes objectives (boundary condition for user-based design). As 'owner' of policy able to (re-)negotiate meanings;	Policy-maker
EE - Regulatory Entities - project - Donors - Executive agencies	EASME				Implements regulation on behalf of the funding authority, monitors compliance and acts as enforcer of externally negotiated meaning (boundary condition for user-based design);	0
EE - Regulatory Entities - project - Hosting Organizations/ Statutory Agencies	VITO				legal counterpart of funding authority, sets operational parameters (e.g. financial rules, employment) for project teams; determines resource availability, including extra staff support, communication channels, infrastructure;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Enabling Environment - Allies & Umbrella Movements							
EE - Allies & Umbrella Movements - Endorsing organisations - local	BBL network						; Citizen
EE - Allies & Umbrella Movements - Endorsing organisations - local	Major employers in Antwerp and Brussels (Commuting)						not yet; 0
EE - Allies & Umbrella Movements - Endorsing organisations - local	SDG advocacies(policy initiatives (urban goal)						not yet; 0
EE - Allies & Umbrella Movements - Endorsing organisations - regional							; Citizen
EE - Allies & Umbrella Movements - Endorsing organisations - global							; Citizen
EE - Allies & Umbrella Movements - Local Allies	LNE Action OASIS			x		A possible initiative on green oasis in cities that we could couple with (not yet active)	; Citizen
EE - Allies & Umbrella Movements - Local Allies	Volunteer heat mapping in Mechelen https://klimaatneutraal.mechelen.be/doe-mee-als-vrijwilliger-aan-de-warmteluchtfoto-van-mechelen			x		The city of Roesale wants to start a CO on heat stress, VITO is contacted, possibility for a back-up pilot?	; 0
EE - Allies & Umbrella Movements - Regional Allies	Schelde commission						Check for connection in environmental aspects; Citizen
EE - Allies & Umbrella Movements - Umbrella Movements - Citizen Science							; Citizen
EE - Allies & Umbrella Movements - Umbrella Movements - professional association							; Citizen
EE - Allies & Umbrella Movements - Umbrella Movements - issue related movements							; Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

- Change resistance						their practice;	maker
EE - Opposition & Critics - Citizen science sceptics						Groups concerned about the data/information quality of citizen collected data;	Citizen
Market Forces - Shareholders and Investors							
MF - Shareholders and Investors - Public Funder	LNE as long-term investor					Financing projects under a national or local political mandate;	Decision-maker
MF - Shareholders and Investors - Private Donors						Financing projects according to specific values/convictions;	Citizen
MF - Shareholders and investors - Sponsors						Financing project in exchange for visibility;	Citizen
MF - Shareholders and investors - Joint Venture						Investment in expectation of commercial success;	Data Aggregator
MF - Shareholders and investors - Lenders						Provide credit in expectation of repayment;	0
MF - Shareholders and investors - Shareholders						Provide liquidity in expectation of future profits;	Citizen
MF - Shareholders and investors - In-kind Donors Hardware/Software						Restricts design options;	Data Aggregator
Market Forces - Suppliers							
MF - Suppliers - Technical Components						;	Data Aggregator
MF - Suppliers - Platform/Data Technology	Altran	x				;	Data Aggregator
MF - Suppliers - Platform/Data Technology	Gavagai	x				;	Data Aggregator
MF - Suppliers - Apps and Services	Akvo	x				;	Data Aggregator
MF - Suppliers - Apps and Services	Tygron	x				;	Data Aggregator

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

nical roles							tor
IS - Internal Stakeholders - CO Team	Dedicated staff partner organizations and volunteer contributors with an extended/formalized role during the co-design process	x	x	x		Which team members contribute under project assignments, which as long-term investments for their employers? Will particularly enthusiastic pioneer Community Members be recruited in informal roles to increase ownership, e.g. to produce initial contents in an organized manner?;	0

3.1.3 Key Observations

Due to the fragmentation of the landscape, increasing the density of urban areas is an urgent task in Flanders. This development will likely increase the importance and criticality EQL initiatives. However, the case currently seems to frame “environment” in terms of a person’s immediate surroundings. This reflects the specific goals of the LNE EQL programme, but might not match the concerns of the citizens.

Overall, the analysis of the political culture suggests that individual citizens with specific grievances who are not part of ‘organized politics’ need to mobilize significant resources to be heard. This creates a dichotomy between powerful ‘organized’ actors supported by relatively passive citizens (voters), and community action groups addressing severe grievances not sufficiently addressed in the system in the ‘court of public opinion’. Currently, the planning for the Demo Case focuses on the actors of the ‘organized’ political process (EABs, city departments), which might be a deterrent for citizens with the highest proclivity for activism and engagement.

The nature of the political culture, described as a relatively ‘closed’ system lead by political actors, not administrations, will require specific attention in the co-design process. Experienced political advisors will be needed to identify critical points that carry political connotations and might undermine the CO efforts early on.

3.2 Preparing for Climate Change – Catalonia, Spain

3.2.1 Context Mapping⁶

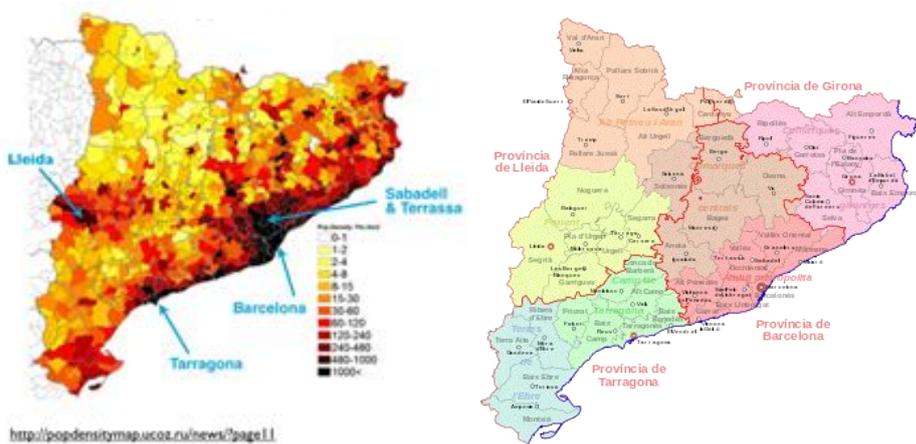
The Spanish Demo Case targets the Autonomous Community of Catalonia, which corresponds to a federal state but with extended autonomy. Technically, there is no reason to limit the project to Catalonia, a predecessor project was national and all materials are in Spanish. The choice of the project area reflects the best set and configuration of relevant actors, and was thus actively matched to the ‘organizing frame for action’.

Political Context: The region has five relevant government levels – EU, national level, the autonomous community of Catalonia, provinces, and municipalities. Catalonia has jurisdiction over the environment and biodiversity, and administers natural reserves and protected areas. The Spanish regions also have full competencies in spatial planning. Power in the government hierarchy is linked to resources, which in turn depends on population density. Combined with a general political culture that favours autonomy over centralized power, provinces and municipalities with sufficient economic resources will seek (and tend to gain) higher autonomy.

Fig 12 Target Area of the Spanish Demo Case



Fig 13 Population Density in Catalonia and Boundaries of the Barcelona Metropolitan Area (AMB)



⁶ For local summaries of statistical data and reports quoted, as well as additional background information see OECD country page (<http://www.oecd.org/spain/>), OECD Better Life and Regional Wellbeing Indices (<http://www.oecdbetterlifeindex.org/countries/spain/> and <https://www.oecdregionalwellbeing.org/ES51.html>), World Bank ‘Doing Business’ Analysis (<http://www.doingbusiness.org/data/exploreeconomies/belgium>), International Telecommunications Union (<https://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>), and the European (<http://ec.europa.eu/eurostat>) and Catalanian Statistical Services (<http://www.idescat.cat/en/>)

Power in the government hierarchy is determined by resource allocation, which is linked to population density. Combined with a general culture that favours autonomy, this means that provinces and municipalities with sufficient economic resources will generally seek (and tend to gain) higher autonomy. In Catalonia, this is particularly evident in the province of Barcelona, which features the Barcelona Metropolitan Area (AMB) as an additional administrative entity which carries decisive political power (see Fig 13). The interview indicates that frequent government reshuffles make it difficult to build stable relationships at the regional political top level. The engagement process should, therefore, target the Generalitat Administration level (see Fig 14).

Fig 14 Structure of the Catalan regional government

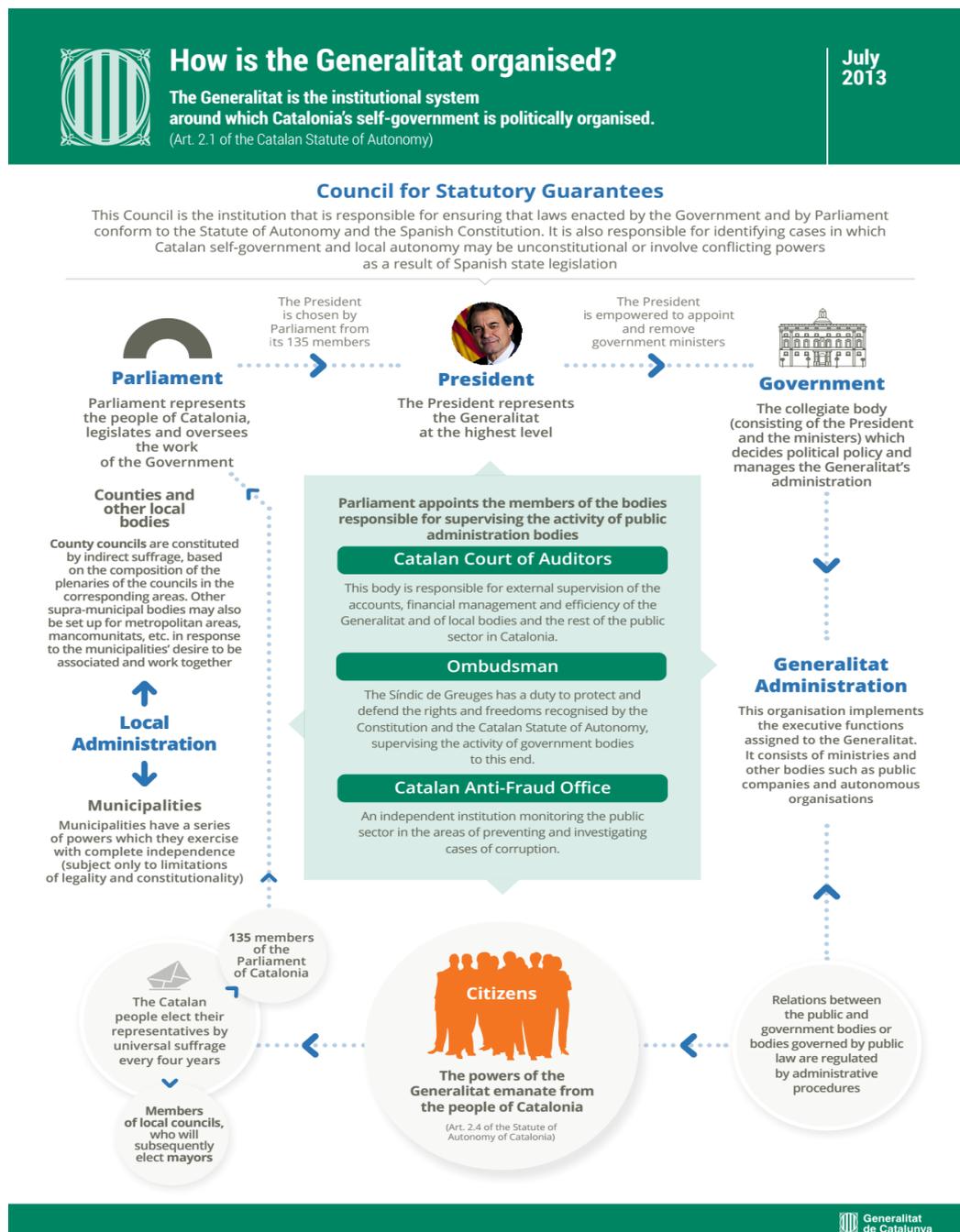
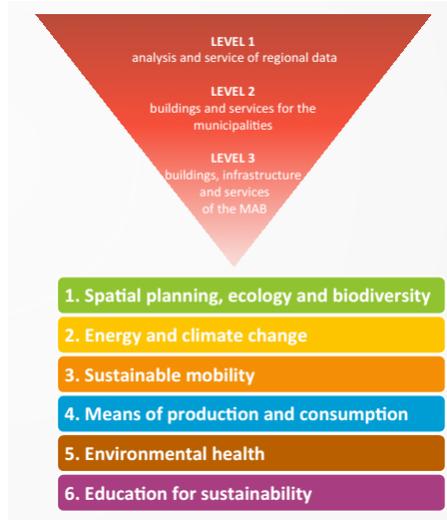


Fig 15 Catalanian Climate Change Response framework



Regarding competencies for climate change and biodiversity policies in Catalonia, activities are concentrated at the regional level and in the city of Barcelona. Law 31/2010 created a frame for climate change adaptation planning, which is currently being implemented in the AMB. The assessment frame includes biodiversity, environmental health and education for sustainability, offering possible connection points for phenological data (see Fig 15). A climate change mitigation strategy, climate change adaptation plan, and an energy and climate plan have been developed; a sub-national law on climate change as framed by COP 21 is in development. Activities by the Catalan Office for Climate Change include a Voluntary Agreement Programme for CO₂ emission reduction in municipalities.



In terms of nature conservation, the 2007 national Nature Conservation Act introduced ecological networks into spatial planning, which has been fully implemented in the spatial planning process in Catalonia. The related guidelines integrate mapping of protected areas, connecting areas, and agricultural value areas into spatial plans, which might provide a opportunities for the introduction of phenological observations into the political conversation (see Fig 16).

Fig 16 Visualization of protected areas, agricultural value areas and connectivity areas in a 2006 Spanish spatial plan

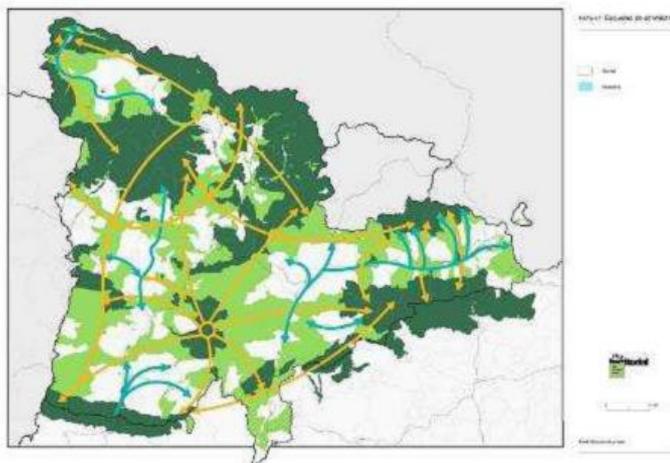
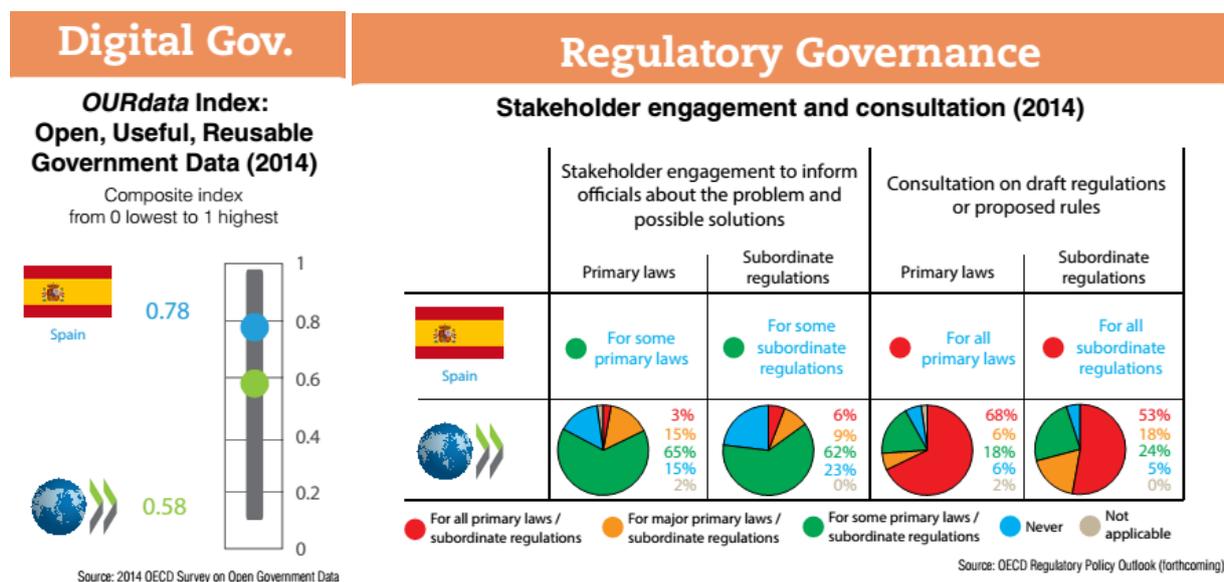


Figure 3. Extract from the L'Alt Pirineu Aran spatial plan (2006). The top map shows protected areas (dark green), connectivity areas (light green) and agriculture value areas (yellow) in the district. The bottom map outlines the desired connectivity. The Northern border is with France and Andorra, the West with the Aragon region, and the South and Southeast with other regional districts

In terms of political culture and participation, trust in central institutions is generally low, a legacy of the relatively recent dictatorship. The Euro-Crisis eroded confidence further (-16%). Both reflecting and contradicting this mistrust, Spanish provision of government data far above OECD average, and consultation on all draft regulations is mandatory (see Fig 17). Catalonia has a strong independence movement, which has been further strengthened by the Euro-crisis and resulting austerity measures and reshaping of the political landscape in Spain.

Fig 17 Baseline Indicators Transparency and Participation in Regulation, Spain



Environmental Context: The case area is located in a transition area between Mediterranean and Europe. It features a wide variety in landscapes and extensive protected areas. Climate change is visible, in phenomena such as the changing length and intensity of seasons including more extreme heat waves, but the real-life implications for most people remain unclear. The AMB expert group on climate change operates with estimates of average summer temperature in Catalonia rising between 0.4°C and 3.7°C by 2040, and between 3.6°C and 7.8°C by 2100, with potentially significant implications for the boundaries of vegetation zones including for agricultural production as well as the habitats in protected areas. In terms of large-scale connectivity, Catalonia is part of the Mediterranean corridor, one of the main routes for bird migration to Africa.

Social/Cultural Context: Local identity in Catalonia is strong, rooted in historical regional competition and reaffirmed by a strong Catalan language movement. However, for the issues under investigation, identity politics are deemed of little importance. Most members of the population speak both Catalan and Spanish. The biggest social division to be considered is that between the Barcelona metropolitan area and the rural hinterland. Barcelonans are described to consider the country-side their ‘playground’, as a location for leisure activities, and sometimes second homes for better-off citizens. While primary destinations for local getaways are the beaches in summer, and skiing areas in winter, the market for local green “inland” tourism is growing, especially in Barcelona province.

In terms of attitudes relevant to the case, the 2014 Eurobarometer Poll “Attitudes of European citizens towards the environment”, found that in

- 96% of the Spanish population personally believes that protecting the environment is important
- Only 23% of Spanish respondents named loss of species and ecosystems as addressed in the CO₂ as major concern, compared to 58% for air pollution and 57% for water pollution
- 83% agree that environmental issues have a direct impact on their daily lives and 60% feel that citizens themselves are not doing enough to protect the environment

- 56% feel well informed about environmental matters, 28% say they lack information on depletion of natural resources and loss of species/habitats respectively
- Sources of environmental information are: 67% TV, 37% social media/internet, 29% newspapers. In terms of trusted sources, 41% believe in the reliability of scientists, 32% in environmental protection associations, 25% in TV documentaries

Technical Context: Connectivity in urban areas is excellent, 76% of households have broadband coverage, though there are some minor coverage issues in rural areas. Dominating social networks are international leaders such as Facebook and Twitter, but the region does have some local (Catalan-language) TV stations as potential communication channel.

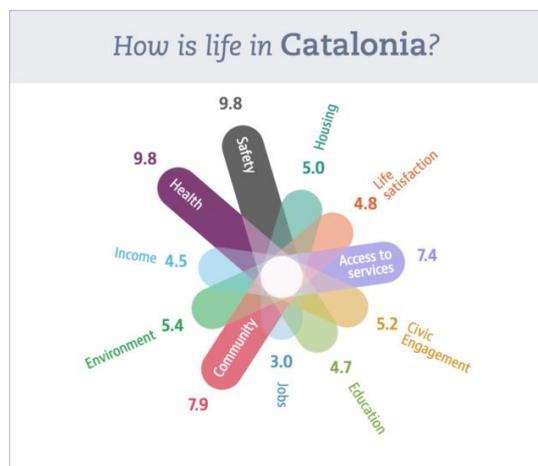
Fig 18 ITU Access and Usage Indicators 2016, Spain

Economy	Fixed-telephone subscriptions per 100 inhabitants		Mobile-cellular subscriptions per 100 inhabitants		International Internet bandwidth Bit/s per Internet user		Percentage of households with computer		Percentage of households with Internet	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
143 Spain	41.2	40.6 ³⁴	107.9	107.9	92'025	105'006	74.0	75.9	74.4	78.7

Economy	Percentage of individuals using the Internet		Fixed-broadband subscriptions per 100 inhabitants		Active mobile broadband subscriptions per 100 inhabitants	
	2014	2015	2014	2015	2014	2015
143 Spain	76.2 ⁶⁶	78.7 ⁵³	27.6	28.3 ²⁶	77.3	82.1

Economic Context: Catalonia is highly industrialized and one of its wealthiest regions. It is Spain’s biggest regional economy in terms of contribution to GDP, but also the most indebted. It is a primary European tourist destination, with around 8 million annual visitors in the Barcelona area alone, and due to the location at the Mediterranean coast a highly attractive location to work. The region suffers, however, from high unemployment of over 20%, and high political and economic uncertainty. According to the OECD regional well-being survey, the ranking of Catalonia in terms of income and access to services is high compared to the rest of Spain, but it is one of the lowest ranked regions for life satisfaction, environmental quality, community support, and civil engagement.

Fig 19 Regional Well-Being Indicators Catalonia



3.2.2 Stakeholder Inventory

Table 3 Demo Case Stakeholder Inventory, Spain

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
Core Stakeholders - Community Members (Recruitment Targets)							
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Meteo.cat observers (esp. Subgroup of ~50 Fenocat observers)	x			Meteo.cat observers (esp. Subgroup of ~50 Fenocat observers)	Specifically XOM (Xarxa de observadors meteorologies);	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Local tourists (green inland tourism)		x		Local tourists (green inland tourism)	Increasing interest, potential target group of nature and climate-conscious tourists from AMB;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	People seeing climate change seeking a platform to create shared/collective knowledge		x		People seeing climate change seeking a platform to create shared/ collective knowledge	long local tradition of private data collection, and positive attitudes to collective action at the community level;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - children	Schools	x			Schools	Supra school org (dept educació / AMPAs); Positive expectations influence future generations by helping children understand the importance of environmental health; negative expectations: might be perceived as teaching children in a biased way.; Likely to be supported by teachers, parents and children themselves, possibly resistance in education department;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	Naturalist Association members (ICHN)		x		Naturalist Association members (ICHN)	Channel to reach like-minded citizens;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	Hikers Association		x		Hikers Association	What share of hikers is organized? Channel or target group?; positive expectations: likely interest in sharing personal passion, negative expectation: frustration if opinions are not taken into account Might depend on reward systems, willing to invest leisure time unclear	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type	
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	Ornithological societies	x			Ornithological societies	Issue linkage through bird migration routes, bird watchers traditionally group with high aptitude for 'hunting down' species with precise documentation; positive expectations: likely interest in sharing personal passion, negative expectation: frustration if opinions are not taken into account Might depend on reward systems, willing to invest leisure time unclear	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	Butterfly societies	x			Butterfly societies	; positive expectations: likely interest in sharing personal passion, negative expectation: frustration if opinions are not taken into account Might depend on reward systems, willing to invest leisure time unclear	Citizen
CS - CO Members (Recruitment targets) - Citizen Tagert Groups - Community Action groups	Energy and climate "citizen" group in Barcelona city					Mentioned in AMB adaptation presentation, might be local agenda setters;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - major local presence						Corporate partners not yet systematically considered;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - leading employers						Corporate partners not yet systematically considered, Barcelona area industrialized, potential resistance from polluting industries;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Locals involved in local green tourism		x		Locals involved in local green tourism- business owners	Explore, corporate partners not yet systematically considered;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Farmers (esp. fruit trees - via farmer syndicates/cooperatives	x			Farmers unions (esp. fruit trees - via farmer syndicates/cooperatives	Existing studies found on impact of climate change on truffle production, clarify structure and value of agricultural production;	0

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
CS - CO Members (Recruitment targets) - Business target group - "corporate citizens"					Corporate partners not yet systematically considered;	Citizen
CS - CO Members (Recruitment targets) - Policy target groups - decision-makers	Contact persons Direccios Generales (several)	x		Contact persons Direccións Generales (several)	Technical personnel of the public sector;	Decision-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration	2014-2020 Metropolitan Programme of Education for Sustainability, Ana Romero Càlix aromero@amb.cat Head of Section on Sustainability and Environmental Education, Environmental Services Direction, Environment Area of BMA				According to organizer, 40% of the local offer in environmental education resources in the metropolitan area organized through programme, 33,000 participants, free offer, Activities tailored to recipients: tours, talks, workshops for schools, municipalities, businesses, etc.. Concerns about internal coordination and resources, as well as about communication with the public (see details in slides)==> could be member if platform contributes to better networking and coordination of effort;	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration	Managers natural reserves		x	Managers natural reserves	; Positive expectations: improve regulations to adapt to climate change and general, platform tool to attract more visitors to the park, potential negative expectation: possible damage caused by humans becoming more intrusive Potential hindering 1) lack of time and resources	0
CS - CO Members (Recruitment targets) - Policy target groups - administration	Rural agents		x	Rural agents	;	0
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators	AMB Climate Change Observatory (Expert Group on Climate Change in Catalonia)				linked directly to the Intergovernmental Panel on Climate Change (IPCC);	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators	Environmental working groups political parties			<i>OUT- no relevance</i>	<i>Trust in government and political parties one of the lowest in Europe. Clarify if lack of trust translates into low influence on political agenda.;</i>	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type	
CS - CO Members (Recruitment targets) - Data Aggregators	Gavagai				GT2.0 partner	Clarify if Gavagai staff will be involved in the long term;	Data Aggregator
CS - CO Members (Recruitment targets) - Data Aggregators	Creaf	x				Clarify if CREAF staff will be involved in the long term;	Data Aggregator
CS - CO Members (Recruitment targets) - Data Aggregators	Starlab	x				Clarify if Starlab staff will be involved in the long term;	Data Aggregator
CS - CO Members (Recruitment targets) - Data Aggregators	Institut Cartografic y Geologic de Catalunya			x		Official data collector;	Policy-maker
CS - CO Members (Recruitment targets) - Data Aggregators	Agencia Catalana de l'Aigua			x		Official data collector;	Policy-maker
CS - CO Members (Recruitment targets) - Data Aggregators	Centre tecnologic forestal de Catalunya (Solsona)			x		Conducts research on the impacts of climate change on the suitable areas for agricultural production;	Scientist
CS - CO Members (Recruitment targets) - Data Aggregators	Catalan Statistics office (IDESCAT)			x		Positive expectations - generation of additional data and sharing of official data; potential Negative expectations concerns about the quality and validity of data to be used as KPIs for climate change.; higher levels of management in the Catalan Statistics office expected to be resistant to citizen involvement; will likely depend on leadership support and/or policy supporting this initiative.. Might raise concerns about data quality and validity.	Policy-maker
CS - CO Members (Recruitment targets) - Scientists						; Potential positive expectations increase public awareness of the impacts on climate change on natural species. Unlikely to oppose citizen involvement likely motivated by perception that the impacts of climate change (i.e. late springs) are already visible, barriers to membership lack of time and location in urban areas, lack of knowledge about some species and problems in the data collecting device i.e. memory capacity limitations of mobile phone.	Scientist

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
Core Stakeholders - Experts & Advisors						
CS - Experts & Advisors - Design-Phase - experts citizen science	Coordinators Meteocat citizen network	x			help ensure effective media design;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	Expert list Fenocat project	x			informally 'peer-review' the scientific elements of the design and flag potential issues, ensure scientific veracity, credibility and epistemic authority;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	Spanish Meteorological service fenology department	x			;	Policy-maker
CS - Experts & Advisors - Design-Phase - issue experts	Pan-European Phenology DB			x	Pan-European Phenology DB	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	Catalan Institute of Natural History	x			Catalan Institute of Natural History	0
CS - Experts & Advisors - Design-Phase - issue experts	EEA/EC E. Ivits, M. Cherlet, G. Tóth, S. Sommer, W. Mehl, J. Vogt, F. Micale, EC Joint Research Centre, Land Management and Natural Hazards Unit				Authors "Combining satellite derived phenology with climate data for climate change impact assessment";	Policy-maker
CS - Experts & Advisors - Design-Phase - technology experts	Altran	x			;	Citizen
CS - Experts & Advisors - Design-Phase - technology experts	Gavagai				Changed to community member really?;	0
CS - Experts & Advisors - Design-Phase - technology experts					;	0
CS - Expert Advisors - Design phase - reality checkers citizen observatories	Leaders other GT2.0 Demo Cases	x			GT2.0 partner	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
CS - Experts & Advisors - Design phase - reality checkers local politics						scan for experienced political operators, relevant to Spanish DC due to 'agenda setting' objective of the platform and likely low willingness by regional political actors to engage with lower levels;	Policy-maker
CS - Experts & Advisors - Long-term - local policy	DG experts	x				;	Policy-maker
CS - Experts & Advisors - Long-term - science	IC3 Institut Catala de ciencias climáticas?					;	Data Aggregator
CS - Experts & Advisors - Long-term - policy linkages	Catalan Office of Climate Change		x			improve policy coordination, ensure "fit" of data with regional/national systems, explore new sources for data fusion - policy linkage relevant to Spanish DC due to 'agenda setting' objective of the platform;	0
CS - Experts & Advisors - Long-term - policy linkages						improve policy coordination, ensure "fit" of data with regional/national systems, explore new sources for data fusion - policy linkage relevant to Spanish DC due to 'agenda setting' objective of the platform;	0
CS - Experts & Advisors - Long-term - policy linkages	SMC (Meteorological Service)	x				improve policy coordination, ensure "fit" of data with regional/national systems, explore new sources for data fusion - policy linkage relevant to Spanish DC due to 'agenda setting' objective of the platform;	Policy-maker
Enabling Environment - Regulatory Entities							
EE - Regulatory Entities - political process - Supra-national bodies	EU					Issues binding legislation (directives), offers legal channels that might support or contradict local concerns;	Policy-maker
EE - Regulatory Entities - political process - Legislators - national	National Parliaments					Sets overall policies for issue areas, authorizes and guides national agencies, determines authority of sub-national and local governments, decides parameters for participation;	Policy-maker

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
EE - Regulatory Entities - political process - Legislators - sub-national 1	Sub-national Parliaments/Councils					Clarify for case region;	Policy-maker
EE - Regulatory Entities - political process - Legislators - sub-national 2	Sub-national Parliaments/Councils					Clarify for case region;	Policy-maker
EE - Regulatory Entities - political process - Legislators - local	Local Councils					Essential level enabling/ restricting citizen participation.;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	SMC (Meteorological Service)					;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1	Generalitat - Dept Territory & Sustainability					Key actor for regional policy agenda, jurisdiction over environment, administers all protected areas (including one national park)	0
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1	Direccios Generales (several)					Explore role in a) shaping policy and b) implementing policies;	0
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1	Office climate change strategy					Promotes the establishment of climate change strategies, plans and projects in Catalonia, owns voluntary carbon reduction scheme;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 2	Province of Barcelona					Most powerful province, rest of Catalonia provinces less relevant, biodiversity usually Catalan level, Barcelona got their own;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
EE - Regulatory Entities - political process - Executive/Administration - sub-national 3	Barcelona metropolitan area AMB					Operational power in municipalities (if they are resourceful enough), AMB additional level with separate competencies, is developing a climate change adaptation strategy, fact finding workshop in November 2015, completed assessment, has 17 documents as input for planning, on focus area "climate forecasts at the regional level for the Barcelona Metropolitan Area", powerful actor, likely opinion leader on local climate policies;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - local	(some) municipalities					Which ones should be involved - sufficient resources? Ecologically most relevant? Tourism potential?;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	Management protected areas and natural parks					;	Decision-maker
EE - Regulatory Entities - political process - Other regulatory entities						;	Policy-maker
EE - Regulatory Entities - political process – Auditors & oversight						;	Policy-maker
EE - Regulatory Entities - political process – Auditors & oversight	Government Controllers, supervisory organs and watchdog entities					Clarify for case region;	Policy-maker
EE - Regulatory Entities - project - Standardization bodies	GEOSS, OGC, COBWEB, INSPIRE					Defines technical parameters project has to comply with to fulfil commitments regarding data accessibility and compatibility (might involve two-way dialogue - project can engage to set standards)	0

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
EE - Regulatory Entities - project - Donors - Funding Authority	EC					Defines framework objectives as part of calls for proposals, approves project contents and shapes objectives (boundary condition for user-based design). As 'owner' of policy able to (re-)negotiate meanings	Policy-maker
EE - Regulatory Entities - project - Donors - Executive agencies	EASME					Implements regulation on behalf of the funding authority, monitors compliance and acts as enforcer of externally negotiated meaning (boundary condition for user-based design)	Decision-maker
EE - Regulatory Entities - project - Hosting Organizations/ Statutory Agencies	Starlab/Altran					Legal counterpart of funding authority, sets operational parameters (e.g. financial rules, employment) for project teams; determines resource availability, including extra staff support, communication channels, infrastructure	Decision-maker
Enabling Environment - Allies & Umbrella Movements							
EE - Allies & Umbrella Networks - Endorsing organisations - local						;	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - regional						;	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - global						Climate change adaptation major global issue, explore possible endorsements and alliances;	Citizen
EE - Allies & Umbrella Networks - Local Allies	Networks of rural tourism businesses					;	0
EE - Allies & Umbrella Networks - Local Allies	La caixa del temps initiative (+other educational initiatives?)					;	Citizen
EE - Allies & Umbrella Networks - Regional Allies	National/European/International Climate Change adaptation networks					;	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
EE - Allies & Umbrella Networks - Umbrella Movements - Citizen Science	Ornithological societies – International, migratory birds					;	0
EE - Allies & Umbrella Networks - Umbrella Movements - Citizen Science	Butterfly societies					;	0
EE - Allies & Umbrella Networks - Umbrella Movements - Citizen Science						;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - professional association						;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements	IPCC					;	0
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements	New Urban Agenda				Supported by Minister of Territory	Climate change adaptation major global issue, explore possible endorsements and alliances;	0
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements	Covenant of Mayors					AMB made city level commitment;	0
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements	Mayors adapt					AMB made city level commitment;	0
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements	New covenant of Mayors for climate and energy					AMB made city level commitment;	Citizen
Enabling Environment - Media & The Public							
EE - Media & the Public - Relevant Societal Groups	Farmers					;	Citizen
EE - Media & the Public - Relevant Societal Groups						;	Citizen
EE - Media & the Public - Neutral multipliers						;	Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
EE - Media & the Public - Communication channels to citizens	Local Tourist websites etc. (?)					;	0
EE - Media & the Public - Communication channels to citizens	Information centres of natural reserves/conservancies					;	0
EE - Media & the Public - Communication channels to citizens						;	Citizen
EE - Media & the Public - Formal Media - newspapers						;	0
EE - Media & the Public - Formal Media - TV	Local television channels					Catalonia specific and Catalan-language;	0
EE - Media & the Public - Formal Media - Radio						;	0
EE - Media & the Public - Formal Media - Online						;	0
EE - Media & the Public - Social media						;	Citizen
Enabling Environment - Opposition & Critics							
EE - Opposition & Critics - Low resource targete groups	Natural resource managers					;	Citizen
EE - Opposition & Critics - Vested Interests	"methodology owners" and experts who might want to be asked to play role					;	Policy-maker

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
EE - Opposition & Critics - Antagonists						;	Citizen
EE - Opposition & Critics - Commercial competitors						;	Data Aggregator
EE - Opposition & Critics - Resource competitors	Competing platforms projects?					;	Citizen
EE - Opposition & Critics - Change resistance	General low-priority-attitude towards climate change adaptation					;	Policy-maker
EE - Opposition & Critics - Citizen science sceptics						;	Citizen
Market Forces - Shareholders and Investors							
MF - Shareholders and investors - Public Funder						Ministries, departments or agencies - Financing projects under a national or local political mandate;	Decision-maker
MF - Shareholders and investors - Private Donors						Foundations, larger NGOs - Financing projects according to specific values/convictions;	Citizen
MF - Shareholders and investors - Sponsors						Companies - Financing project in exchange for visibility;	Citizen
MF - Shareholders and investors - Joint Venture						Partner companies - Investment in expectation of commercial success;	Data Aggregator
MF - Shareholders and investors - Lenders						Banks - Provide credit in expectation of repayment;	0
MF - Shareholders and investors - Shareholders						Crowdsourcing - Provide liquidity in expectation of future profits;	Citizen
MF - Shareholders and investors - In-kind Donors Hardware/Software						e.g. companies/organizations hosting platforms for free - restricts design options;	Data Aggregator

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
Market Forces - Suppliers							
MF - Suppliers - Technical Components						;	Data Aggregator
MF - Suppliers - Platform/Data Technology	Starlab					;	Data Aggregator
MF - Suppliers - Apps and Services	Altran					;	0
MF - Suppliers - Apps and Services	Gavagai					;	Data Aggregator
MF - Suppliers - Commercial data providers						;	Data Aggregator
MF - Suppliers - Academic knowledge providers						;	Data Aggregator
Market Forces - Buyers							
MF - (Prospective) Customers - Public clients						Buyer of technology components or services;	0
MF - (Prospective) Customers - Users						Subscribers to paid services;	0
MF - (Prospective) Customers - Marketing agencies						Buyers of 'access' to community for ads;	0
Internal Stakeholders							
IS - Internal Stakeholders - Project Management	GT2.0 PMT					Are interests coherent? Do developments in the co-design process match project and partner objectives? Are there conflicts with the transition to a post-project organization?;	0
IS - Internal Stakeholders - Project Staff, consultants and subcontractors	Dedicated project staff all partners GT2.0 consortium					Are the skills and experiences of all consortium partners known and optimally used for the DC?;	0
IS - Internal Stakeholders - Advisory Bodies	Advisory Committee and Steering Committee					;	0
IS - Internal Stakeholders - Host organizations - support staff	Support staff all partners GT2.0 consortium					;	0
IS - Internal Stakeholders - CO Leadership	Starlab					Do the interests of DC leaders align with the trajectory of the co-design process?;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
IS - Internal Stakeholders - CO Team - community organizers					Initiation of the CO Community will require 1-2 staff of partner organizations or activists identified in the first interaction moment to do the "leg work" involved in recruiting and mobilizing Core Stakeholders;	0
IS - Internal Stakeholders - CO Team - commercialization leaders					Lead partner to ensure systematic consideration of the DC potential for future upscaling and transition to a sustainable operational model? Note potential conflicts of interests with a community driven co-design process. Ensure balance if intended business model will face concentrated buyer power.;	Data Aggregator
IS - Internal Stakeholders - CO Team - technical roles	Platform administrators		x		Early appointment relevant for training and feedback in technical design phase;	Data Aggregator
IS - Internal Stakeholders - CO Team	Dedicated staff partner organizations and volunteer contributors with an extended/formalized role during the co-design process	x	x	x	Which team members contribute under project assignments, which as long-term investments for their employers? Will particularly enthusiastic pioneer Community Members be recruited in informal roles to increase ownership, e.g. to produce initial contents in an organized manner?;	0

3.2.3 Key observations

The project area of the Spanish Demo Case matches the problem area in terms of political frames of reference. While climate change is a global phenomenon, the relevant policies are set at the regional scale, as is the management of natural reserves. The social scale for organizing citizen action requires, however, some clarification. The Demo Case aims to provide data that helps the community to better understand the local impact of climate change, and places climate change adaptation higher on the political agenda.

The baseline analysis documents a clear idea of planned phenological data collection activities and (naturalist) target groups. But it is less clear if the type of data collection that will attract citizens is also best suited to track climate change, or how the phenological insights will contribute to the ongoing societal and political conversation about climate change. An extended mapping of local climate change activists is recommended. For example, the Barcelona Metropolitan Area is active in all major international networks for urban climate change adaptation, and is actively drafting climate change policies, yet was not discussed as a relevant stakeholder in the interviews.

In broader terms, the baseline analysis showed perceptions of a hierarchically divided political culture, to the point that it was suggested that 'local and state people will never work together; they can't be in the same room'. This suggests that the Demo Case engagement strategy might have to include carefully crafted mobilization activities (Abers 2007).

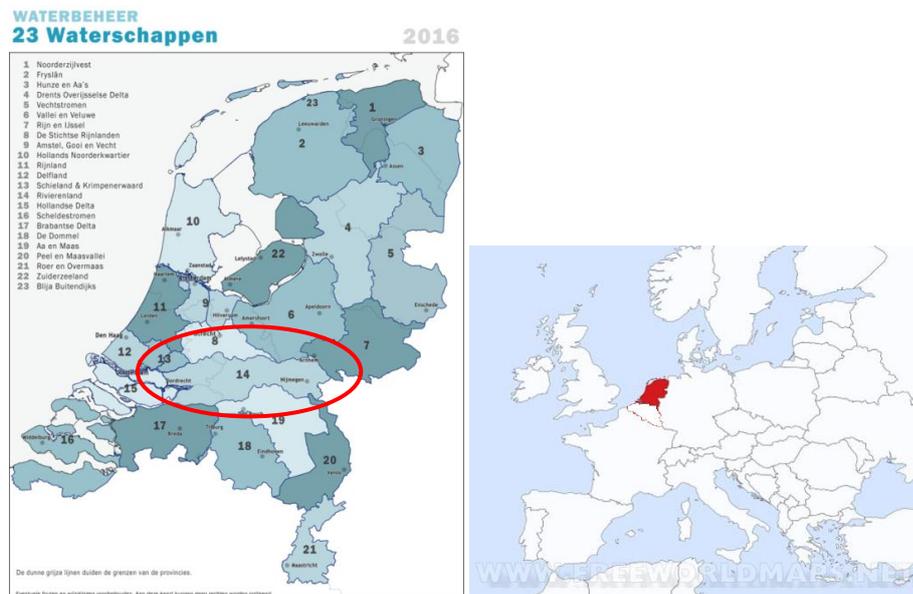
Furthermore, while not immediately relevant to the issue of climate change and biodiversity, an extended political crisis in Spain, and the resulting popular mood regarding independence and political institutions in general might influence the willingness of political actors to collaborate. Trust in government institutions is generally low in Spain, and has been further eroded over the past few years. As effective participation and collaborative resource management requires a certain level of trust, this has to be considered in the framing of messages and activities.

3.3 Water availability in Climate-Proof Planning – Rivierenland, Netherlands

3.3.1 Context Mapping⁷

The Dutch Demo Case targets the Rivierenland, one of 23 Dutch water management jurisdictions administered by a Water Board (WB). The region was chosen because the Demo Case leaders perceive the WB Rivierenland as the leading Dutch WB in terms of process innovation and data driven management. The WB Rivierenland was an early adopter of advanced technologies in disaster management and is now one of the first WBs to experiment with new forms of participation and communication.

Fig 20 Target Area of the Dutch Demo Case



Political Context: The political structure in the Demo Case has four ‘regular’ political hierarchies – EU, national, provincial and municipal – with the Water Board areas as cross-jurisdictional units overlapping the provincial boundaries (see Fig 21). However, while the institutional structure is complex, the boundaries of water boards are in fact more visible in the physical landscape as other administrative jurisdictions, as their boundaries are usually delineated by dikes or water discharge areas.

The issue of “water in the streets” as investigated by the Demo Case does not sit easy with the institutional structure for water management in the Netherlands. The phenomenon used to be very rare, but climate-change related changing weather patterns and the extensive sealing of surfaces in urban development it is becoming more frequent and will remain frequent in the future. Technically, both storm water collection and planning urban features is under the authority of the municipalities, but the need to remove collected water requires effective collaboration between municipalities and water boards, but also between different water boards. In addition, as the issue involves an evolving systemic prob-

⁷ For local summaries of statistical data and reports quoted, as well as additional background information see OECD country page (<http://www.oecd.org/netherlands/>), OECD Better Life and Regional Wellbeing Indices (<http://www.oecdbetterlifeindex.org/countries/netherlands/> and <https://www.oecdregionalwellbeing.org/NL22.html>), World Bank ‘Doing Business’ Analysis (<http://www.doingbusiness.org/data/exploreconomies/netherlands>), International Telecommunications Union (<https://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>), and the European (<http://ec.europa.eu/eurostat>) and Dutch Statistical Services (<https://www.cbs.nl/en-gb/>)

lem, it also requires a systemic response, which involves perceptions of citizens and negotiations of responsibilities between different actors as much as legal definitions.

In the current system, the responsibilities for different aspects of water management are more or less clearly defined between the different layers of government. While Rijkswaterstaat is responsible for overall planning of the water management system, the water boards responsible for operation and management of the regional system, as well as for flood defences and waste water treatment, municipalities responsible for spatial planning and drainage systems, and the provinces responsible for integration of spatial planning and related policies (see Fig 22).

In practice, the responsibility of the various levels has shifted, handing more power and autonomy to the WBs, and reducing the supervisory role of provinces. For example, decisions with regard to water levels, construction and improvement of water management structures used to require prior provincial approval, but no longer do.

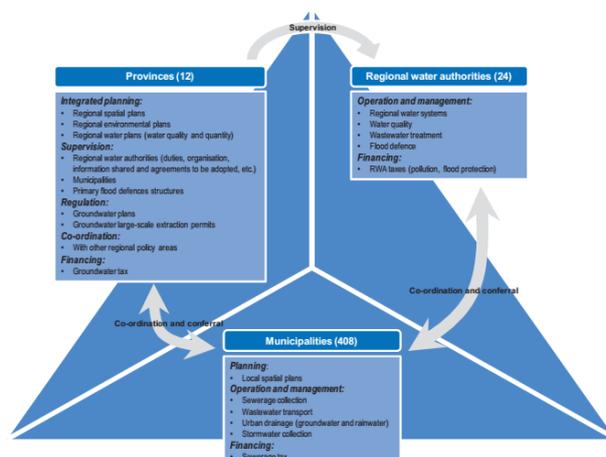
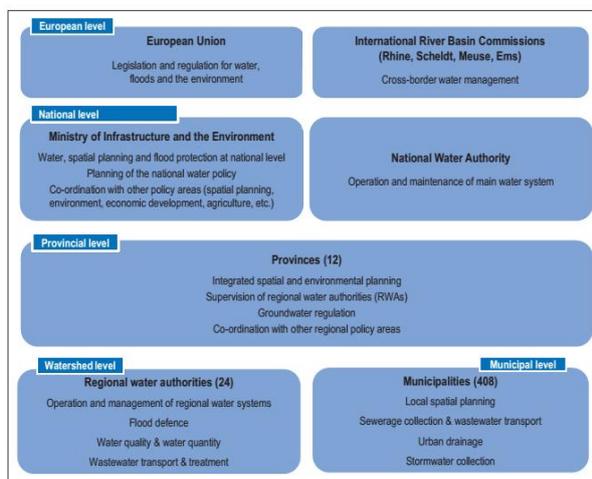
Most significantly, Water Boards also gained more autonomy over financial decisions; they not only raise their own taxes, but since enactment of the 2011 Administrative Agreement of Water Affairs again no longer require provincial approval of management plans and cost-related by-laws. Where provincial approval is still required, decision-makers tend to bow to the technical expertise of the WBs.

Fig 21 Dutch Provinces and Water Boards

Provinces (number of municipalities)	Regional Water Authorities
I. Groningen (23 municipalities)	1. Noorderzijvest
II. Drenthe (12 municipalities)	2. Fryslân
III. Friesland (27 municipalities)	3. Hunze en Aa's
IV. Overijssel (25 municipalities)	4. Reest en Wieden
V. Flevoland (6 municipalities)	5. Velt en Vecht
VI. Gelderland (56 municipalities)	6. Groot Salland
VII. Noord-Holland (53 municipalities)	7. Regge en Dinkel
VIII. Utrecht (26 municipalities)	8. Zuiderzeeland
IX. Zuid-Holland (67 municipalities)	9. Rijn en IJssel
X. Limburg (33 municipalities)	10. Vallei en Veluwe
XI. Noord-Brabant (67 municipalities)	11. Stichtse Rijnlanden
XII. Zeeland (13 municipalities)	12. Amstel, Gooi en Vecht
	13. Hollands Noorderkwartier
	14. Rijnland
	15. Deffland
	16. Schieland en de Krimpenerwaard
	17. Rivierenland
	18. Hollandse Delta
	19. Scheldestromen
	20. Brabantse Delta
	21. Dommel
	22. Aa en Maas
	23. Peel en Maasvallei
	24. Roer en Overmaas

WATER GOVERNANCE IN THE NETHERLANDS: FIT FOR THE FUTURE? © OECD 2014

Fig 22 Institutional layers and mutual dependencies of Water Management in the Netherlands

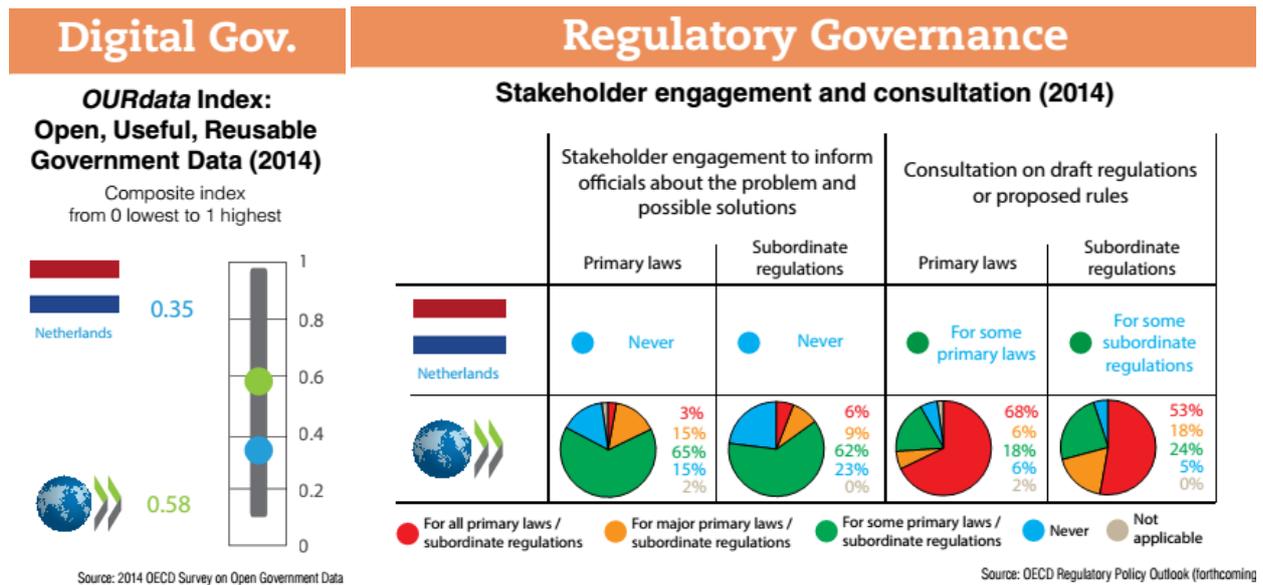


Source: OECD 2014

With regard participation in water management, presentation of plans to the public has been introduced in the 1970, in part as response to massive political protests connected to aspects of the Delta works. Since 2000, public consultation and communication with interest groups has been formalized as part of the planning process. However, the consultations usually take place in the form of public events in which people can voice opinions. The interviews suggest that participation in these events is usually limited to personally affected citizens and organized interests groups, most ordinary people are perceived to be mostly unaware of how the process works.

Participation in other policy areas including urban planning is less common. In terms of stakeholder information and participation, the Netherlands rank far below average of OECD countries for useful government data, as well as on consultation of stakeholders on policies and draft regulation (see Fig 23). The Dutch government currently seeks to increase citizen involvement in local decision making and launched various related initiatives; the willingness of municipalities and water boards to collaborate with each other and with citizens is increasing in parallel. However, the Dutch traditionally have a culture of openness, “speaking out” and hearing groups affected by a (central) decision, an informal side that requires consideration in the further analysis. In water boards, this traditionally includes groups like farmers or, increasingly, environmental groups

Fig 23 Baseline Indicators Transparency and Participation in Regulation, the Netherlands

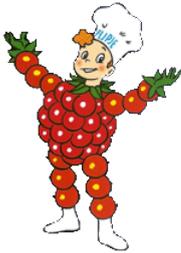


Environmental Context: As the focus of the Demo Case is on pluvial flooding, environmental boundaries of the issue are determined by weather patterns and local climate systems on the one hand, and the ‘flow logic’ and drainage capacities of the Dutch water management system on the other hand.

In terms of landscape, the area is defined by two main rivers (Maas and Waal), as reflected in the name ‘Rivierenland’ (River land). Location in riparian flood plains makes dykes and other water management infrastructure a traditional and prominent feature of the landscape; control over major rivers also forms traditional sources of influence (trade and customs) and also served as a natural defence against enemies.

Social/Cultural Context: The project area is densely populated, with high pressure on space. ‘Every square meter is planned and managed’, which increases both the relevance and the challenges of a project related to spatial planning and urban infrastructure.

Culturally, the region does not have a particularly strong local identity. One contributing factor to this is the high mobility of Dutch society. In the Netherlands, commuting over long distances is quite normal, separating the focus of people’s professional and private life and creating a set of ‘workday-citizens’. Nijmegen is the only major city in the region, it is an old city (the oldest city in the Netherlands founded by the Romans) with strong and visible historical landmarks. One local curio is “Flipje” (depicted right), the mascot of a local jam producer invented in 1935, who turned into a famous and iconic character with its own comic books, museums, and place on touristic street signs.



In terms of environmental attitudes, according to the 2014 Eurobarometer Poll “Attitudes of European citizens towards the environment”,

- 97% of the Dutch population personally believe that protecting the environment is important
- 66% of Dutch agree that environmental issues have a direct impact on their daily lives and 70% feel that citizens themselves are not doing enough to protect the environment
- 57% of respondents feel well informed about environmental issues,
- Sources of environmental information are: 70% TV, 53% social media/internet, 56% newspapers in terms of trusted sources, 60% believe in the reliability of scientists, 44% in Environmental protection associations, 28% in TV documents

Technical Context: Connectivity in the Netherlands is high and universal. Use of online services is supported by an official digital ID system that provides access to government services, but is also used by insurance providers and similar services. Emergency services have adopted an SMS based alert system, and in many locations police and city officials participate in WhatsApp groups set up, for example, in neighbourhoods. Social media platforms in use are the international leaders such Facebook and Twitter, no specific regional or local platforms are known. In terms of media, free local newspapers are produced in many locations, and larger volume papers are distributed at train stations and widely read by commuters.

Fig 24 ITU Access and Usage Indicators 2016, Netherlands

Economy	Fixed-telephone subscriptions per 100 inhabitants		Mobile-cellular subscriptions per 100 inhabitants		International Internet bandwidth Bit/s per Internet user		Percentage of households with computer		Percentage of households with Internet	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
113 Netherlands	41.3 ²⁴	41.3	116.4 ²³	123.5	229'961	242'326	95.7	96.2	95.8	96.0

Economy	Percentage of individuals using the Internet		Fixed-broadband subscriptions per 100 inhabitants		Active mobile broadband subscriptions per 100 inhabitants	
	2014	2015	2014	2015	2014	2015
113 Netherlands	93.2 ⁵⁰	93.1 ⁴⁰	40.8 ¹⁹	41.7	69.2 ²³	70.5

Economic Context: In Economic terms, the project area is divided in a rural Eastern part dominated by farming, and an urbanized and more industrialized part in the West around the city of Nijmegen. In general, Dutch incomes lie above the OECD average, and the Dutch enjoy comparatively low labour market insecurity. Regional disparities on income and other key economic statistics are relatively low. Life satisfaction in the Netherlands is also substantially higher than the OECD average level.

3.3.2 Stakeholder Inventory

Table 4 Demo Case Stakeholder Inventory, Netherlands

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase			Implications, comments, open questions	Type
		1	2	3		
Core Stakeholders - Community Members (Recruitment Targets)						
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Citizens" Interested in the effects of climate change				These individuals or groups have a relevant interest, but a low level of authority and power;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Citizens Interested in engaging in decision-making				These individuals or groups have an interest in influencing (environmental) decisions, but low level of power and authority, or need to convince other powerful actors to influence the decision making processes;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Potential members of a future G1000 group				Positive expectations - ability to report on neighbourhood water nuisance and Sense of giving to the community by reporting local conditions; potential negative expectations - waste of time if the participation doesn't make impact, disappointment for not making a difference with my participation. Local governments favour participation;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Home owners				Not likely to have individual power and authority, but might have (moderate) collective power to influence decisions (e.g. in form of complaining about an issue in their neighbourhood.);	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	KNMI 360 volunteers + wow.knmi.nl platform users				Provide weather related data, but have a low level of authority and power;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Weather amateurs group (400) - hetweeractuel.nl				Provide weather related data, but have a low level of authority and power; Positive expectations - Visibility of the data collected by the group; Proof of the validity of the data collected by the group by comparing it to other sources. ability to attract members the group., potential negative expectations: concerns about the data being used for political purposes.; CO attractive due additional resources for high quality weather stations and access to radar data, but might be too much focus on urban planning and social issues.	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - children					Schools as re-enforcement of current practice?;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	Environmental groups				Authority and power of different environmental groups differ (e.g. depending on the number of members, relevance of activities, member affiliations, etc.);	Citizen
CS - CO Members (Recruitment targets) - Citizen Tagert Groups - Community Action groups	"Dijk army" (in part professionals)				Low to moderate level of authority and power (linked to them being professionals);	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase	Implications, comments, open questions	Type
CS - CO Members (Recruitment targets) - Citizen Tagert Groups - Community Action groups	Ready2Help (Red cross community disaster response initiative)		;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - major local presence			Company vehicles as potential data collection fleets;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - leading employers			;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources			;	Citizen
CS - CO Members (Recruitment targets) - Business target group - "corporate citizens"			;	Citizen
CS - CO Members (Recruitment targets) - Policy target groups - decision-makers	Municipal administrations		Should all be neutral and generally supportive (movement to more participation); High level of authority and power (especially regarding urban issues);	Decision-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration	Staff waterboard		Waterboard interested to participate through social media (check with communications department); High level of authority and power based on their expertise and ability to influence the Waterboard decisions;	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators	Elected officials to waterboards		is there sense of "constituencies"?; High level of authority and power;	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators	Environmental working groups political parties		Moderate to high level of authority and power (based on their relevance, members, etc.);	Citizen
CS - CO Members (Recruitment targets) - Data Aggregators			;	Data Aggregator
CS - CO Members (Recruitment targets) - Data Aggregators	Independent Consultants (supply Wbs with research data)		Moderate level of authority and power; because of their expertise can influence Waterboard's decisions;	Citizen
CS - CO Members (Recruitment targets) - Scientists			;	Scientist
Core Stakeholders - Experts & Advisors				
CS - Experts & Advisors - Design-Phase - experts citizen science			;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	Waterschap Rivierenland (key supporter Hydrological Depart-		High level of authority and power;	Scientist

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase			Implications, comments, open questions	Type
	ment, Andre van Aken)					
CS - Experts & Advisors - Design-Phase - issue experts	HydroLogic issue experts				Moderate level of authority and power; because of their expertise, and being a trusted NL based company;	0
CS - Experts & Advisors - Design-Phase - issue experts	Science – climate change, political scientists				Informally 'peer-review' the scientific elements of the design and flag potential issues, ensure scientific veracity, credibility and epistemic authority;	0
CS - Experts & Advisors - Design-Phase - issue experts	IHE				Moderate level of authority and power; because of their expertise, and being a trusted NL based institute;	0
CS - Experts & Advisors - Design-Phase - technology experts	HydroLogicv technology experts				HydroNet platform/; Moderate level of authority and power; because of their expertise, and being a trusted NL based company;	Citizen
CS - Experts & Advisors - Design-Phase - technology experts	Gavagai				Low level of authority and power;	0
CS - Experts & Advisors - Design-Phase - technology experts	HWA				Provide weather related data, but have a low level of authority and power;	0
CS - Experts & Advisors - Design-Phase - technology experts	Upande				Low level of authority and power;	0
CS - Experts & Advisors - Design phase - reality checkers citizen observatories	Coordinators for G1000 in other areas				Feedback on ideas that have been successfully/unsuccessfully tried elsewhere;	Citizen
CS - Experts & Advisors - Design phase - reality checkers citizen observatories	Citizen action groups - trots-optiel - and similar groups				;	0
CS - Expert Advisors - Design phase - reality checkers citizen observatories	Leaders other GT2.0 Demo Cases	x			Feedback on ideas that have been successfully/unsuccessfully tried elsewhere;	Citizen
CS - Experts & Advisors - Design phase - reality checkers citizen observatories	Hetweeraactual leader				Driver behind exiting Citizen weather observatories; Moderate level of authority and power;	0
CS - Experts & Advisors - Design phase - reality checkers local politics	Find a "Local Political experts")				Considering the aspect of role of WBs in society, involvement of a respected 'old hand' in water management might be useful, to alleviate fears on all sides;	Policy-maker
CS - Experts & Advisors - Long-term - local policy					Might help bring CO information to the attention of local decision makers or advice on how to flag citizen issues and concerns;	Policy-maker
CS - Experts & Advisors - Long-term - science					Help sustain epistemic authority by signalling to outside parties that the CO values scientific review;	Data Aggregator
CS - Experts & Advisors - Long-term - policy linkages	KNMI – weather, climate change				Assumed to be neutral and generally supportive (movement to more participation); High level of authority and power; they are the reference expert institute about weather and climate in the Netherlands; Positive expectations Free source of additional data, but depends on data quality;	Policy-maker
CS - Experts & Advisors - Long-term - policy linkages	GDN(?) National Land Survey (Apeldoorn)				Assumed to be neutral and generally supportive (movement to more participation); High level of authority and power in their area of expertise;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase			Implications, comments, open questions	Type
CS - Experts & Advisors - Long-term - policy linkages	RIVM - air quality (safety)				Assumed to be neutral and generally supportive (movement to more participation); High level of authority and power in their area of expertise;	0
Enabling Environment - Regulatory Entities						
EE - Regulatory Entities - political process - Supra-national bodies					Issues binding legislation (directives), offers legal channels that might support or contradict local concerns;	Policy-maker
EE - Regulatory Entities - political process - Legislators - national	National parliament				Sets overall policies for issue areas, authorizes and guides national agencies, determines authority of sub-national and local governments, decides parameters for participation; High level of authority and power to influence policies;	Policy-maker
EE - Regulatory Entities - political process - Legislators - sub-national 1	Waterboard Councils				Clarify- competencies usually involve aspects of spatial planning; High level of authority and power to influence policies;	Policy-maker
EE - Regulatory Entities - political process - Legislators - sub-national 2					Clarify role	Policy-maker
EE - Regulatory Entities - political process - Legislators - local	Municipal Councils				Clarify- set local policy, essential level enabling/ restricting citizen participation.; High level of authority and power to influence policies;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	Rijkswaterstaat				Drafts national policies and regulations, implements national policies and directives, collect national level data, prepare technical reports influential for political agendas; High level of authority and power at the national level (perhaps less power at the local level);	Policy-maker
- Regulatory Entities - political process - Executive/Administration - national	Other national ministries/agencies				Drafts national policies and regulations, implements national policies and directives, collect national level data, prepare technical reports influential for political agendas; High level of authority and power at the national level (perhaps less power at the local level);	0
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1	Waterboard Executive				Implements regional policies, typically involving spatial planning and regional infrastructure; High level of authority and power to influence the Waterboard's decisions;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 2					Implements regional policies, typically involving spatial planning and regional infrastructure;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - local	Municipal executive				Drafts and implements local plans and strategies, oversees and provides local services; High level of authority and power to influence municipalities decisions;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - local subdivisions					implement local plans and strategies in smaller political units;	Decision-maker

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase			Implications, comments, open questions	Type
- Regulatory Entities - political process - Other regulatory entities					;	Policy-maker
EE - Regulatory Entities - political process - Auditors& oversight					;	Policy-maker
EE - Regulatory Entities - political process - Auditors& oversight					Monitor and control the implementation of policies, provide channels to raise and address issues with policy processes;	Policy-maker
EE - Regulatory Entities - project - Standardization bodies	KNMI, OSM, ECMWF, GEOS, OGC, COBWEB, INSPIRE				Defines technical parameters project has to comply with to fulfil commitments regarding data accessibility and compatibility (might involve two-way dialogue - project can engage to set standards); High level of authority and power in their area of expertise;	0
EE - Regulatory Entities - project - Donors - Funding Authority					Defines framework objectives as part of calls for proposals, approves project contents and shapes objectives (boundary condition for user-based design). As 'owner' of policy able to (re-)negotiate meanings;	0
EE - Regulatory Entities - project - Donors - Executive agencies					Implements regulation on behalf of the funding authority, monitors compliance and acts as enforcer of externally negotiated meaning (boundary condition for user-based design);	0
EE - Regulatory Entities - project - Hosting Organizations/ Statutory Agencies					Legal counterpart of funding authority, sets operational parameters (e.g. financial rules, employment) for project teams; determines resource availability, including extra staff support, communication channels, infrastructure;	0
Enabling Environment - Allies & Umbrella Movements						
EE - Allies & Umbrella Networks - Endorsing organisations - local					;	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - regional					;	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - global					;	Citizen
EE - Allies & Umbrella Networks - Local Allies					Business networks (east);	Citizen
EE - Allies & Umbrella Networks - Local Allies					Other platforms interested in spreading their data; Depends on the platform (most probably low level of authority and power);	0
EE - Allies & Umbrella Networks - Local Allies					Climate adaptation community?; Depends on the community (most probably low level of authority and power);	0
EE - Allies & Umbrella Networks - Local Allies					Climate science community?; Depends on the community (most probably low level of authority and power);	0
EE - Allies & Umbrella Networks					Any driving force behind municipal participation initiatives?;	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase			Implications, comments, open questions	Type
- Regional Allies						
EE - Allies & Umbrella Networks - Umbrella Movements - Citizen Science					;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - professional association					;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements					;	Citizen
Enabling Environment - Media & The Public						
EE - Media & the Public - Relevant Societal Groups	Homeowners				Represent a specific experience that might require/benefit from a tailored message; Not likely to have individual power and authority, but might have (moderate) collective power to influence decisions (e.g. in form of complaining about an issue in their neighbourhood).;	Citizen
EE - Media & the Public - Relevant Societal Groups	Farmers (traditional major role, now less)				Might have (moderate) collective power to influence decisions;	0
EE - Media & the Public - Relevant Societal Groups	Commuters from other areas				Not likely to have authority and power to influence decisions;	0
EE - Media & the Public - Neutral multipliers					Influential as local opinion-makers, will spread the message if convinced of its benefit, but will usually stay out of organized activities;	Citizen
EE - Media & the Public - Communication channels to citizens					Local groups with a large/interesting membership, will spread the message to members as long as it does not interfere with their own activities (competition for volunteers!), relevant as trusted source of information;	Citizen
EE - Media & the Public - Formal Media - newspapers					Respected publications provide credibility, locals to reach specific audiences;	0
EE - Media & the Public - Formal Media - TV					;	0
EE - Media & the Public - Formal Media - Radio					;	0
EE - Media & the Public - Formal Media - Online					;	0
EE - Media & the Public - Social media					Represent popular and familiar modes of interaction, important tools for mouth-to-mouth propaganda;	Citizen
Enabling Environment - Opposition & Critics						
EE - Opposition & Critics - Low resource target groups	Administrators concerned about Resource demands				Groups who might be motivated to participate in finished platform, but need incentives to contribute to the design process;	Citizen
EE - Opposition & Critics - Vested Interests	Waterboard actors concerned about inputs as limitations				Citizen involvement as "failure" – more constraints (if we publish flood expectations, water levels etc. people will challenge decisions – but in fact good to know where to get info),; Moderate power and authority over decisions;	Policy-maker

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase			Implications, comments, open questions	Type
EE - Opposition & Critics - Antagonists	Waterboard staff taking pride in "being invisible"				Idea rejected out of principle, (even if it does not really affect them.) If created by lack of information, position might be changed, especially relevant if group is a key intended target audience of the CO; Moderate power and authority over decisions;	Citizen
EE - Opposition & Critics - Antagonists	Citizens/cities expecting Waterboards to take care of everything				Low level of power and authority over decisions, and low level of interest in doing so...;	0
EE - Opposition & Critics - Resource competitors					;	Citizen
EE - Opposition & Critics - Change resistance					;	Policy-maker
EE - Opposition & Critics - Citizen science sceptics	Sceptics data quality (can't improve WBs as leading experts)				Low level of power and authority over decisions;	Citizen
Market Forces - Shareholders and Investors						
MF - Shareholders and investors - Public Funder					Financing projects under a national or local political mandate;	Decision-maker
MF - Shareholders and investors - Private Donors					Financing projects according to specific values/convictions;	Citizen
MF - Shareholders and investors - Sponsors					Financing project in exchange for visibility;	Citizen
MF - Shareholders and investors - Joint Venture					Investment in expectation of commercial success;	Data Aggregator
MF - Shareholders and investors - Lenders					Provide credit in expectation of repayment;	0
MF - Shareholders and investors - Shareholders					Provide liquidity in expectation of future profits;	Citizen
MF - Shareholders and investors - In-kind Donors Hardware/Software					Restricts design options;	Data Aggregator
Market Forces - Suppliers						
MF - Suppliers - Technical Components	HWA				Which components?; Provide weather related data, but have a low level of authority and power;	Data Aggregator
MF - Suppliers - Technical Components	Upande				Low level of authority and power;	Data Aggregator
MF - Suppliers - Platform/Data Technology	HydroLogic				Moderate level of authority and power; because of their expertise, and being a trusted NL based company;	Data Aggregator
MF - Suppliers - Apps and Services	Gavagai				Low level of authority and power;	Data Aggregator
MF - Suppliers - Apps and Services					;	0
MF - Suppliers - Commercial data providers					;	Data Aggregator

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Phase			Implications, comments, open questions	Type
MF - Suppliers - Academic knowledge providers					;	Data Aggregator
Market Forces - Buyers						
MF - (Prospective) Customers - Public clients	Waterboards as buyers				Buyer of technology components or services; High level of authority and power;	0
MF - (Prospective) Customers - Users					Subscribers to paid services;	0
MF - (Prospective) Customers - Marketing agencies					Buyers of 'access' to community for ads;	0
Internal Stakeholders						
IS - Internal Stakeholders - Project Management	GT2.0 PMT				Are interests coherent? Do developments in the co-design process match project and partner objectives? Are there conflicts with the transition to a post-project organization?; Moderate level of authority and power; because of their expertise, and being a trusted NL based institute;	0
IS - Internal Stakeholders - Project Staff, consultants and subcontractors	Dedicated project staff all partners GT2.0 consortium				Are the skills and experiences of all consortium partners known and optimally used for the DC?;	0
IS - Internal Stakeholders - Advisory Bodies	Advisory Committee and Steering Committee				;	0
IS - Internal Stakeholders - Host organizations - support staff	Support staff all partners GT2.0 consortium				;	0
IS - Internal Stakeholders - CO Leadership	HydroLogic Research				Do the interests of DC leaders align with the trajectory of the co-design process?;	Data Aggregator
IS - Internal Stakeholders - CO Team - community organizers					Initiation of the CO Community will require 1-2 staff of partner organizations or activists identified in the first interaction moment to do the "leg work" involved in recruiting and mobilizing Core Stakeholders;	0
IS - Internal Stakeholders - CO Team - commercialization leaders					Lead partner to ensure systematic consideration of the DC potential for future upscaling and transition to a sustainable operational model? Note potential conflicts of interests with a community driven co-design process. Ensure balance if intended business model will face concentrated buyer power.;	Data Aggregator
IS - Internal Stakeholders - CO Team - technical roles			x		Early appointment relevant for training and feedback in technical design phase;	Data Aggregator
IS - Internal Stakeholders - CO Team	Dedicated staff partner organizations and volunteer contributors with an extended/formalized role during the co-design process	x	x	x	Which team members contribute under project assignments, which as long-term investments for their employers? Will particularly enthusiastic pioneer Community Members be recruited in informal roles to increase ownership, e.g. to produce initial contents in an organized manner?;	0

3.3.3 Key observations

A defining feature of the Dutch Demo Case is the (changing) role of the Water Board in reacting to and preparing for climate change. Over several decades, WBs have expanded their modus operandi to an “all-in” model, taking up a large number of actions in scope and scale. Seeing the Water Board as driving force behind the Demo Case fits with this logic. At the same time, the changing role of WBs already led to an increasing number of ‘mismatches’ between WB tasks and decision structures (OECD 2014), which feature prominently in the issue of rain-induced flooding. In particular, the responsibility for ‘water on the streets’ is primarily a municipal issue, and indirectly a question of coordination between municipalities and Water Boards.

This raises the question if the planned Citizen Observatory follows the logic of expanding WB responsibilities (Water Boards ‘dealing’ with pluvial flooding by providing decision-relevant information to their urban ‘clients’), or if citizen engagement can open a dialogue on systemic shifts water management and the role and responsibilities of different actors. In this situation, it will be necessary to monitor if different stakeholders expect participation to serve as an increase, as a reversal, or even as a counter-reaction to the centralization of decision-power in the hands of Water Boards.

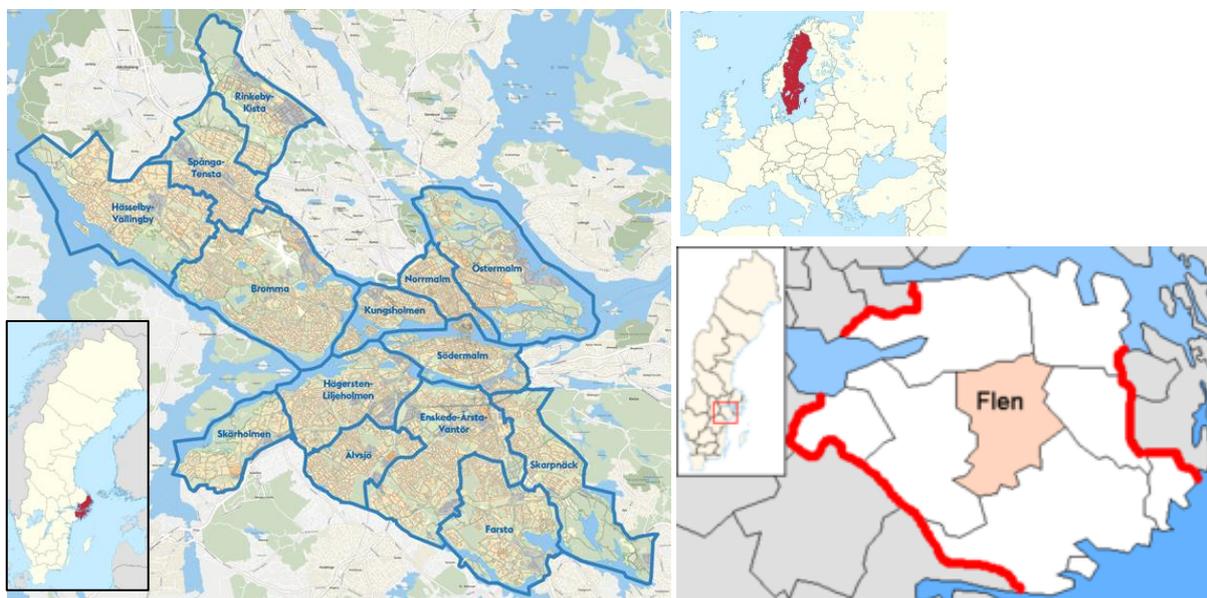
At this point, the project boundaries are almost exclusively framed from a water management perspective. Only limited attention has been paid to investigating the municipal and, especially, ‘civilian’ frames of reference. Considering that few citizens really care which agency ‘keeps their feet dry’, developing a better understanding how citizens frame concerns over pluvial flooding and their scale for organizing action. For example, large-scale commuting of professionals blurs the lines of who is a ‘local’ citizen – which is especially relevant as professionals spending significant time ‘on the road’ every day might be particularly sensitive to water nuisances.

3.4 Water quality management in Stockholm and Flen/Sweden

3.4.1 Context Mapping⁸

The Swedish Demo Case aims to develop a Citizen Observatory that can be up-scaled to the national level; the Demo Case areas serve, therefore, as pilot regions (see Fig 25). Two areas have been selected, Stockholm as urban area with a more specific localisation to be decided; Flen as rural area. Stockholm has been selected as the most influential metropolitan area in the country, with an existing network of contacts. Flen has a committed community in an ‘Eco-village’, with objectives that aligns well with the guiding principles of GT2.0. As Flen is relatively close to Stockholm, efforts are being made to identify a third test area in the rural North of the country.

Fig 25 Target Area of the Swedish Demo Case



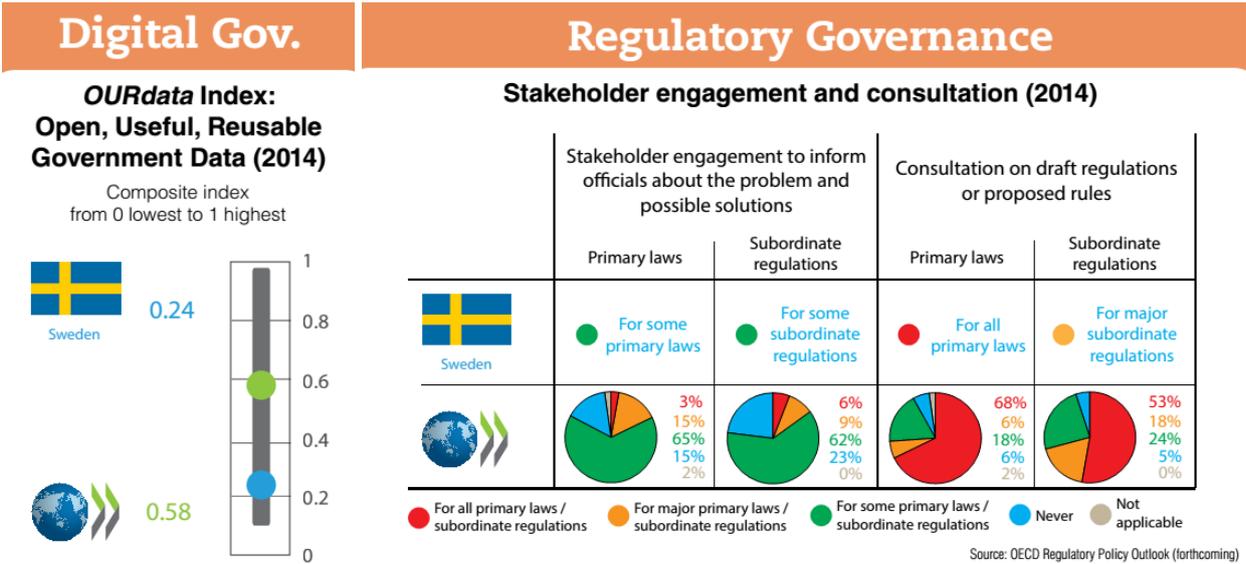
Political Context: Sweden has four main levels of government; EU, national level, counties and municipalities. Government authority is highly decentralized, with almost autonomous municipalities. Stratification and further sub-division of city governments according to local preferences and political demands creates a fragmentation and complexity that can be “*mind-boggling*” and makes it easy to ‘*pass the buck*’ and avoid action and responsibility. The national level is less fragmented and central directives such as National Environmental Targets (Miljomål) are more coherent, but it is generally the tasks of lower levels to ‘interpret’ the law, which includes distributing responsibility for implementation of aspects of central directives to local entities.

One of the key consequences of the described decentralization and fragmentation is a lack of comprehensive sources for government data. Data is openly available, but collected and kept in silos and not

⁸ For local summaries of statistical data and reports quoted, as well as additional background information see OECD country page (<http://www.oecd.org/sweden/>), OECD Better Life and Regional Wellbeing Indices (<http://www.oecdbetterlifeindex.org/countries/sweden/>) and <https://www.oecdregionalwellbeing.org/SE11.html>), World Bank ‘Doing Business’ Analysis (<http://www.doingbusiness.org/data/exploreconomies/Sweden>), International Telecommunications Union (<https://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>), and the European (<http://ec.europa.eu/eurostat>) and Swedish Statistical Services (<http://www.scb.se/en/>)

shared across government departments and with citizens in an effective manner. Accordingly, Sweden has one of the lowest scores for data that is ‘open, useful, and re-usable’ in the OECD (see Fig 26). A number of initiatives currently attempt to increase collaboration, including efforts by the Swedish land survey, a scheme by the Ministry of Enterprise, as well as a Stockholm Stad initiative for Open Data. However, a central effort or directive aiming to make data coherent is still absent. In terms of participation, provisions for stakeholder engagement in laws and regulation are about, or slightly below, OECD average.

Fig 26 Baseline Indicators Transparency and Participation in Regulation, Sweden



Environmental Context: Water quality in the pilot regions will involve a perspective on catchments of relevant rivers and inland lake systems.

A connecting issue for all coastal areas is water quality in the Baltic, which will be particularly relevant if a Northern pilot municipality can be recruited. With low population density and little economic activity, the North features pristine environments and high quality water bodies, but coastal areas are affected by pollution introduced in other regions as external effect.

Social/Cultural Context: Swedish society is part of a “Northern European” culture, projected and represented externally, for example, through joint embassy complexes in other countries. Internally, bigger cities have strong local culture, and a distinction and competition exists between the metropolitan areas and “The North”. In rural areas, the general perception is that political attention is focused on Stockholm, to the detriment of other regions. Flen specifically attempts to create local identity as Eco Village, with strategies relates to energy, food production etc. Here, environmental concerns provide a uniting factor.

With regard to environmental attitudes, the 2014 Eurobarometer Poll “Attitudes of European citizens towards the environment” finds that

- 100% of the Swedish population personally believe that protecting the environment is important, and 64% of Swedes names water pollution as a main concern. It is the highest rated concern in Sweden, and in Europe, only Finns express higher concern about water pollution.
- 75% of Swedes agree that environmental issues have a direct impact on their daily lives, and 82% feel well informed, through 33% feel a lack of information on water pollution
- Sources for environmental information are: 68% TV, 40% social media/internet, 60% newspapers. In terms of trusted sources 69% of Swedes believe in the reliability of scientists, 60% in Environmental protection associations 60%, 30% in TV documentations
- 70% feel that citizens themselves are not doing enough to protect the environment

In terms of civil engagement, Swedes volunteers lightly above OECD average, 36.2% of the Swedish working age population report that they engaged in formal volunteering in a year. This is contrasted by the engagement of younger generations: Civic participation of students, with 25.4% of 14-year olds report having participated in organisations, groups or clubs over a year, one of the lowest shares in the OECD. Interestingly, the creative problem-solving skills of Swedish students also fall below the OECD average level.

Technical Context: Network access including 4G access is ubiquitous in Sweden. The age gap in technology use is comparatively low, as public services are offered online across all age groups and supported by an official digital ID scheme. Twitter, Facebook and Instagram are considered the most popular social networks, though local groups might have their own Google groups or blogs.

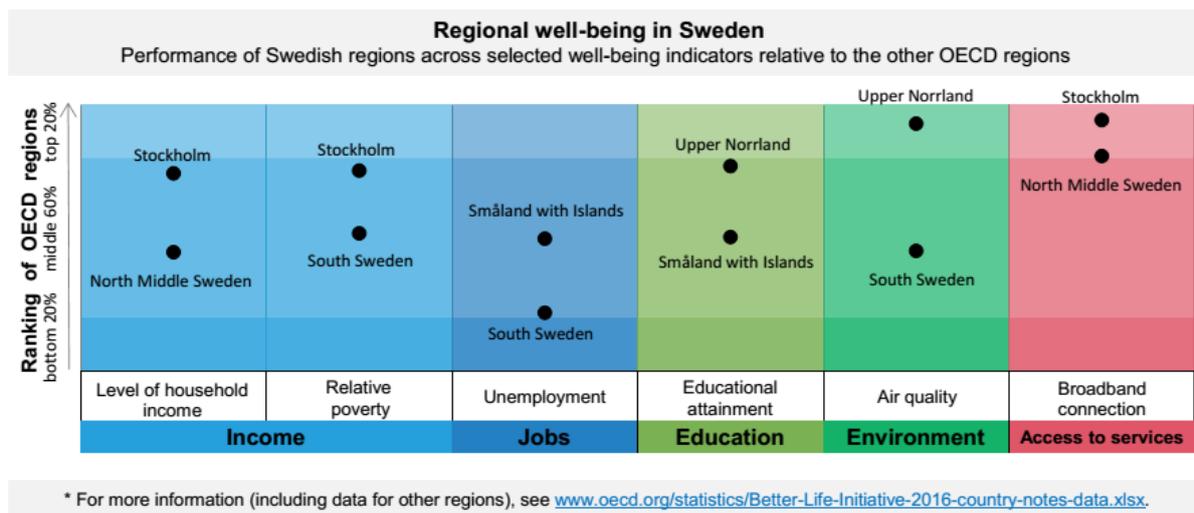
Fig 27 ITU Access and Usage Indicators 2016, Sweden

Economy	Fixed-telephone subscriptions per 100 inhabitants		Mobile-cellular subscriptions per 100 inhabitants		International Internet bandwidth Bit/s per Internet user		Percentage of households with computer		Percentage of households with Internet	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
151 Sweden	39.2	36.7	127.8	130.4	392'780	421'237	90.1	88.3	89.6	91.0

Economy	Percentage of individuals using the Internet		Fixed-broadband subscriptions per 100 inhabitants		Active mobile broadband subscriptions per 100 inhabitants	
	2014	2015	2014	2015	2014	2015
151 Sweden	92.5 ⁶⁷	90.6 ⁵⁴	34.1	36.1	116.3	122.1

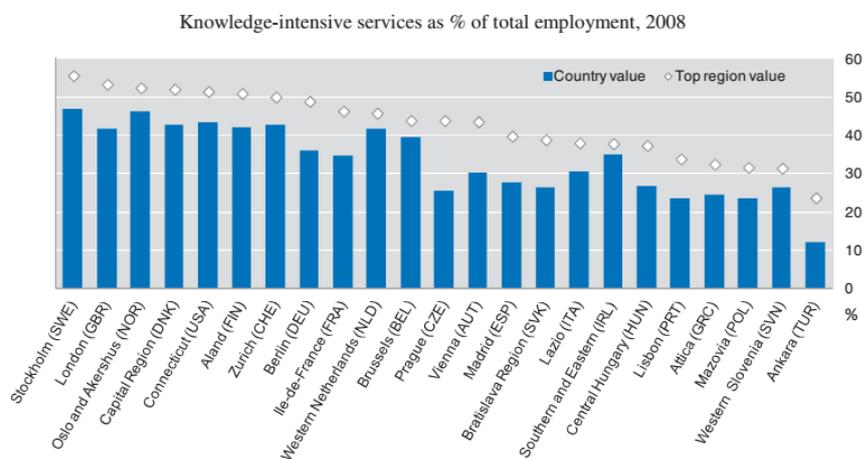
Economic Context: Sweden is a high income country, with economic power concentrated in the Stockholm area (see Fig 28). There are no dominating industries or companies per se, but in terms of interests divisions exist between ‘traditional’ sectors such as agriculture, and technology-oriented firms.

Fig 28 Regional Well-being indicators Sweden



Notably, Stockholm invested and specialized early on in knowledge-intensive services, and is a leading region both within Sweden and in the OECD (see Fig 29).

Fig 29 Regional specialization in knowledge-intensive services



Source: OECD Regional Database.

3.4.2 Stakeholder Inventory

Table 5 Demo Case Stakeholder Inventory, Sweden

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
Core Stakeholders - Community Members (Recruitment Targets)							
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Stockholm residents living close to water bodies	x				Who are suffering from bad water quality, who have something to lose by not engaging (Citizens who will be affected by decisions of the current process – might have already tried and be frustrated because you don't see the result) – motivated by geographic bond; Low level of authority and power;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Residents Flen Ecovillage	x			Flen Ecovillage, Stockholm Region	Citizens who are suffering from bad water quality, who have something to lose by not engaging – motivated by geographic bond; Low level of authority and power; Positive expectations: Improving personal skills and knowledge, benefit the community by raising awareness about water quality, empower local community in decision making; potential negative expectations loss of time and effort if the data collected had no impact on the decisions/policies.; engagement likely to depend on ease of use of technology for data collection, availability of training, and feedback on the initiative progress, results and impacts on the community. opposition possibly due to lack of trust if the initiative is led by the government and vested/private interests	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	"Outdoor People" (identity-based)					Not every outdoor person is a member of the outdoor society. Unorganized citizens might be reached through websites etc. ; Low level of authority and power;	0
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Recreational fishermen				sportfiskarna.se	Low level of authority and power;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - children	"Cool tech kids" and citizen science geeks		x		School kids from Flen and Stockholm Region and local scouts	Early adopters, like the science, like the technology, often young, maybe from schools, Moving target, geographically disbursed, Attitude might be fickle, driven by their interest and quickly turn to new hypes, so groups might change ; Low level of authority and power;	Citizen
CS - CO Members (Recruitment targets) - Citizen target	Members of the Swedish Society for Nature Conservation		x		NaturskyddsF.	Identity rooted – "I spent my free time life in this environment , and carry my phone anyway, so I engage because I	Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type	
groups - organized citizens					care";		
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	Friluftfrämjandet (Swedish Outdoor Society)		x		Contact board member Karolina Andersson (thru Jussi)	Identity rooted – "I spent my free time life in this environment , and carry my phone anyway, so I engage because I care";	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	Kayaking and Sailboat Assoc.					Identity rooted – "I spent my free time life in this environment , and carry my phone anyway, so I engage because I care"; Low level of authority and power;	Citizen
CS - CO Members (Recruitment targets) - Citizen Tagert Groups - Community Action groups	Swedish biodiversity information center		x			Check (possibilities of)involvement in a more general movement for more consistent, accessible, reusable data ; likely to welcome additional data, but concerned about intrusive or damaging data collection by careless citizens ; likely requires clear instruction for data collectors to ensure the quality of data collected, as well as availability of automatic data collection technologies to overcome resource restrictions . Might raise concerns over privacy, legal complications, poor functionality of data collecting devices	Citizen
CS - CO Members (Recruitment targets) - Business target groups - major local presence						Employers with broad and frequent physical presence across project area - Postal services, companies with many local branches/shops, check e.g. opportunities for company fleet vehicles to carry sensors or staff with fixed routes to engage;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - leading employers						Ericsson engaged via sustainability center, check channels to reach staff as members;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Agricultural Sector			x	Greppa Näringen: http://www.greppa.nu/ Adam Arnesson	View and interests of local business and sectors not yet systematically considered;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	outdoor tourism					View and interests of local business and sectors not yet systematically considered;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Forestry				skogsindustrierna.se	View and interests of local business and sectors not yet systematically considered;	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type	
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Professional fishermen				yrkesfiskarna.se	View and interests of local business and sectors not yet systematically considered;	Citizen
CS - CO Members (Recruitment targets) - Business target group - "corporate citizens"	Big Firms (CSR)			x		View and interests of local business and sectors not yet systematically considered;; Moderate to high level of authority and power, mainly because of the economic influence;	Citizen
CS - CO Members (Recruitment targets) - Policy target groups - decision-makers	Stockholm Stad	x			Urban Planners	Urban planners here or as experts - currently both. Will require refinement to identify komun actors once target area is specified; High level of authority and power;	Decision-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration	Länsstyrelserna i Stockholm och Södermanland (County Administrative Boards)				"Works on issues concerning the environment, nature, the labour market, competence sourcing, the business community, social development, animal protection, gender equality, integration, transport, infrastructure and housing." Responsible for compliance and permissions	High level of authority and power; Their main responsibility is to coordinate the development of the county in line with goals set in national politics;	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration	Water Authorities		x		(Vattenmyndigheterna) Government policy	Involved in the relevant local processes - usually identify as neutral technicians and brokers, interested in quality of outcome, including owners of current in-situ networks ; High level of authority and power;	Decision-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration	Lantmateriet		x		National government	Collect local data; Interested because they are already involved in national level projects, see this as a way of learning about sharing knowledge Moderate to high level of authority and power; a government agency that provides information on Swedish geography and property;	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators						Elected officials involved in the relevant local processes and local political agenda setting - usually identify as advocates for their constituency - not yet systematically considered;	Policy-maker
CS - CO Members (Recruitment targets) - Data Aggregators	Stockholm University					Check long term perspectives;	Data Aggregator

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
CS - CO Members (Recruitment targets) - Scientists	IVL Svenska miljöinstitutet			http://www.ivl.se/	Moderate to high level of authority and power; IVL Swedish Environmental Research Institute was jointly founded by the Swedish state and national business interests, with a focus on research on industrial air and water issues. The scope of their activities is much broader and their research focuses on the interaction between ecological, economic and social perspectives.;	Scientist
Core Stakeholders - Experts & Advisors						
CS - Experts & Advisors - Design-Phase - experts citizen science	Earthwatch (Citizen science)	x			Low to moderate level of authority and power; because of their expertise;	Scientist
CS - Experts & Advisors - Design-Phase - experts citizen science	Ericsson Sustainability Center	x		positive, similar projects (participation), existing collaboration		0
CS - Experts & Advisors - Design-Phase - issue experts	Stockholm University	x		+SRC	Moderate level of authority and power; because of their expertise, and being a trusted Sweden based institute;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	Unesco-IHE (Science)			x	Low to moderate level of authority and power; because of their expertise;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	SEI	x			Low to moderate authority and power because of their expertise. They are an international non-profit research organization that works to shift policy and practice towards sustainability;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	Swedish water information system		x			Data Aggregator
CS - Experts & Advisors - Design-Phase - issue experts	Swedish Geodata association			x		Data Aggregator
CS - Experts & Advisors - Design-Phase - issue experts	Kristian Skånberg (Club of Rome, SEI)			Contact thru Jussi		Scientist
CS - Experts & Advisors - Design-Phase - issue experts	SMHI			hydrological expertise, catchment areas, maps	High level of authority and power; they are the Swedish Meteorological and Hydrological Institute; an expert agency under the Ministry of the Environment and Energy;	Scientist
CS - Experts & Advisors - Design-Phase - technology experts	Altran (Tech)	x			Low to moderate level of authority and power; because of their expertise;	Citizen
CS - Experts & Advisors - Design-Phase - technology experts	Gavagai (Tech)	x			Low to moderate level of authority and power; because of their expertise;	Data Aggregator
CS - Experts & Advisors - Design-Phase - technology experts	Akvo (Tech)	x			Low to moderate level of authority and power; because of their expertise;	Data Aggregator

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
CS - Experts & Advisors - Design-Phase - technology experts	Earthwatch				Low to moderate level of authority and power; because of their expertise;	Data Aggregator
CS - Experts & Advisors - Design-Phase - technology experts	Tygron (Tech)		x		Low to moderate level of authority and power; because of their expertise;	Data Aggregator
CS - Experts & Advisors - Design phase - reality checkers citizen observatories	Liselott Sjödin Skarp (GT2.0 AB, Swedish Species Information Centre, Swedish Life Watch)		x	From SLU		Citizen
CS - Expert Advisors - Design phase - reality checkers citizen observatories	Leaders other GT 2.0 Demo Cases	x		GT2.0 partner	Feedback on ideas that have been successfully/unsuccessfully tried elsewhere ;	Citizen
CS - Experts & Advisors - Design phase - reality checkers local politics					Identify experienced local political operators, e.g. retired senior officials, with intimate knowledge of the local political dynamics and its written and unwritten rules, especially in Stockholm area, to identify broader political agendas at play and avoid misleading connotations;	Policy-maker
CS - Experts & Advisors - Design phase - reality checkers local politics	Managers of government social media channels			Taken out	Group has key knowledge about who is trying to communicate with public official and why - not just a communications channels, but should be considered as stakeholders with 'ear to the ground' ;	0
CS - Experts & Advisors - Long-term - local policy	Flen eco-village initiative core group			All contacted people really concerned about what is expected of them – really focus contact, and only approach them few and aggregated ways	;	Policy-maker
CS - Experts & Advisors - Long-term - local policy	Stockholm stad contact person urban planning		x		Perceived to be positive and supportive, expect that citizens feel included and thus stop complaining, promote image for the city. Potential negative expectations of wasted time and resources, increased pressure on the government to act, as well as criticism and disappointment if CO does not deliver on expectations; Key success factor likely creating/designating a specific department to deal with the CO output, but currently lack of resources to accommodate additional work required. Likely concerns over privacy and unsafe field conditions for citizens in data collection	0
CS - Experts & Advisors - Long-term - science	Network of university labs – positive		x	Sustainability lab at KTH	;	Data Aggregator

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
CS - Experts & Advisors - Long-term - policy linkages	SCB Statistics Sweden				Moderate level of authority and power. They are an administrative agency with the task of supplying customers with statistics for decision making, debate and research. They are mainly assigned these tasks by the government and different agencies, but also have customers in the private sector and among researchers.;	Policy-maker
Enabling Environment - Regulatory Entities						
EE - Regulatory Entities - political process - Supra-national bodies	EU/EC				Cross check Water Framework Directive and Aarhus;	Policy-maker
EE - Regulatory Entities - political process - Legislators - national	National level legislators (Riksdag)		x		Cross-check national agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Legislators - sub-national 1					;	Policy-maker
EE - Regulatory Entities - political process - Legislators - sub-national 2	Södermanland County Council		x		cross-check competencies and agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Legislators - local	Stockholm City council	x			cross-check competencies and agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Legislators - local	Municipal Council Flen		x		cross-check competencies and agendas; High level of authority and power;	0
EE - Regulatory Entities - political process - Legislators - local	Municipal Council rural North		x		cross-check competencies and agendas; High level of authority and power;	0
EE - Regulatory Entities - political process - Executive/Administration - national	Ministry for Environment		x		cross-check competencies and agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	EPA (Naturvårdsverket)		x		cross-check competencies and agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	eGov Authorities (DigiID system)	x			explore involvement to counter privacy concerns ;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	Ministry Enterprise (incentives for data integration)	x			explore options to frame activities as part of broader movement, options for subsidies?; High level of authority and power;	Policy-maker

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
EE - Regulatory Entities - political process - Executive/Administration - national	Other National level ministries			x	cross-check competencies and agendas;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	Other National level agencies			x	cross-check competencies and agendas;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1	Water Authorities (Vattenmyndigheterna)	x			cross-check competencies and agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 2	Stockholm Region	x			cross-check competencies and agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 2	Södermanland County Board		x		cross-check competencies and agendas; High level of authority and power;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - local	Stockholm Stad officials	x			Would want research expertise how COs could be engaged in their everyday practice, Want to boost citizen engagement - citizen data layer is missing – not water quality, but HOW are people engaging with water – makes dialogue more meaningful; Strategy of Stockholm city to take control over citizen science process and the citizen data (smart resilient city); [Process-oriented policy making] Becoming a resilient city by 2040 is a key driver for Stockholm Stad. High level of authority and power;	Decision-maker
EE - Regulatory Entities - political process - Executive/Administration - local	Municipal Executive Board Flen	x			High level of authority and power; Likely to welcome additional data on water quality and opportunities to build/improve citizens sense of community, strengthen public dialogue about environmental issues and increase informed public participation. Hesitant about burden on staff and budget to support the initiative, possibility of creating open conflicts, risk of taking incorrect decisions if data collected was of poor quality, and possible safety risks on participants during data collection; Might require Political and financial support from central government. Mobilization events focused on water quality problems in lakes might be needed. Growing public distrust in government initiatives to consider in co-design.	Decision-maker
EE - Regulatory Entities -	Municipal Executive Board rural		x		; High level of authority and power;	0

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
political process - Executive/Administration - local	North						
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	Stockholm Stadt Strategy Working Group	x				Drivers of the current agenda, clarify interests and perceptions of self (screen e.g. for notions of acting in the best interest of the city, thus seeing differing citizen inputs as obstructionists to a strategic goal). ; High level of authority and power;	Decision-maker
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	Stockholm komuns	x				High level of authority and power;	0
EE - Regulatory Entities - political process - Other regulatory entities	The Baltic Marine Environment Protection Commission (HELCOM)		x			High level of authority and power; they are the governing body of the Convention on the Protection of the Marine Environment of the Baltic Sea Area;	Policy-maker
EE - Regulatory Entities - political process - Other regulatory entities	LS	x				;	0
EE - Regulatory Entities - political process - Auditors & oversight						;	Policy-maker
EE - Regulatory Entities - political process - Auditors & oversight						Government Controllers, supervisory organs and watchdog entities;	Policy-maker
EE - Regulatory Entities - project - Standardization bodies	GEOSS, OGC, COBWEB, INSPIRE					Defines technical parameters project has to comply with to fulfil commitments regarding data accessibility and compatibility (might involve two-way dialogue - project can engage to set standards);	0
EE - Regulatory Entities - project - Donors - Funding Authority	EU					Defines framework objectives as part of calls for proposals, approves project contents and shapes objectives (boundary condition for user-based design). As 'owner' of policy able to (re-)negotiate meanings ;	Policy-maker
EE - Regulatory Entities - project - Donors - Executive agencies	EASME,					Implements regulation on behalf of the funding authority, monitors compliance and acts as enforcer of externally negotiated meaning (boundary condition for user-based design) ;	Decision-maker
EE - Regulatory Entities - project - Hosting Organizations/ Statutory Agencies	Partner organizations of the project consortium					legal counterpart of funding authority, sets operational parameters (e.g. financial rules, employment) for project teams; determines resource availability, including extra staff support, communication channels, infrastructure;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
Enabling Environment - Allies & Umbrella Movements							
EE - Allies & Umbrella Networks - Endorsing organisations - local						;	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - regional	Transition Towns					Movement of towns like Flen	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - global						;	Citizen
EE - Allies & Umbrella Networks - Local Allies	Ericsson Sustainability Center	x				;	Citizen
EE - Allies & Umbrella Networks - Local Allies	Citizen observatory group for growers (network)			x		;	0
EE - Allies & Umbrella Networks - Local Allies	Business Associations Stockholm			x		;	0
EE - Allies & Umbrella Networks - Local Allies	Ministry of Enterprise contacts					;	0
EE - Allies & Umbrella Networks - Local Allies	CIO Stockholm Stad					;	0
EE - Allies & Umbrella Networks - Regional Allies						;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - Citizen Science						;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - professional association						;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements	Networks/International conventions with relevance to the Baltic Sea		x			;	Citizen
Enabling Environment - Media & The Public							
EE - Media & the Public - Relevant Societal Groups						;	Citizen
EE - Media & the Public - Neutral multipliers	Land Survey (promised high visibility)		x			Currently under pressure to change business models, highly motivated to 'learn new ways of communicating with citizens', promised support e.g. giving visibility; Moderate to high level of authority and power; a government agency that provides information on Swedish geography and property;	Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
EE - Media & the Public - Neutral multipliers	SU media contacts (managed lists of media contacts)			x		;	0
EE - Media & the Public - Communication channels to citizens	Managers of government social media channels	x				This is not just a communication channel ;	Citizen
EE - Media & the Public - Formal Media - newspapers						;	0
EE - Media & the Public - Formal Media - TV						;	0
EE - Media & the Public - Formal Media - Radio						;	0
EE - Media & the Public - Formal Media - Online						;	0
EE - Media & the Public - Social media	General Social media Twitter/Facebook dominant, also Instagram		x			;	Citizen
Enabling Environment - Opposition & Critics							
EE - Opposition & Critics - Low resource target groups	Target communities concerned about resource requirements		x			Low level of authority and power;	Citizen
EE - Opposition & Critics - Vested Interests	Agencies used to charging for services, pressured by open data	x				;	Policy-maker
EE - Opposition & Critics - Vested Interests	Data collecting agencies fragmentation requires separate scan in target area	x				Why opposition? Resistance to change and break up silos?	0
EE - Opposition & Critics - Vested Interests	Networks/international conventions with relevance to the baltic sea		x			Why considered opposed? General resistance to civilian involvement? Are there groups that might see CO as ally?;	0
EE - Opposition & Critics - Antagonists	•Policy-makers who consider citizen science as redundant given the existing "participation"	x				High level of authority and power;	Citizen
EE - Opposition & Critics - Commercial competitors						;	Data Aggregator
EE - Opposition & Critics - Resource competitors	SLU (Swedish Agricultural University) – hesitant - occupied with ArtDatabanken	x				Issue experts, might be sceptical about GT 2.0 motivation, little time and resources to engage, operates biggest citizen observatory in the Nordic region, engaged in very different things, but might be perceived conflicts of interest or resource conflicts ; Low to moderate level of authority and power; because of their expertise; Positive attitudes to citizen science and issue of water quality in Sweden.; important for success due to connections with other	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
						data scientists and experts. Likely concerned about lack of citizens commitment over the life time of the initiative, lack of time and dedicated resources, unusable format and poor quality of collected data, privacy.	
EE - Opposition & Critics - Change resistance	Local Officials resistant to practice change			x		(unlike to find open opposition, participation and transparency is a generic "good thing" - New form of doing something Government in process of changing practice – government entities leadership open to "learning how to adapt" Implementation likely slow – expectations of practical change	Policy-maker
EE - Opposition & Critics - Citizen science sceptics	People "hesitant" regarding veracity and accuracy of citizen data		x			Low level of authority and power;	Citizen
EE - Opposition & Critics - Citizen science sceptics	People concerned citizen science might "replace" real scientific work			x		Low level of authority and power;	0
Market Forces - Shareholders and Investors							
MF - Shareholders and investors - Public Funder	Stockholm Stad	x	x			Ministries, departments or agencies - Financing projects under a national or local political mandate ; High level of authority and power;	Decision-maker
MF - Shareholders and investors - Public Funder	Water Authorities		x				0
MF - Shareholders and investors - Private Donors	Vinnova	x				Foundations, larger NGOs - Financing projects according to specific values/convictions ;	Citizen
MF - Shareholders and investors - Sponsors						Companies - Financing project in exchange for visibility ;	Citizen
MF - Shareholders and investors - Joint Venture						Partner companies - Investment in expectation of commercial success;	Data Aggregator
MF - Shareholders and investors - Lenders						Banks - Provide credit in expectation of repayment;	0
MF - Shareholders and investors - Shareholders						Crowdsourcing - Provide liquidity in expectation of future profits ;	Citizen
MF - Shareholders and investors - In-kind Donors Hardware/Software						e.g. companies/organizations hosting platforms for free - restricts design options ;	Data Aggregator
Market Forces - Suppliers							
MF - Suppliers -	Altran (Tech)					Low to moderate level of authority and power; because of their expertise;	Data Aggregator
MF - Suppliers -	Gavagai (Tech)					Low to moderate level of authority and power; because of	Data Ag-

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
					their expertise;	gregator
MF - Suppliers -	Akvo (Tech)				Low to moderate level of authority and power; because of their expertise;	Data Aggregator
MF - Suppliers -	Tygron (Tech)				Low to moderate level of authority and power; because of their expertise;	Data Aggregator
MF - Suppliers -	EarthWatch	x	x	x	Low to moderate level of authority and power; because of their expertise;	Data Aggregator
Market Forces - Buyers						
MF - (Prospective) Customers - Public clients					Buyer of technology components or services;	0
MF - (Prospective) Customers - Users					Subscribers to paid services ;	0
MF - (Prospective) Customers - Marketing agencies					Buyers of 'access' to community for ads;	0
Internal Stakeholders						
IS - Internal Stakeholders - Project Management	GT 2.0 PMT				Are interests coherent? Do developments in the co-design process match project and partner objectives? Are there conflicts with the transition to a post-project organization?;	0
IS - Internal Stakeholders - Project Staff, consultants and subcontractors	Dedicated project staff all partners GT 2.0 consortium				Are the skills and experiences of all consortium partners known and optimally used for the DC? ;	0
IS - Internal Stakeholders - Advisory Bodies	Advisory Committee and Steering Committee					0
IS - Internal Stakeholders - Host organizations - support staff	Support staff all partners GT 2.0 consortium					0
IS - Internal Stakeholders - CO Leadership	Stockholm University				Do the interests of DC leaders align with the trajectory of the co-design process? ;	Scientist
IS - Internal Stakeholders - CO Team - community organizers					Initiation of the CO Community will require 1-2 staff of partner organizations or activists identified in the first interaction moment to do the "leg work" involved in recruiting and mobilizing Core Stakeholders;	0
IS - Internal Stakeholders - CO Team - commercialization leaders			x	x	Lead partner to ensure systematic consideration of the DC potential for future upscaling and transition to a sustainable operational model? Note potential conflicts of interests with a community driven co-design process. Ensure balance if intended business model will face concentrated buyer power. ;	Data Aggregator
IS - Internal Stakeholders - CO	Platform administrators		x		Early appointment relevant for training and feedback in	Data Ag-

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
Team - technical roles					technical design phase;	gregator
IS - Internal Stakeholders - CO Team	Dedicated staff partner organizations and volunteer contributors with an extended/formalized role during the co-design process	x	x	x	Which team members contribute under project assignments, which as long-term investments for their employers? Will particularly enthusiastic pioneer Community Members be recruited in informal roles to increase ownership, e.g. to produce initial contents in an organized manner? ;	0

3.4.3 Key observations

The pilot areas of the Swedish Demo Case have been replaced immediately before the baseline analysis, leading to a new configuration of stakeholders that requires further clarification.

The baseline analysis highlights the high environmental concern in Sweden in general, with water quality as a dominant issue. The Demo Case seems, therefore, well matched to the motives of citizens. At the same time, concerns and interests of the city of Stockholm featured prominently as a driver of the CO initiative. As the Swedish political landscape was described as highly decentralized and fragmented, the current weight of Stockholm Stad as a key stakeholder might simply reflect a certain difficulty to 'pin down' actors that are less visible. But it also suggests that one challenge of the CO will be to find a place in the institutional structure that can connect to a variety of political actors and not be tailored to 'fit' one actor, while maintaining a plausible and coherent frame of reference for citizen participation based on their interests.

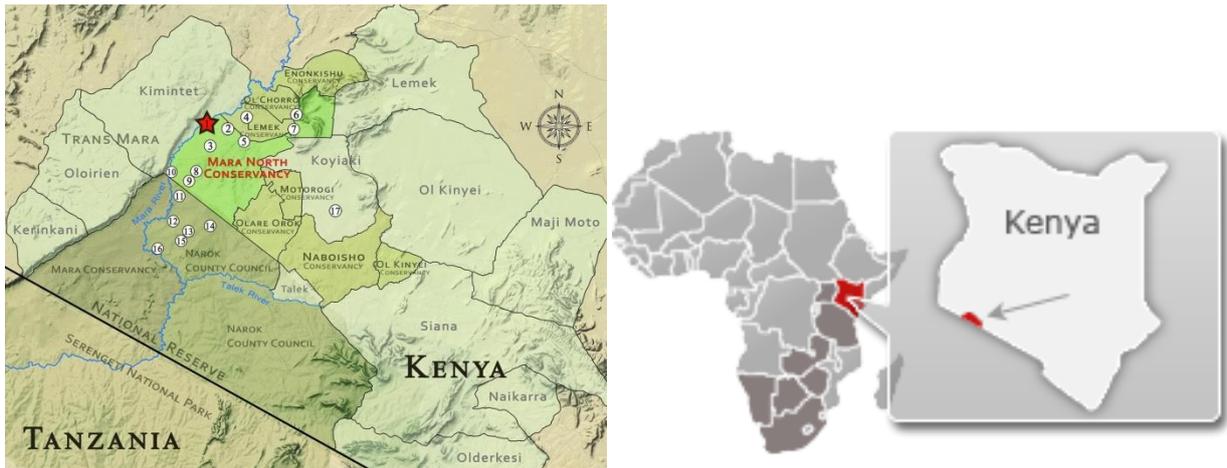
Furthermore, the analysis suggests a certain mismatch between the highly positive attitudes towards citizen participation in government agencies, and the capacity of the same institutions to integrate civilian contributions to planning processes in a meaningful way. By providing numerous unstructured communication channels for citizens, government entities might (inadvertently) promote a situation in which the most effective voice is one that stands out in a crowd. At the same time, the current process concentrates decision power in the hands of experts invited to the table, who might have an interest in maintaining a status quo in which it is possible to pick and choose which opinions to respect and which to ignore.

3.5 Biodiversity conservation in the Mara triangle, Kenya

3.5.1 Context Mapping⁹

The Demonstration case will take place in the ‘Mara triangle’, consisting of the Masai Mara National Reserve plus a number of nature conservancies around it. The areas are managed by different entities, but are accessible to tourists with one combined ticket and have no fences to separate the natural units.

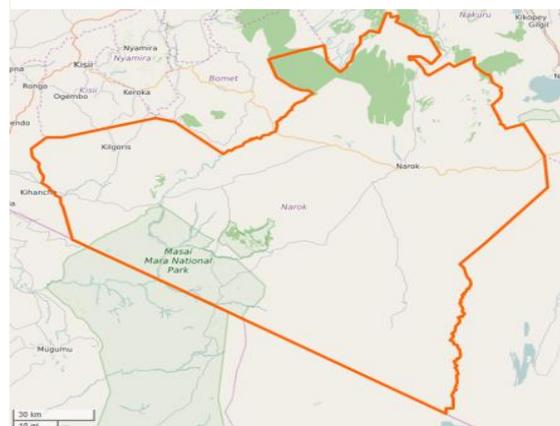
Fig 30 Target Area of the Kenyan Demo Case



Political Context: Kenya has three levels of government, the national level, provinces with little operational relevance, and a district level that has recently been dissolved and restructured into counties. Counties contain the constituencies of MPs and wards. The project area is located in Narok County (see Fig 31). Politically, the local situation is shaped by the fallout from this relatively recent reorganization. A few years ago, Kenya introduced counties as a new layer of government and devolved power to these local governments. The restructuring created a lot of uncertainty, including through overlapping jurisdictions and authority. People are considered to be little informed; few citizens know what has changed or where to go to address concerns. Even departments themselves don’t know who is has authority over issues.

Struggles between the national and local level over ‘*who has the right to decide*’ are a permanent feature and lead to long delays, for example experienced in recent the negotiation of a new water law. As a result, there is little willingness to cooperation, everything is kept ‘*in the family*’ of known and trusted groups. However, considerable effort has been invested over the

Fig 31 Boundaries of Narok County

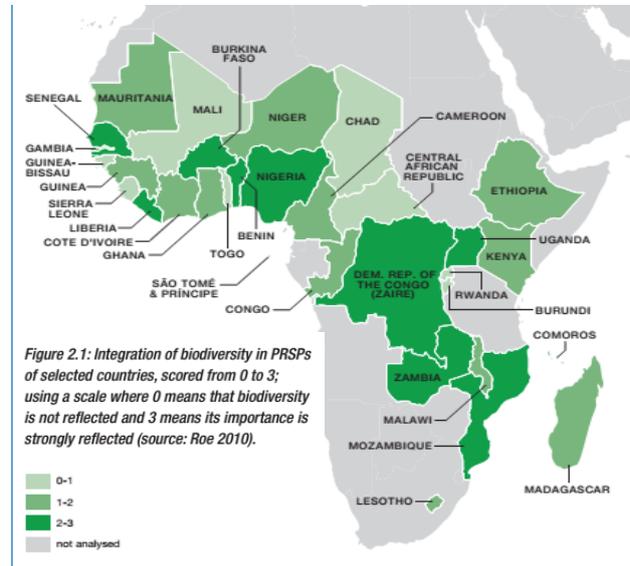


⁹ For statistical data and reports quoted, as well as additional background information see World Bank ‘Doing Business’ Analysis (<http://www.doingbusiness.org/data/exploreconomies/Kenya>), and International Telecommunications Union (<https://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>)

past years to establish a transboundary basin management system for the Mara catchment, which has created a network of connected actors experienced in collaborative planning in the area.

Wildlife and biodiversity conservation is subject to a patchwork of different entities. There is a mechanism of joint public-private management for both national reserves and conservancies, but the Kenya Wildlife service is responsible for wildlife, and technically manages the wildlife within areas managed by counties. With regard to biodiversity, UNEP and the Convention for Biological Diversity (CBD) report that Kenya implements National Biodiversity Strategies and Action Plans (NBSAPs), the main CBD instruments, at the national level (see Fig 32). With the political reform, the counties gained a mandate for managing biodiversity, but the issue is considered low on the political agenda.

Fig 32 Implementation of NBSAPs in Africa

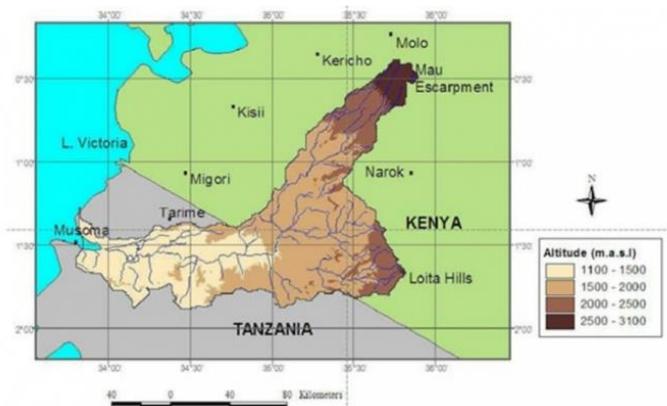


The main political conflict lines are created by budget allocation decisions. While decision powers are devolved, the budget is distributed centrally at the national level. Masai Mara is 'only' a reserve, not a national park, but it is one of Kenya's main tourist attractions, and tourism revenues alone make Narok one of the wealthiest counties and a valuable asset to the Kenyan economy. But the status of the local infrastructure does not match the importance as tourist destination, raising questions about both central infrastructure investments, and the use of reserve revenues at the local level. Representatives in Narok County are mainly Masai, but that does not mean that local Masai communities are the main beneficiaries of decisions.

Environmental Context: The Masai Mara reserve and the Serengeti National Park in neighbouring Tanzania are part of one shared ecosystem, divided by the river as both political and natural boundary. The Mara reserve is part of the annual wildebeest and zebra migration circle, the most spectacular wildlife event and tourist attraction which connects the two protected areas. But as Kenya and Tanzania compete for visitors in the parks, there is no visible transboundary collaboration between the management units.

As second natural unit, the project area is part of the Mara Catchment (see Fig 33), which might indirectly influence biodiversity conservation through water management decisions taken during droughts or create upstream-downstream conflicts.

Fig 33 Outline of the Mara Catchment



Social/Cultural: The Masai Mara National Reserve is located in the traditional tribal area of the Masai people (see Fig 34), the presence of an interaction with the tribal structure and culture is, therefore, an intrinsic aspect of the local situation. The culture is highly autonomous and self-contained, tribal councils are involved in local decision making.

Traditionally, the Masai people are pastoralists who place almost exclusive priority on the well-being of their cattle. Typically, these Masai do not hunt, so wildlife is not considered particularly valuable or even relevant, with the exception of predators attacking cattle. As the natural reserve is legally designed to ‘keep people out’, this does not create a direct conflict within the target area, but outside the reserve the perceived right to defend livestock will likely take precedence over any legal protection granted to the attacking predator. The Masai do feel the region including the reserves and conservancies are ‘their’ land, but increasingly see opportunities offered by tourists. Several families and tribes have opened their homesteads to tourists, which usually visit as a detour from safari vacations, thus connecting the economic opportunities to the wildlife conservation.

However, not all Masai are pastoralists, Narok County also houses the Purko Masai, who turned to farming long ago. Farms and livestock geographically separated, with farms located upstream. As a rule of thumb, farming Masai are more likely to be Christianised and more educated. In general, it seems that local diets and lifestyles are slowly changing, and while education used to create no conflicts with traditional lifestyles, more tribe members moving into agriculture might create internal conflicts.

Technical Context: Mobile connections in the project area are patchy, and almost no connectivity exists within the natural reserves (see Fig 35). However, most people have a phone and know where they get a connection. The internet is almost exclusively accessed via Smartphones, but data tariffs are prohibitively expensive, making it important to create offline functionality that can be synchronized once Wi-Fi is available.

The electrical grid is expanding, in part due to a government initiative to connect schools to the electricity grid. Solar energy is also expanding, driven by mobile phone providers and church initiatives, who package solar panels with batteries, light and mobile phone chargers. There is a substantial inequality in terms of access and uses of technology for men and women.

Fig 34 Traditional Masai tribal areas



Fig 35 Mobile network coverage in the project area

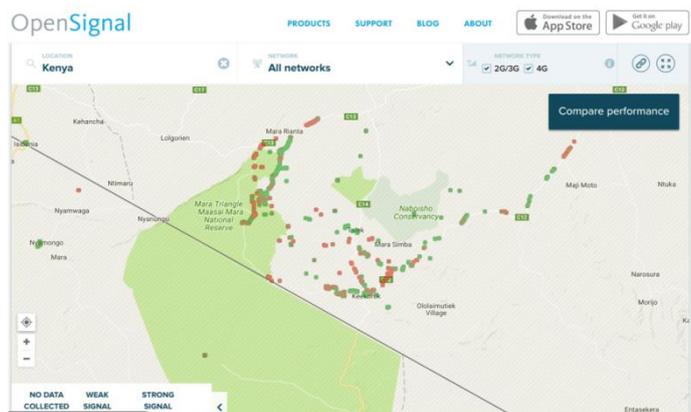


Fig 36 ITU Access and Usage Indicators 2016, Kenya

Economy	Fixed-telephone subscriptions per 100 inhabitants		Mobile-cellular subscriptions per 100 inhabitants		International Internet bandwidth Bit/s per Internet user		Percentage of households with computer		Percentage of households with Internet	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
82 Kenya	0.4	0.2 ²²	73.8	80.7	25'200	40'067	12.3	13.1	16.9	19.6

Economy	Percentage of individuals using the Internet		Fixed-broadband subscriptions per 100 inhabitants		Active mobile broadband subscriptions per 100 inhabitants	
	2014	2015	2014	2015	2014	2015
82 Kenya	43.4	45.6	0.2	0.3	9.1	15.5

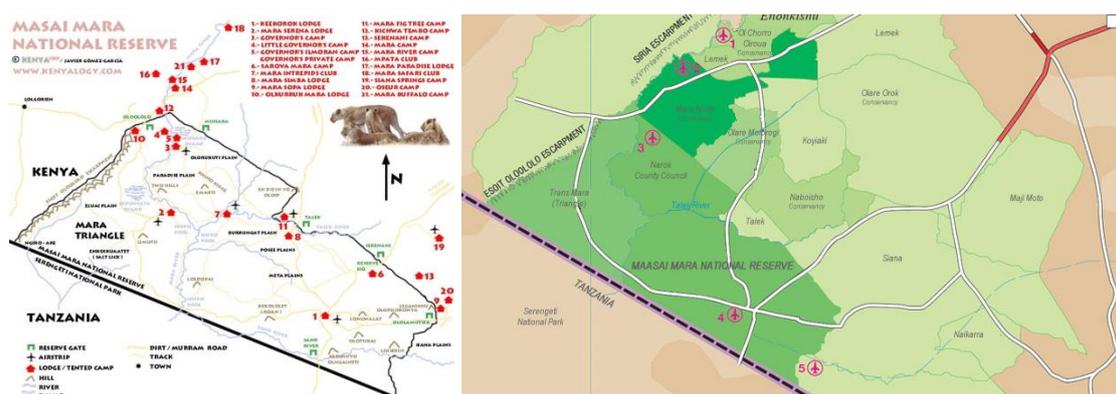
In terms of social networks, Facebook is considered the dominant network, in part because it is bundled with online access in the company's internet.org initiative. WhatsApp is gaining popularity also as a means for free phone calls. Twitter and other networks are less popular.

It is noteworthy that the main form of information sharing in the Masai culture is mouth-to-mouth, connected to the tradition to greet and share information whenever fellow tribesmen are encountered. Today, community radio is another main source for local information.

Economic Context: Narok is an economically productive county. Apart from livestock raising, it features large-scale maize farming in the East, wheat farming in the West, and tourism in the South. "Masai" is also a successful brand, and Masai traders roam whole country scouring for business opportunities and to import international goods for the local market. However, wealth is very unequally distributed.

With regard to the tourism sector, the county has a touristic infrastructure in the form of safari lodges and small airports for aerial tours (see Fig 37). Most of the lodges and tours are operated by international companies and concession holders.

Fig 37 Touristic infrastructure in Narok County



3.5.2 Stakeholder Inventory

Table 6 5 Demo Case Stakeholder Inventory, Kenya

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type	
		1	2	3			
Core Stakeholders - Community Members (Recruitment Targets)							
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Tourists –	x			Key users of the Apps	Key initially because of smartphone technology and English, fun/environmental conscious, want to see as many animals as possible, want to share what they have seen, want to contribute; Low authority and power; tourists as foreign individuals have barely any influence on the decision/policy making processes.; Likely positive due to expectation of social recognition from peers, and added entertainment for the safari schedule. ; More likely to be attractive if training or demo is available and simple, contribution are visible on social platforms back home, and technical and scheduling problems are avoided	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Local pastoralists (wildlife conflict issue) (--terms of smartphone use and language)			x		Considered low priority (because of smartphone availability and language). Needs to be clarified and aligned with objectives and concept of COs in GT 2.0; Currently unknown: Authority and power of (Masai) pastoralists requires further study, especially in terms of informal influence on the local decision making processes; clear focus on improving local livelihood, won't be interested if the benefits are focused only on tourists and the environment not the people living in the area.	0
CS - CO Members (Recruitment targets) - Citizen target groups - children	Schools – awareness for biodiversity and contribute	x				Low level of authority and power;	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens	MMWCA Local conservation organizations (300 members)	x			Key users of the Apps, Local conservation organizations (300 members) + important because provides local link, want to collect useful data, intrinsically motivates, have local knowledge (local experts), attitude mixed, some classic environmental protection, others also consideration livelihoods), limited resources, some well-connected, others	Low to medium authority and power; they have some well-connected and well known members and have an identity as guardians of the local wildlife;	Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
					very limited – some individual names well known , 3. Conservancy NGOs in the region have a strong presence and identity as guardians of the local wildlife. They are not expected to create a major conflict but might expect that work is submitted to their scrutiny and seek their approval and involvement.		
CS - CO Members (Recruitment targets) - Citizen Tagert Groups - Community Action groups	Community-based organizations			x		The level of authority and power differs from one CBO to another; depends on the objective and activities of the CBOs;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - major local presence						;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - leading employers						;	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Lodge owners, tour operators and tour guides	x			++ presentation of results in their venues , most immediate use, clusters, powerful, some quite exclusive and well connected, some strong eco profile (drives price up), lot of competition- little distinction of services, all affected by business cycles and international events, some owners Maasai, but most international owners (on Maasai land) – think customization/branding etc considerations - is there a colonial dimension to the tourism?	Medium to high level of authority and power (mostly because of their economic importance for the county);	Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Venture capital groups wanting to promote the lodges (MF)		x			;	0
CS - CO Members (Recruitment targets) - Business target group - "cor-						;	Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
porate citizens"							
CS - CO Members (Recruitment targets) - Policy target groups - decision-makers	Local government departments in need of data/Wardens and wildlife managers	x				key to test validity of data and usefulness of the map, endorsement provides legitimacy and necessary to prevent purely commercial app ; High level of authority and power;	Decision-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration						involved in the relevant local processes - usually identify as neutral technicians and brokers, interested in quality of outcome, including owners of current in-situ networks ;	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators						elected officials involved in the relevant local processes and local political agenda setting - usually identify as advocates for their constituency ;	Policy-maker
CS - CO Members (Recruitment targets) - Data Aggregators	Upande Ltd (VirtualKenya)	x				Low to moderate authority and power; mainly because of their expertise;	Data Aggregator
CS - CO Members (Recruitment targets) - Scientists	Researchers – Maasai Mara university	x				Low to moderate authority and power; mainly because of their expertise;	Scientist
Core Stakeholders - Experts & Advisors							
CS - Experts & Advisors - Design-Phase - experts citizen science						;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	IHE	x				; Low to moderate authority and power; mainly because of their expertise;	Scientist
CS - Experts & Advisors - Design-Phase - issue experts	African Conservation Center	x				;	0
CS - Experts & Advisors - Design-Phase - issue experts	DRSRS – wildlife counting via planes, issue-specific	x				;	0
CS - Experts & Advisors - Design-Phase - issue experts	National Museums of Kenya – mandate to track biodiversity, run archives and collections -	x				; Moderate level of authority and power because of their mandate to keep track of biodiversity (i.e. closely linked to the focus of the case);	0
CS - Experts & Advisors - Design-Phase - issue	Kenya Wildlife Service	x				;	0

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
experts							
CS - Experts & Advisors - Design-Phase - issue experts	Kenya Meteorological Department	x				; Moderate level of authority and power because of their mandate to monitor and forecast weather;	0
CS - Experts & Advisors - Design-Phase - issue experts	Survey of Kenya		x			;	0
CS - Experts & Advisors - Design-Phase - technology experts	MMWCA Local conservation experts	x				; Low to medium authority and power; they have some well-connected and well known members and have an identity as guardians of the local wildlife;	Citizen
CS - Experts & Advisors - Design-Phase - technology experts	Gavagai	x				; Low authority and power;	0
CS - Expert Advisors - Design phase - reality checkers citizen observatories	Leaders other GT 2.0 Demo Cases	x			GT2.0 partner	;	Citizen
CS - Experts & Advisors - Design phase - reality checkers local politics						;	Policy-maker
CS - Experts & Advisors - Long-term - local policy						;	Policy-maker
CS - Experts & Advisors - Long-term - science	Maasai Mara University	x				Key experts – contact yet, won't take the lead, happy to contribute and play a role Interested in seeing the technology and how it is used for data collection and linked to information and decision-making Do a lot of research, would like to see their work have an impact in society - "community-owned", bring in community ownership Low to moderate authority and power; mainly because of their expertise;	Data Aggregator
CS - Experts & Advisors - Long-term - science	Egerton university	x				further away, more agriculture ; Low to moderate authority and power; mainly because of their expertise;	0
CS - Experts & Advisors - Long-term - policy linkages	MaMaSe partners	x				Low to moderate authority and power; mainly because of their expertise;	Policy-maker
CS - Experts & Advisors - Long-term - policy linkages	Kenya Ministry of Environment and	x				High level of authority and power, especially at the national level;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase			Implications, comments, open questions	Type
		1	2	3		
es	Natural Resources, Forestry					
Enabling Environment - Regulatory Entities						
EE - Regulatory Entities - political process - Supra-national bodies					;	Policy-maker
Vested Interests	National legislators		x		High level of authority and power, at the national level;	Policy-maker
EE - Regulatory Entities - political process - Legislators - national	Local MPs			x	;	0
EE - Regulatory Entities - political process - Legislators - sub-national 1					;	Policy-maker
EE - Regulatory Entities - political process - Legislators - sub-national 2					;	Policy-maker
EE - Regulatory Entities - political process - Legislators - local	County council	x			Locals have a say, opposition might sway opinions, decision authority High level of authority and power, at the local level;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	National ministries – forestry		x		Departments little say – won't interfere, ministry of forestry might be interesting to open doors locally; High level of authority and power, especially at the national level;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	Kenya Wildlife service	x			interesting to open doors locally ;	0
EE - Regulatory Entities - political process - Executive/Administration - national	Other national agencies			x	Departments little say – won't interfere;	0
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1					;	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-					;	Policy-maker

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
national 2							
EE - Regulatory Entities - political process - Executive/Administration - local	County executive	x				; High level of authority and power, at the local level; Likely positive expectations of information useful for the management of the parks in the county, however, the direct benefits for the county are likely low; Scepticism likely due to disappointment from many previous unsuccessful initiatives in the areas which creates scepticism about the ability of this initiative to be any different and to able to benefit the citizens. Also, citizens and officials are tired of surveys, meetings and interviews required by those initiatives.	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - local	Dept. for environment, energy, natural resources, water & Irrigation,	x				executive committee member Rebecca Nkowua; High level of authority and power, especially at the national level;	0
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	Management nature reserve and conservancies – clarify and subdivide	x				Do they report, how do they report?;	Decision-maker
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	Working groups/officials involved with CIDP process	x				;	0
EE - Regulatory Entities - political process - Other regulatory entities	Catchment management entities		x			High level of authority and power, at the regional level;	Policy-maker
EE - Regulatory Entities - political process - Auditors & oversight						;	Policy-maker
EE - Regulatory Entities - political process - Auditors & oversight						;	Policy-maker
EE - Regulatory Entities - project - Standardization bodies	GEOSS, OGC, COB-WEB, INSPIRE					;	0
EE - Regulatory Entities - project - Donors - Funding Authority	EU, Development Banks, National Funding Agencies/Ministries					;	0
EE - Regulatory Entities -	EASME, Universities					;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
project - Donors - Executive agencies	or NGOs acting as grant administrators under framework contracts						
EE - Regulatory Entities - project - Hosting Organizations/ Statutory Agencies	Partner organizations of the project consortium					;	0
Enabling Environment - Allies & Umbrella Movements							
EE - Allies & Umbrella Networks - Endorsing organisations - local	Kenya Tourism Federation (145 organizations)			x	Start with individuals first	High level of authority and power, They have several important member organizations and their vision is to be the authoritative voice for Kenya's tourism industry;	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - regional						;	Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - global						;	Citizen
EE - Allies & Umbrella Networks - Local Allies	USAID Prepared project	x			Working with them already	;	Citizen
EE - Allies & Umbrella Networks - Local Allies	JRS joint research ?	x			Working with them already	;	0
EE - Allies & Umbrella Networks - Local Allies						;	0
EE - Allies & Umbrella Networks - Regional Allies						;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - Citizen Science	Map of life – global biodiversity database, global biodiversity standard setters, partner in two local projects	x			Working with them already	Global biodiversity database, global biodiversity standard setters, partner in two local projects; Low level of authority and power;	Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - professional association						;	Citizen
EE - Allies & Umbrella Networks - Umbrella						;	Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
Movements - issue related movements							
Enabling Environment - Media & The Public							
EE - Media & the Public - Relevant Societal Groups	County Maasai – check for clans and their interests (e.g. pastoralists, agriculture, traders)			x	Not needed to start activities	Currently unknown: Authority and power of Maasai requires further study, especially in terms of informal influence on the local decision making processes;	Citizen
EE - Media & the Public - Relevant Societal Groups							0
EE - Media & the Public - Neutral multipliers	Churches			x	Not needed to start activities		Citizen
EE - Media & the Public - Communication channels to citizens				x	Only after implementation	Maasai mouth-to-mouth tradition – consider role of storytelling	Citizen
EE - Media & the Public - Formal Media - newspapers							0
EE - Media & the Public - Formal Media - TV							0
EE - Media & the Public - Formal Media - Radio	Community radio			x			0
EE - Media & the Public - Formal Media - Online							0
EE - Media & the Public - Social media	Dominant social network (e.g. Facebook)			x	Not needed		Citizen
EE - Media & the Public - Social media		-				WhatsApp and camera phones popular, consider group functions	0
Enabling Environment - Opposition & Critics							
EE - Opposition & Critics - Low resource target groups						;	Citizen
EE - Opposition & Critics - Vested Interests	Museums (want to be seen as data collectors)	x			Already working with them	Low level of authority and power;	Policy-maker
EE - Opposition & Critics - Vested Interests	Government entities benefiting from the current opacity				on-the-go	High level of authority and power;	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
EE - Opposition & Critics - Antagonists	Critics who find the focus too narrow (holistic perspective needed for benefit of local population – experienced with MaMaSe project),	x			Immediate needs	holistic perspective needed for benefit of local population – experienced with Maasai people in MaMaSe ;	Citizen
EE - Opposition & Critics - Antagonists	Stakeholders concerned about poaching	x			To avoid resistance since the app to be developed could lead people to the animals	;	0
EE - Opposition & Critics - Antagonists	Groups opposed to “outsiders” collecting the data to influence local policy				on-the-go	;	0
EE - Opposition & Critics - Commercial competitors		x			Engage them after initial investigations	Check existing biodiversity collection apps ;	Data Aggregator
EE - Opposition & Critics - Resource competitors	Groups who might perceive CO as competition	x			Engage them after initial investigations	;	Citizen
EE - Opposition & Critics - Resource competitors	WILD app	x			Already working with them	;	0
EE - Opposition & Critics - Change resistance						;	Policy-maker
EE - Opposition & Critics - Citizen science sceptics						;	Citizen
Market Forces - Shareholders and Investors							
MF - Shareholders and investors - Public Funder						Ministries, departments or agencies - Financing projects under a national or local political mandate ;	Decision-maker
MF - Shareholders and investors - Private Donors						Foundations, larger NGOs - Financing projects according to specific values/convictions ;	Citizen
MF - Shareholders and investors - Sponsors						Companies - Financing project in exchange for visibility ;	Citizen
MF - Shareholders and investors - Joint Venture						Partner companies - Investment in expectation of commercial success;	Data Aggregator
MF - Shareholders and investors - Lenders						Banks - Provide credit in expectation of repayment;	0
MF - Shareholders and investors - Shareholders						Crowdsourcing - Provide liquidity in expectation of future profits ;	Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
MF - Shareholders and investors - In-kind Donors Hardware/Software						e.g. companies/organizations hosting platforms for free - restricts design options ;	Data Aggregator
Market Forces - Suppliers							
MF - Suppliers - Technical Components	TAHMO-KEN	x			For take-up after project	Low to moderate authority and power; mainly because of their expertise;	Data Aggregator
MF - Suppliers - Platform/Data Technology	Upande Ltd (VirtualKenya)	x			For take-up after project	Low to moderate authority and power; mainly because of their expertise;	Data Aggregator
MF - Suppliers - Apps and Services						;	Data Aggregator
MF - Suppliers - Commercial data providers						;	Data Aggregator
MF - Suppliers - Academic knowledge providers						;	Data Aggregator
Market Forces - Buyers							
MF - (Prospective) Customers - Public clients						Buyer of technology components or services;	0
MF - (Prospective) Customers - Users						Subscribers to paid services ;	0
MF - (Prospective) Customers - Marketing agencies						Buyers of 'access' to community for ads;	0
Internal Stakeholders							
IS - Internal Stakeholders - Project Management	GT 2.0 PMT					Are interests coherent? Do developments in the co-design process match project and partner objectives? Are there conflicts with the transition to a post-project organization?;	0
IS - Internal Stakeholders - Project Staff, consultants and subcontractors	Dedicated project staff all partners GT 2.0 consortium					Are the skills and experiences of all consortium partners known and optimally used for the DC? ;	0
IS - Internal Stakeholders - Advisory Bodies	Advisory Committee and Steering Committee					;	0
IS - Internal Stakeholders - Host organizations - support staff	Support staff all partners GT 2.0 consortium					;	0
IS - Internal Stakeholders - CO Leadership	UNESCO-IHE					Do the interests of DC leaders align with the trajectory of the co-design process? ;	Scientist
IS - Internal Stakeholders - CO Team - community						Initiation of the CO Community will require 1-2 staff of partner organizations or activists identified in the first interac-	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Priority Assessment: Engage in phase				Implications, comments, open questions	Type
		1	2	3	reason		
organizers						tion moment to do the "leg work" involved in recruiting and mobilizing Core Stakeholders;	
IS - Internal Stakeholders - CO Team - commercialization leaders						Lead partner to ensure systematic consideration of the DC potential for future upscaling and transition to a sustainable operational model? Note potential conflicts of interests with a community driven co-design process. Ensure balance if intended business model will face concentrated buyer power. ;	Data Aggregator
IS - Internal Stakeholders - CO Team - technical roles	Platform administrators		x			Early appointment relevant for training and feedback in technical design phase;	Data Aggregator
IS - Internal Stakeholders - CO Team	Dedicated staff partner organizations and volunteer contributors with an extended/formalized role during the co-design process	x	x	x		Which team members contribute under project assignments, which as long-term investments for their employers? Will particularly enthusiastic pioneer Community Members be recruited in informal roles to increase ownership, e.g. to produce initial contents in an organized manner? ;	0

3.5.3 Key observations

The current design of the Demo Case places a premium on the generation of basic data for wildlife management. Local governments are described to lack even the most basic sets of data considered necessary to make informed decisions about resource management. The underlying vision is to fill this blank in “government infrastructure” to enable fundamental decisions such as the definition of conservation targets, the design of indicators, the marking of roads, or basic monitoring. Tourists are targeted as key ‘citizens’, as it can be assumed that they are equipped with the necessary hardware, language skills and interests in the issue.

But while tourists represent an attractive target market from a commercial perspective, the role of tourists in the GT2.0 ‘feedback-loop’ of participatory decision-making requires clarification (see section 1.1), especially since the main interests of tourists might not match the information needs of the local administration. For example, while the spectacle of the annual wildebeest migration is the main touristic event of the year, the interview characterised it as ‘*not relevant*’ to the Demo Case. Furthermore, considering the mistrust in the political culture, the project might face scepticism regarding data collected by “outsiders”.

Decision-making processes in Narok County will require additional attention in the initial design phase, to identify clearer connections to local politics, as well as opportunities to involve local communities.

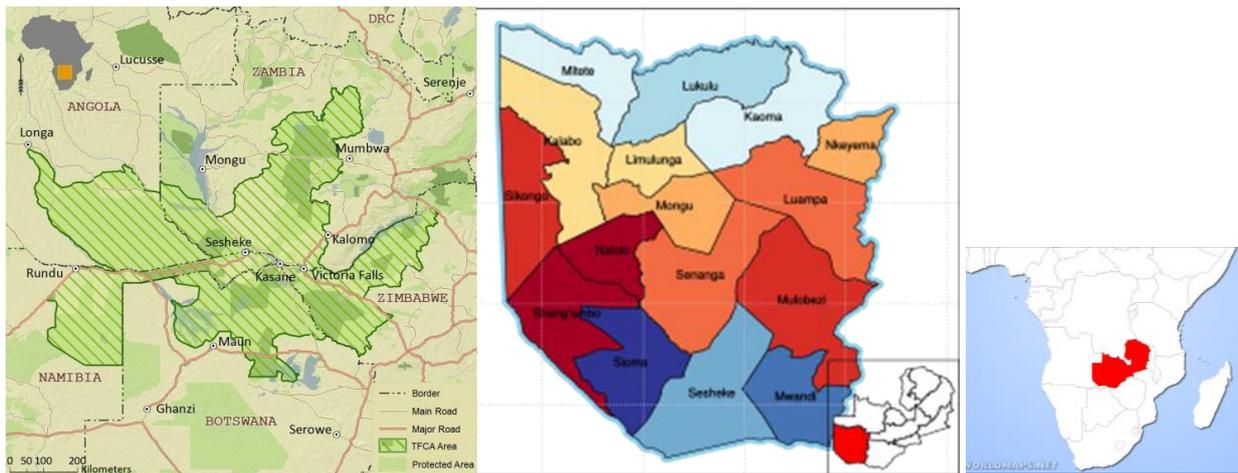
It should be noted that the Masai tradition (or social obligation) of sharing information as part a greeting at every encounter represents a specific form of citizenship and ‘social networking’. The Demo Case might, therefore, provide interesting insights regarding the use of traditional customs and ‘story telling’ in citizen observatories.

3.6 Community-based natural resource management in the Silwana-Complex, Zambia

3.6.1 Context Mapping¹⁰

The Demo Case will take place in the so-called Silwana Complex the Zambian part of the 5-country Kavango-Zambezi Transfrontier Conservation Area (KAZA-TFCA, see Fig 38), including a 5,000 km² wild-life protected area and a 4,000 km² buffer zone around it. The KAZA-TFCA was established by an international treaty that designates the protected area and outlines a management framework, but administration falls under the authority of individual national governments. The Demo Case is part of a broader government-funded capacity development effort to implement a local integrated development programme for the area, and ultimately contribute to the TFCA treaty obligations. The broader project has already completed two activity phases since 2009, creating a relationship with local authorities that the Demo Case will draw on.

Fig 38 Target Area of the Zambian Demo Case



Political Context: Zambia has four formal levels of government, a national level as centre of political power, provinces headed by a provincial minister, districts headed by district Commissioners, and sub-districts. The project area is located in two districts, Sioma and Sesheke, in the province of Western Zambia. The district and provincial level has some relevance to the project due to their involvement in spatial planning, infrastructure and development projects. But the key focus for the purpose of the CO is the interplay between national and sub-district decision-making.

The sub-district level contains three different overlapping types of political entities. The first are constituencies of local elected representatives, the second the hereditary chiefdoms of the traditional tribal system, the third one are game management units established under the national Wildlife Act, the central focus of attention for the CO. Game Management Areas follow the boundaries of traditional chiefdoms, with the chief as patron, but the authority of chiefdoms are regulated under a different law and

¹⁰ For statistical data and reports quoted, as well as additional background information see World Bank 'Doing Business' Analysis (<http://www.doingbusiness.org/data/exploreconomies/Zambia>), and International Telecommunications Union (<https://www.itu.int/en/ITU-D/Statistics/Pages/default.aspx>)

administered by a different ministry. Usually, the three sub-district entities are complementary, but overlaps can occasionally create tension.

Community Resource Boards (CRBs), the target authorities of the CO, can be established on application of the local community under the Wildlife Act. They consist of elected members from the local community, plus representatives of the chief, the local council and the ministry. Their mandate includes involvement in wildlife management and the development of resource management plans, and entitlement to a percentage of income generated from utilisation of local resources through, for example, hunting licenses or filming permissions. CRBs have been set up with varying success across Zambia, strongly reflecting the presence of commercially interesting resources in different areas. The Silwana area has been lagging behind mainly because there are few sources of revenues from wildlife management. In general, the CRBs are designed as a means to delegate authority over natural resource management back to local communities, however, there is a discrepancy between ambition and performance, and a number of aspects suggest that the structure of the scheme itself does not fully match the aspiration generally due to capacity limitations, implementation failure and a narrow focus on a wildlife based model.

Over the past few years, plans for community-based decision making have been included in several other laws, including those for water management, forestry and fisheries. The laws suggest that existing CRBs should be used where they already exist instead of creating new community structures, however, there seem to be few efforts to provide the “empowered” CRBs with proper resources to fulfill their expanding mandates. Resource requirements of regular CRB elections are high, frictions occur between different policy agendas, and frequently, vested interests affect decisions regarding the use of funds allocated under benefit sharing schemes. In 2014, the Ministry of Wildlife dissolved all CRBs; a number of them have not been re-constituted since. CRBs do not have the same role in timber licences and concessions as they do under wildlife legislation. However, a new opportunity in forestry has emerged with the new provision for community forestry which will grant communities rights to manage and benefit from forests that are declared as community forests.

Environmental Context: The project region is located in a transitional landscape moving from wet woodlands to the dryer landscape of the Kalahari sand, a distinct landscape that is a strong source of local identity (see Fig 39).

Two environmental boundaries play a role in the project context. First, the project area features one of the highest elephant population densities in the region, creating extensive human wildlife conflicts (see. The local population considers elephants a problem and in direct and existential conflict with their livelihood (“The elephants are as interested in your crop as you are”), conservation efforts, therefore, contain mitigation measures against animal damage as a prominent feature.

Fig 39 Ecoregions Zambia

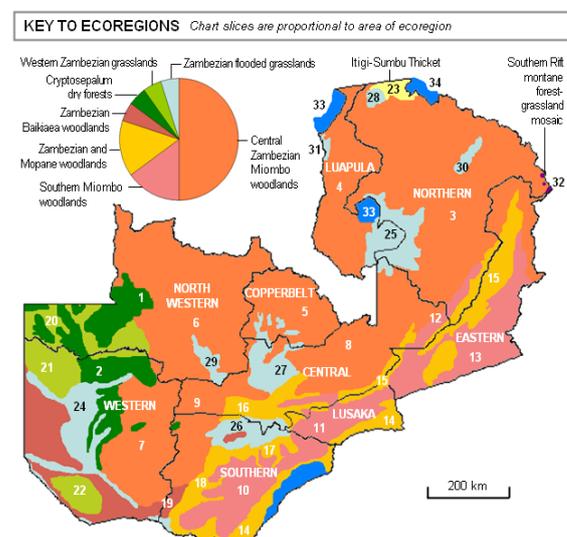
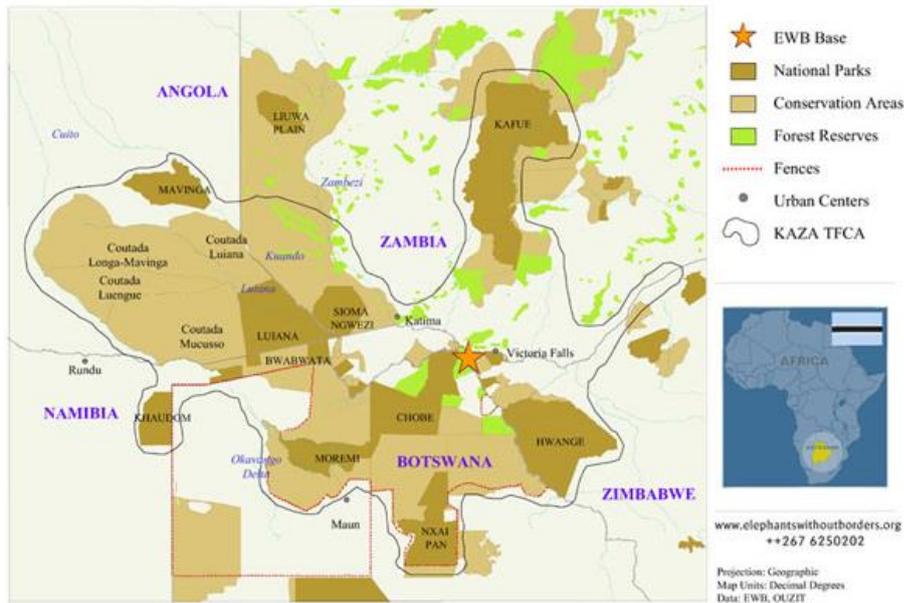


Fig 40 Elephant Population in the KAZA-TFCA

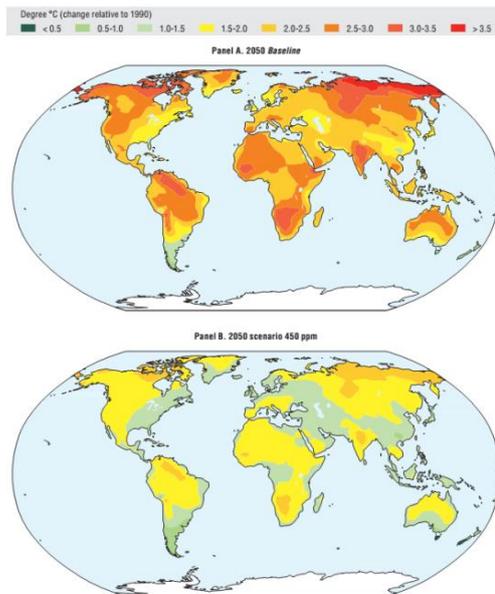


Secondly, Silwana is located in the upstream sections of the Zambezi catchment, revealing the local forests as a valuable provider of ecosystem services for sustainable catchment management. Timber harvesting and generally increasing water stress already focuses more attention on the deteriorating catchment, and increase pressure on the community. As part of a low rainfall belt, the area is strongly dependent on the river, and climate change related changes in weather patterns increase the need to create adaptation strategies (see Fig 41).

Social/Cultural Context: The culture is defined by traditional tribal structures - the region used to be a nation run by a system of kings and Chiefs, who remain powerful today. CRBs are generally homogenous in terms of tribal affiliation and language, with stratification according to gender and age. The project area is very remote and sparsely populated, urban-rural migration and distinctions though not very significant, are nonetheless evident in the number of people who have returned to settle in their home areas after retirement. This has some influence on the language and levels of literacy. Accordingly, the cultural reference points are mainly local.

Fig 41 Climate Change Scenarios predicting a 'hot spot' in the project area

Figure 3.10. Change in annual temperature: Baseline and 450 ppm scenarios, 1990-2050



Source: OECD Environmental Outlook projections, output from IMAGE.

Technical Context: Mobile phone ownership is spreading despite the remote location, and cell phone coverage is growing fast. Nevertheless, data tariffs remain prohibitively high, functionality of apps has to provide offline functions that can be synchronized once free WiFi connections are in range. Affordable Chinese smartphone models are particularly popular, as people like cameras and sharing pictures. WhatsApp and Facebook are the most popular social networks. Community radio is a key source for local information.

Fig 42 ITU Access and Usage Indicators 2016, Zambia

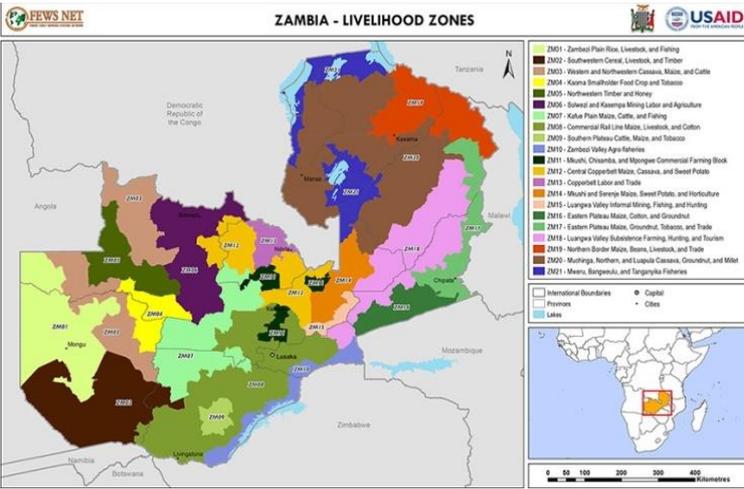
Economy	Fixed-telephone subscriptions per 100 inhabitants		Mobile-cellular subscriptions per 100 inhabitants		International Internet bandwidth Bit/s per Internet user		Percentage of households with computer		Percentage of households with Internet	
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015
174 Zambia	0.8	0.7	67.3	74.5	3'434	3'187	6.6	7.4	10.1	12.7

Economy	Percentage of individuals using the Internet		Fixed-broadband subscriptions per 100 inhabitants		Active mobile broadband subscriptions per 100 inhabitants	
	2014	2015	2014	2015	2014	2015
174 Zambia	19.0	21.0	0.1 ³⁰	0.1 ³⁶	8.8 ³⁹	13.8

Economic Context: The majority of the local population engages in subsistence farming with low productivity. The area used to be rich at fisheries, but fish stocks have been significantly depleted. Similarly, a tradition of cattle raising was destroyed by an animal pest so herd sizes tend to be small.

The area has the highest timber producing areas in the country (see Fig 43), but timber concessions are mainly held by Chinese companies harvesting at industrial scales. Under a new policy scheme communities will gain the right to declare community forests. But the frame has not been implemented yet, leaving currently little of the benefits with the locals. The local importance of timber makes forests a particularly important aspect of CBNRM is the project area, both to share in benefits from timber harvesting, and to be able to explore alternative uses, such as payments for ecosystem services in catchment management.

Fig 43 Main sources of livelihoods in Zambia per region



Wildlife tourism is an area of interest, and some lodges already exist along the river mainly for sport fishing, providing some employment opportunity and market for local produce. However, the sector is small and informal; opportunities for upscaling are being explored by the respective ministries and project partners.

3.6.2 Stakeholder Inventory

Table 7 Demo Case Stakeholder Inventory, Zambia

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
Core Stakeholders - Community Members (Recruitment Targets)			
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Villagers concerned about revenue situation (allocation timber revenues, potential community forestry benefits (sustainable forestry as well as PES for catchment management)	Potential source of failure, is created by local experience with and responses to donor-funded projects. Participants with a positive attitude towards the project goals and project partners might, in fact, contribute to do us a favour and not as an act of conscious and long-term self-empowerment as envisioned by Ground Truth 2.0. This aspect is a crucial, hidden and easily overlooked challenge for project communication.	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Villagers concerned about "centralized" approach to CRB	influence of CRBs on spending decisions of shared benefits creates strong vested interests, CO might serve to bring more transparency into the process	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Villagers interested in potential from wildlife tourism (employees/suppliers lodges)	local wildlife tourism mostly informal and thus very restricted, analyse conflicts of interest with timber	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Villagers engaged in human-animal conflict discussions	1. Attitudes towards conservation: in general, nature protection and conservation is perceived as an elitist and/or colonial concern. [Proponents of this view might oppose the project on principle, opponents of the project might exploit this attitude]	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Villagers concerned about water scarcity	Water stress becoming more important locally, also connection to Zambesi catchment	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - individuals	Villagers affected by loss of local fish stock/livestock	sensitive to "environmental health" as an issue	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - children	Schools/Teachers (TAHMO-Ken Schools with weather stations)	WWF Weather data - sanctioned by Dept Meteorology not yet linked to national weather service	Citizen
CS - CO Members (Recruitment targets) - Citizen target groups - organized citizens			Citizen
CS - CO Members (Recruitment targets) - Citizen Target Groups - Community Action groups	WWF Zambia field coordinators		Citizen
CS - CO Members (Recruitment targets) - Business target groups - major local presence		check influence of aid sector	Citizen
CS - CO Members (Recruitment targets) - Business target groups - leading employers		likely little relevance, majority of population subsistence, but limitation of formal jobs might increase importance of each employer	Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Tourism actors - local lodges, guides		Citizen
CS - CO Members (Recruitment targets) - Business target groups - reliant on environmental/natural resources	Local timber producers	likely conflict of interest, will likely lose power with implementation of right to declare community forests	Citizen
CS - CO Members (Recruitment targets) - Business target group - "corporate citizens"			Citizen
CS - CO Members (Recruitment targets) - Policy target groups - decision-makers		check for 'process owner' in local departments	Decision-maker
CS - CO Members (Recruitment targets) - Policy target groups - administration	Community Scouts	funded WWF, employed by community)	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators	24 Village Action Groups in Game Management Area	each village has a group, they select members of the CRB (really new in this area, people to not see benefit yet, in other areas very popular, people want to join because involved in creating share in benefits for community)	Policy-maker
CS - CO Members (Recruitment targets) - Policy target groups - policy-makers/legislators	2 Community Resource Boards (Mufulani & Sesheke)	2. Local communities might oppose the project because and as long the connection between Environmental Protection and well-being remains unclear. While elephants present a 'clear and imminent danger' to their crops, the mechanisms and systemic aspects of ecosystem services and environmental health are often too subtle or too complex to address directly. This can create the perception that 'elephants' [and everything they stand for] are valued higher than people and development.	Decision-maker
CS - CO Members (Recruitment targets) - Data Aggregators	WWF Zambia project staff	implementing scheme on behalf of Zambian government, and as part of larger projects in the area. Potential overlaps and role conflicts. Supportive because empowerment of local communities key value for WWF activities	Data Aggregator
CS - CO Members (Recruitment targets) - Scientists	Local: Livingstone International University	tourism seems important department	Scientist
Core Stakeholders - Experts & Advisors			
CS - Experts & Advisors - Design-Phase - experts citizen science	Nature Conservancy	(doing similar things neighbouring area = "peer review")	Scientist
CS - Experts & Advisors - Design-Phase - experts citizen science	AKVO		Data Aggregator
CS - Experts & Advisors - Design-Phase - experts citizen science			0
CS - Experts & Advisors - Design-Phase -	Peace Parks Foundataion	(active in the site , remote sensing data)	Scientist

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
issue experts			
CS - Experts & Advisors - Design-Phase - issue experts	WWF Zambia CCCDP project staff	(e.g. weather data collection, conservation agriculture experts)	0
CS - Experts & Advisors - Design-Phase - issue experts	Zambia Department for wildlife – area wardens		0
CS - Experts & Advisors - Design-Phase - issue experts	Central Statistical Office	data census, economic status experimental natural resource	Policy-maker
CS - Experts & Advisors - Design-Phase - issue experts	Dept Meteorology	official weather data	Policy-maker
CS - Experts & Advisors - Design-Phase - issue experts	Land Survey – under ministry of land, central level, district level		Policy-maker
CS - Experts & Advisors - Design-Phase - issue experts	Elephant census / CITES –	check for experts on models to reduce human-animal conflicts, local-to-local narratives of damage mitigation/co-existing with animals in other areas	0
CS - Experts & Advisors - Design-Phase - technology experts	AKVO		Data Aggregator
CS - Experts & Advisors - Design phase - reality checkers citizen observatories	Zambia CBNRM Forum	initiative to share experiences	Citizen
CS - Expert Advisors - Design phase - reality checkers citizen observatories	Leaders other GT2.0 Demo Cases	built.in' peer review	Citizen
CS - Experts & Advisors - Design phase - reality checkers local politics		Check for experienced political operators, e.g. retired senior officials, with intimate knowledge of the dynamics and its written and unwritten rules, in particular relationships between different national level ministries, and centre-periphery dynamics	Policy-maker
CS - Experts & Advisors - Long-term - local policy			Policy-maker
CS - Experts & Advisors - Long-term - science	3 national universities – WWF has contacts		Data Aggregator
CS - Experts & Advisors - Long-term - policy linkages	Secretariat Transfrontier Conservancy –	as activities include treaty obligations, connected player	Policy-maker
CS - Experts & Advisors - Long-term - policy linkages	Zamcom water data collection	might provide insights on opportunities for PES schemes	0
Enabling Environment - Regulatory Entities			
EE - Regulatory Entities - political process - Supra-national bodies			Policy-maker
EE - Regulatory Entities - political process - Legislators - national	National Legislators	3. Political parties and political actors present a potential source of conflict, as they might seek to politicize discussions for personal gain, which might involve attempts to gain control over the project or its outcomes	Policy-maker

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
EE - Regulatory Entities - political process - Legislators - sub-national 1			Policy-maker
EE - Regulatory Entities - political process - Legislators - sub-national 2			Policy-maker
EE - Regulatory Entities - political process - Legislators - local			Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	National ministry of Tourism and Arts (Department of National Parks and Wildlife)	only ones to collect specific data at some level	Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - national	Ministries of Lands and Natural Resources (Dept of Forestry) Ministry of Fisheries and Livestock	•also mandates to set up community resource boards, but only done on a pilot basis – in the law acknowledges that CRB created under wildlife legislation should be used	0
EE - Regulatory Entities - political process - Executive/Administration - national	[update national entities involved under wildlife act – ministry traditional Affairs; entity in charge of administering the benefit sharing “rake back” payments] Dept of National Parks and Wildlife		0
EE - Regulatory Entities - political process - Executive/Administration - national	Water Resources Management Authority	new entity in charge of management the catchment areas (charge to establish water user associations and catchment councils) – WWF Zambia also involved	0
EE - Regulatory Entities - political process - Executive/Administration - national			0
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1	Western Province – Province Minister		Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 1	Planning authorities (development projects, infrastructure: provincial level		0
EE - Regulatory Entities - political process - Executive/Administration - sub-national 2	Distric commissioners Sioma - need to be informed		Policy-maker
EE - Regulatory Entities - political process - Executive/Administration - sub-national 2	District commissioner Sesheke – need to be informed		0
EE - Regulatory Entities - political process - Executive/Administration - sub-national 2	Planning authorities (development projects, infrastructure: district level		0
EE - Regulatory Entities - political process - Executive/Administration - local	Sub-district – elected officials constituencies/wards	3. Political parties and political actors present a potential source of conflict, as they might seek to politicize discussions for personal gain, which might involve attempts to gain control over the project or its	Policy-maker

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
		outcomes	
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	Sub-district – chiefs		Decision-maker
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	CRB elected members		0
EE - Regulatory Entities - political process - Executive/Administration - local sub-divisions	CRB appointed representatives		0
EE - Regulatory Entities - political process - Other regulatory entities	Transfrontier conservation treaty parties		Policy-maker
EE - Regulatory Entities - political process - Other regulatory entities	Zamcom treaty partners		0
EE - Regulatory Entities - political process – Auditors & oversight			Policy-maker
EE - Regulatory Entities - political process – Auditors & oversight			Policy-maker
EE - Regulatory Entities - project - Standardization bodies	GEOSS, OGC, COBWEB, INSPIRE	Defines technical parameters project has to comply with to fulfil commitments regarding data accessibility and compatibility (might involve two-way dialogue - project can engage to set standards)	0
EE - Regulatory Entities - project - Donors - Funding Authority	EU, Development Banks, National Funding Agencies/Ministries	Defines framework objectives as part of calls for proposals, approves project contents and shapes objectives (boundary condition for user-based design). As 'owner' of policy able to (re-)negotiate meanings	Policy-maker
EE - Regulatory Entities - project - Donors - Executive agencies	EASME, Universities or NGOS acting as grant administrators under framework contracts	Implements regulation on behalf of the funding authority, monitors compliance and acts as enforcer of externally negotiated meaning (boundary condition for user-based design)	Policy-maker
EE - Regulatory Entities - project - Hosting Organizations/ Statutory Agencies	Partner organizations of the project consortium	legal counterpart of funding authority, sets operational parameters (e.g. financial rules, employment) for project teams; determines resource availability, including extra staff support, communication channels, infrastructure;	0
Enabling Environment - Allies & Umbrella Movements			
EE - Allies & Umbrella Networks - Endorsing organisations - local			Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - regional			Citizen
EE - Allies & Umbrella Networks - Endorsing organisations - global			Citizen
EE - Allies & Umbrella Networks - Local	Water-related interest groups (via		Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
Allies	ZAMCOM(Zambesi Catchment management)		
EE - Allies & Umbrella Networks - Local Allies	Wildlife related interest groups (via activities in Transfrontier conservation area)		0
EE - Allies & Umbrella Networks - Regional Allies	Regional elephant census/conservation groups		Citizen
EE - Allies & Umbrella Networks - Regional Allies	SADC (e.g. Regional Environmental Education Programme (SADC-REEP)?)		0
EE - Allies & Umbrella Networks - Regional Allies			0
EE - Allies & Umbrella Networks - Regional Allies			0
EE - Allies & Umbrella Networks - Umbrella Movements - Citizen Science	New national initiative to coordinate/share experiences on community engagement		Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - professional association			Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements			Citizen
EE - Allies & Umbrella Networks - Umbrella Movements - issue related movements			0
Enabling Environment - Media & The Public			
EE - Media & the Public - Relevant Societal Groups	Local residents – majority are subsistence farmers		Citizen
EE - Media & the Public - Neutral multipliers			Citizen
EE - Media & the Public - Communication channels to citizens	Local NGOs		Citizen
EE - Media & the Public - Communication channels to citizens	Zambia civil society climate change network		0
EE - Media & the Public - Formal Media - TV			0
EE - Media & the Public - Formal Media - Radio	Community Radio	key source of local information	0
EE - Media & the Public - Formal Media - Online			0
EE - Media & the Public - Social media	Whatsapp and Facebook as popular social media, people like smartphones (cheap Chinese models) with cameras to share pictures		Citizen

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
Enabling Environment - Opposition & Critics			
EE - Opposition & Critics - Low resource target groups	CRB members concerned about resource requirements– expanding mandates, natural resources, fisheries, forestry, but no compensation	groups who might be motivated to participate in finished platform, but need incentives to contribute to the design process	Citizen
EE - Opposition & Critics - Vested Interests	Timber companies (Chinese logging companies and everybody benefitting from their activities)		Policy-maker
EE - Opposition & Critics - Vested Interests	Forestry department (do not consult on issuing timber licenses)		0
EE - Opposition & Critics - Vested Interests	Position of “politicians” (especially in election times) somewhat unpredictable		0
EE - Opposition & Critics - Vested Interests	Game Poachers/illegitimate settlements/lodges		0
EE - Opposition & Critics - Antagonists	Local populations considering conservation as development obstacle/as elitist (neo-colonial)/as “picking the other side in the human-animal conflict”		Citizen
EE - Opposition & Critics - Antagonists	District authorities and traditional authorities – need to be informed about new activities (as new actor in the community, need for proper introduction)		0
EE - Opposition & Critics - Commercial competitors		unlikely	Data Aggregator
EE - Opposition & Critics - Resource competitors		area with high development aid donor presence , and consideration of expanding responsibility of CRBs for other issue areas	Citizen
EE - Opposition & Critics - Change resistance			Policy-maker
EE - Opposition & Critics - Citizen science sceptics			Citizen
Market Forces - Shareholders and Investors			
MF - Shareholders and investors - Public Funder	CRBs – run autonomously as planning tool justified by and financed with increased revenues under Wildlife act benefit sharing scheme		Decision-maker
MF - Shareholders and investors - Private Donors			Citizen
MF - Shareholders and investors - Spon-	Hosting within frame of ongoing WWF work		Citizen

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
sors	under sustainability strategy		
MF - Shareholders and investors - Joint Venture			Data Aggregator
MF - Shareholders and investors - Lenders			0
MF - Shareholders and investors - Shareholders			Citizen
MF - Shareholders and investors - In-kind Donors Hardware/Software			Data Aggregator
Market Forces - Suppliers			
MF - Suppliers - Technical Components	TAHMO-KEN		Data Aggregator
MF - Suppliers - Platform/Data Technology	AKVO		Data Aggregator
MF - Suppliers - Apps and Services			Data Aggregator
MF - Suppliers - Commercial data providers			Data Aggregator
MF - Suppliers - Academic knowledge providers			Data Aggregator
Market Forces - Buyers			
MF - (Prospective) Customers - Public clients		Buyer of technology components or services	0
MF - (Prospective) Customers - Users		Subscribers to paid services	0
MF - (Prospective) Customers - Marketing agencies		Buyers of 'access' to community for ads	0
Internal Stakeholders			
IS - Internal Stakeholders - Project Management	GT2.0 PMT	Are interests coherent? Do developments in the co-design process match project and partner objectives? Are there conflicts with the transition to a post-project organization?	0
IS - Internal Stakeholders - Project Staff, consultants and subcontractors	Dedicated project staff all partners GT2.0 consortium	Are the skills and experiences of all consortium partners known and optimally used for the DC?	0
IS - Internal Stakeholders - Advisory Bodies	Advisory Committee and Steering Committee		0
IS - Internal Stakeholders - Host organizations - support staff	Support staff all partners GT2.0 consortium		0
IS - Internal Stakeholders - CO Leadership	WWF Zambia	Do the interests of DC leaders align with the trajectory of the co-design process?	0
IS - Internal Stakeholders - CO Team - community organizers		Initiation of the CO Community will require 1-2 staff of partner organizations or activists identified in the first interaction moment to do the "leg work" involved in recruiting and mobilizing Core Stakeholders	0

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic "Search Profile"	Demo Case - Stakeholder Group	Implications, comments, open questions	Type
IS - Internal Stakeholders - CO Team - commercialization leaders		Lead partner to ensure systematic consideration of the DC potential for future upscaling and transition to a sustainable operational model? Note potential conflicts of interests with a community driven co-design process. Ensure balance if intended business model will face concentrated buyer power.	Data Aggregator
IS - Internal Stakeholders - CO Team - technical roles	platform administrators	Early appointment relevant for training and feedback in technical design phase	Data Aggregator
IS - Internal Stakeholders - CO Team	Dedicated staff partner organizations and volunteer contributors with an extended/formalized role during the co-design process	Which team members contribute under project assignments, which as long-term investments for their employers? Will particularly enthusiastic pioneer Community Members be recruited in informal roles to increase ownership, e.g. to produce initial contents in an organized manner?	0

3.6.3 Key observations

Baseline context and stakeholder analysis of the Zambian Demo Case suggests that the project context is strongly influenced by the struggle to align central policies with local decision making. While CRBs nominally serve to empower local communities and restore the authority of traditional decision-makers, this role is defined in national legislation for Wildlife, Water and Forest Management. Tellingly, the Demo Case forms part of a government-mandated programme aiming to developing the local capacity for community-based decision-making as envisioned by central laws.

This situation carries a high risk that actors fall into a behavioural pattern that treats the local population as recipients of a capacity development intervention guided by a pre-defined vision of participation. In that case, the CO might be received as inherent component of an externally imposed political structure. Even if the response is positive, local experience with donor-funded projects might lead people with a positive attitude towards the project partners to contribute as a favour to them, not as an act of conscious and long-term self-empowerment as envisioned by Ground Truth 2.0.

The in-depth stakeholder analysis and co-design process will have to create spaces in which the views, interests and frames of reference of the local communities can be openly explored, and organic connection points for the Citizen Observatory identified. Matching compartmentalized national policies with the local frame for organizing will likely present a major challenge.

4 Comparative notes and outlook for the updated stakeholder analysis

4.1 Cross-cutting observations

The baseline stakeholder analysis highlighted three cross-cutting themes that should be checked for their relevance in a generic CO methodology:

First, the Demo Cases seem to mainly approach the Citizen Observatories as tools for the production of 'objective' data to be used by technocrats in administrative entities. Relatively little attention is being paid to more 'political' actors, especially elected officials and legislative bodies. However, such actors are likely highly relevant, because they tend to see themselves as advocates representing citizen constituencies, and thus have higher incentives to engage in collaboration and dialogue with citizens than administrators who tend to see themselves as neutral brokers (Haas, 1992). Similarly, citizens with the highest motivation to engage in collective action tend to be activists focused on promoting a specific cause, goal or agenda, who might not be attracted to a deliberately 'neutral' platform. Understanding motivations and passions as drivers for community development, and understanding its role in the search for target audiences accordingly will be a main challenge of the first stage of the co-design process.

4.2 Outlook next steps

To contribute to the GT2.0 tasks and work packages, the initial stakeholder inventories will be coded, and generic groups will be further specified and disaggregated. Continuing the evolutionary process, the in-depth stakeholder analysis will be based on exploratory data collection for a broad range of stakeholder attributes. Observations during the interaction moments, additional data collection and validation with task leaders will then serve to identify which stakeholder attributes are most relevant to design effective engagement strategies. The in-depth analysis will build on the following set of attributes:

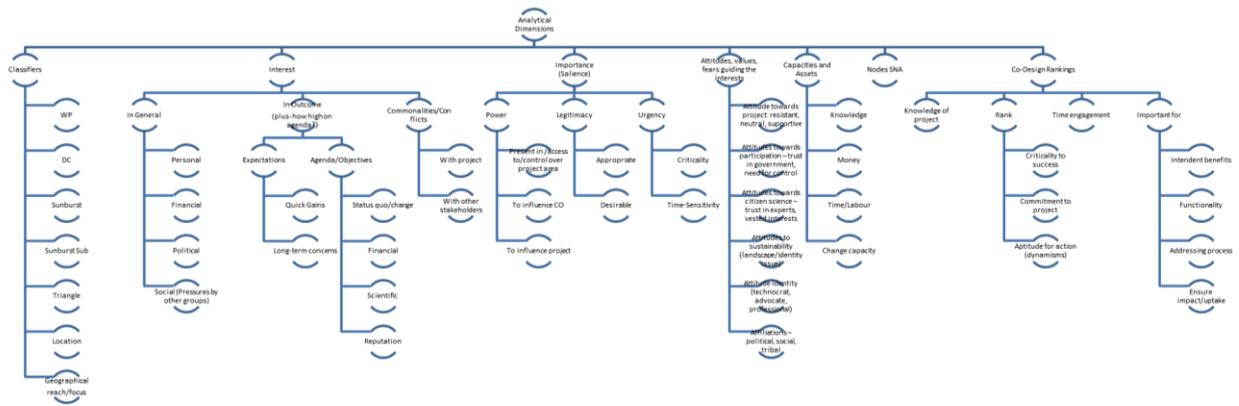
1. Importance/Priority of the stakeholder, considering
 - a. Their Power and influence, both with regard to project and with regard to policy process
 - b. Their legitimacy, i.e. the desirability and appropriateness for having a relationship
 - c. The urgency of their interest, both in terms of criticality and time-sensitivity of concern. It should be noted, that the urgency or criticality of the stakeholder's claims is often diametrically opposed to the power of a stakeholder group. This is especially relevant in environmental contexts involving potential long-term systemic risks to ecosystems, human health or livelihoods.
2. Interests of the stakeholders, considering
 - a. General interests, such as commercial, personal or political interests, including interests created by social pressures by other groups
 - b. Specific interest in the issue and a particular outcome
 - c. Attitudes, values, and fears guiding the interests, not only towards the project, but also towards participation, citizen science, and sustainability, and shaped by identities and affiliations
 - d. Links, commonalities and conflicts with other stakeholders
3. Capacities and assets of Stakeholders, including
 - a. Knowledge about relevant science, technology, policy and the target process

- b. Financial means determining the ability to participate and to contribute
- c. Time and labour currently/potentially devoted to issue
- d. Capacity for change, including the capacity of to engage with citizens and decision-makers respectively and the capacity of stakeholders to deal with data.

Considering the demands of co-design process, the in-depth analysis will furthermore seek to generate a generic set of descriptors for stakeholders, to allow the dis-aggregation and re-aggregation of the inventory according to the need of different work packages. Descriptors will include codes regarding the geographical location and focus of organizations (i.e. presence in, access to, control over the geographic area), and project classifications identifying stakeholder categories (GT2.0 ‘Sunburst’, see section 2.2), stakeholder occupations (GT2.0 ‘Triangle’, see section 1.1), and their affiliation with work packages and Demo Cases.

Fig 44 summarizes the initial set of stakeholder characteristics that will be tested and validated with the data collection for the updated stakeholder analysis.

Fig 44 Initial set of analytical dimensions guiding the in-depth stakeholder analysis



5 Bibliography and References

- Abers, R. N. (2007). "Organizing for Governance: Building Collaboration in Brazilian River Basins." *World Development*, 35, 8, 1450–1463.
- ADB. (2007). *Guidelines for Preparing a Design and Monitoring Framework*. Business. Asian Development Bank.
- Adger, W. and Barnett, J. (2011). "This must be the place: underrepresentation of identity and meaning in climate change decision-making." *Global Environmental Politics*, 11, 2.
- Akhmouch, A. and Clavreul, D. (2016). "Stakeholder Engagement for Inclusive Water Governance: 'Practicing What We Preach' with the OECD Water Governance Initiative." *Water*, 8, 5, 204.
- Blackman, R. (2003). *"Project Cycle Management."* Tearfund, Teddington.
- Carlos, A., Júnior, P., Porto, G. S., Pacífico, O., Pereira, A. and Júnior, S. (2015). "Project Stakeholder Management : A Case Study of a Brazilian Science Park." *Journal of Technology Management & Innovation*, 10, 1, 39–50.
- Cordano, M., Frieze, I. H. and Ellis, K. M. (2004). "Entangled Affiliations and Attitudes: An Analysis of the Influences on Environmental Policy Stakeholders' Behavioral Intentions." *Journal of Business Ethics*, 49, 27–40.
- Creech, H. and Willard, T. (2001). *Strategic Intentions: managing knowledge networks for sustainable development*. IISD, Winnipeg.
- Elbe, J. (2011). *Die Wirksamkeit von Sozialkapital in der Regionalentwicklung*. Shaker, Aachen.
- UNEP. (2016). *The state of biodiversity in Africa : a mid-term review of progress towards the Aichi Biodiversity Targets*.
- European Commission. (2014). *Special Eurobarometer 416 - Attitudes of European citizens towards the environment*. European Commission, Brussels.
- Figueroa, M. E., Kincaid, D. L., Rani, M. and Lewis, G. (2002). *Communication for Social Change: An Integrated Model for Measuring the Process and Its Outcome*. Communication for Social Change Working Paper Series. The Rockefeller Foundation and Johns Hopkins University Center for Communication Programs, New York.
- Haas, P. M. (1992). "Introduction: Epistemic Communities and International Policy Coordination." *International Organization*, 46, 1, 1–36.
- Hall, D. M., Gilbertz, S. J., Horton, C. C. and Peterson, T. R. (2013). "Integrating Divergent Representations of Place into Decision Contexts." In W. Steward, D. Williams, & L. Krueger (Eds.), *Place-based Conservation: Perspectives from the Social Sciences* (pp. 121–136). Springer Press, Dordrecht.
- Hall, W. P., Nousala, S., Best, R. and Nair, S. (2012). "Social Networking Tools for Knowledge-Based Action Groups." In A. Abraham & A.-E. Hassanien (Eds.), *Computational Social Networks - Part 2: Tools, Perspectives and Applications* (pp. 227–255). Springer, London.

- International Telecommunication Union. (2015). *Measuring the Information Society 2016*. ITU.
- ISO. (2012). "ISO21500: Guidance on Project Management." Iso 21500, 51.
- Ivits, E., Cherlet, M., Tóth, G., Sommer, S., Mehl, W., Vogt, J. and Micale, F. (2012). "Combining satellite derived phenology with climate data for climate change impact assessment." *Global and Planetary Change*, 88–89, May, 85–97.
- Jacobson, M., Meyer, F., Oia, I., Reddy, P. and Tropp, H. (2013). *User's Guide on Assessing Water Governance*. SIWI, Stockholm.
- Johns, M. M. and Saltane, V. (2016). *Citizen Engagement in Rulemaking -- Evidence on Regulatory Practices in 185 Countries*. World Bank Policy Research Working Paper 7840. World Bank, Washington.
- Kleine, M., Langenbach, P. and Zhurakhovska, L. (2014). "Fairness and Persuasion. How Stakeholder Communication Affects Impartial Decision Making." Preprints of the Max Planck Institute for Research on Collective Goods, 2014, 3.
- Klijin, E.-H. (2008). "Policy and Implementation Networks: Managing complex interactions." In P. S. Ring, C. Huxham, M. Ebers, & S. Cropper (Eds.), *The Oxford Handbook of Inter-Organizational Relations* (pp. 118–146). Oxford University Press, Oxford.
- Klijin, E.-H., Steijn, B. and Edelenbos, J. (2010). "The Impact of network management on outcomes in governance networks." *Public Administration*, 88, 4, 1063–1082.
- Kranz, N. and Mostert, E. (2010). "Governance in Transboundary Basins - the Roles of Stakeholders; Concepts and Approaches in International River Basins." In A. Earle, A. Jägerskog, & J. Öjendal (Eds.), *Transboundary Water Management: Principles and Practice* (pp. 91–106). Earthscan, London.
- Lane, M. B. and Corbett, T. (2005). "The Tyranny of localism: Indigenous participation in community-based environmental management." *Journal of Environmental Policy & Planning*, 7, 2, 141–159.
- Mahroum, S., Bell, S. and Yassin, N. (2013). *Innovation in Multi-Stakeholder Engagement*. INSEAD Faculty & Research Working Paper.
- Mason, M. (2010). "Information disclosure and environmental rights: the Aarhus Convention." *Global Environmental Politics*, 10, 3, 10–31.
- Miller, T.R., 2015. *Reconstructing Sustainability Science: Knowledge and action for a sustainable future*, Routledge, Milton Park.
- Mitchell, R. K., Agle, B. R. and Wood, D. J. (1997). "Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts." *The Academy of Management Review*, 22, 4, 853.
- Nousala, S., Jamsai-Whyte, S. and Hall, W. P. (2010). "Tacit Knowledge Network Development: The Comparative Analysis of Knowledge Threads in Complex Systems." *SSRN Electronic Journal*.
- OECD. (2014). *Water Governance in the Netherlands*. OECD Publishing, Paris.

- OECD. (2011). *Water Governance in OECD Countries: A Multi-level Approach*. OECD Publishing, Paris.
- OECD. (2013). *OECD Regions at a Glance 2013*. OECD Publishing, Paris, 198p.
- OECD. (2015). *Stakeholder Engagement for Inclusive Water Governance*. OECD Publishing, Paris.
- OECD. (2015). *Government at a glance 2015* (Vol. 2015). OECD Publishing, Paris.
- OECD. (2015). *Environment at a Glance 2015: OECD Indicators*. OECD Publishing, Paris.
- Partzsch, L. and Ziegler, R. (2011). "Social entrepreneurs as change agents: a case study on power and authority in the water sector." *International Environmental Agreements: Politics, Law and Economics*, 11, 1, 63–83.
- Porter, C. E. (2006). "A Typology of Virtual Communities: A Multi-Disciplinary Foundation for Future Research." *Journal of Computer-Mediated Communication*, 10, 1,
- Reed, M. S. (2008). "Stakeholder participation for environmental management: A literature review." *Biological Conservation*, 141, 10, 2417–2431.
- Rusare, M. and Jay, C. I. (2015). "The project implementation profile: A tool for enhancing management of NGO projects." *Progress in Development Studies*, 15, 3, 240–252.
- Shmueli, D. F. and Gal, M. B. (2005). "Creating environmental stakeholder profiles: A tool for dispute management." *Environmental Practice*, 7, 3, 165–175.
- Whyte, K., Brewer, J. P. and Johnson, J. T. (2015). "Weaving Indigenous Science, Protocols and Sustainability Science." *Sustainability Science* (online).
- Woodward, I. C., More, E. A. and Van der Heyden, L. (2016). "*Involve*": *The Foundation for Fair Process Leadership Communication*. INSEAD Faculty & Research Working Paper 2016/17/OBH/TOM/EFE.

6 Annexes

6.1 Protocol Pre-Screening

Method: Semi-structured, informal

Interviewees: Demo Case Leaders (Consent implicit)

Time: 30 minutes needed to collect basic answers, ideally 45-60 minutes to allow for rounds of follow-ups and reflection.

Questions

1. Warm-up question: Clarification of the issue.
 - a. Start: Recall the definition as provided by case [familiar ground].
 - b. Follow-up. explore ways to frame the issue and possible connections to conceptually linked issues [support identification of common themes between cases]
2. Defining characteristics of the case context and local culture
 - a. *“Let’s talk about the local context of your project. Imagine you met a [tourist/a new student planning field research/...]. You have a beer/coffee, and you are trying to explain in a few sentences the three (or so) most important things that define your place – what do I need to know to “get” your people and your region, what makes them tick, how do things work?”*
 - b. Follow-up [prompts]: History, languages, environment/landscape, dominant forces in politics
3. Underlying motivations and perceptions of fundamental issues with current policy practice [discovery via proxy question on vision of change]
 - a. *“Imagine it is ten years down the road. GT has been hugely successful, the CO is up and running, lots of people are involved. What has changed? What do you see people doing that is not being done right now.”*
 - b. [First answer is likely to be vague, expand and follow-up on any promising key words]
4. Key actors
 - a. *“In our documents and presentations, all cases have lists of partner organizations and collections of logos. However, in practice, there are usually a few people - individuals – who drive the process, put in the time and the work, and actively promote it. If I asked you: Who “is the platform” today, who would you name. “*
 - b. [clarification as needed]
5. Potential Sources of Conflict
 - a. *“Every project like this, a project that tries to change practices and introduce new knowledge, will (inevitable) meet resistance and create conflicts with existing structures.... [Wait for reaction. In case of agreement, move on. In case the notion is rejected or is met with confusion, clarify and build shared understanding of the expected change process]. ... If you had to speculate for your case, what are the most likely sources of conflict, who (or which group) is most likely to oppose the project or attempt to create problems for it?”*
 - b. Follow-up: Clarify the reasoning of named groups and details of possible objections as needed.

6.2 Protocol Context Mapping

Method: Semi-structured interview

Interviewees: Demo Case Leaders and 1-2 key collaborators (Consent implicit, no form required)

Time: 60 minutes to allow for rounds of follow-ups and reflection.

The interview is exploratory – the questions are intentionally broad to allow for a wide range of responses. Interviewees will usually select one or two aspect. Interviewer to follow up and expand on aspects mentioned (which often implicitly points to stakeholder groups) – or to return to the original question and explore another aspect.

Inputs: Mapping exercises serve to stimulate thinking about complex socio-economic systems by attempting to delineate social and natural phenomena on a map. In addition to questions, example maps are collected in document and web searches in advance and provided as visual aids on screen during the interview.

.....
Opening: “Sustainability (science) is ‘place-based’. But many factors influencing the project have different boundaries, meaning that important stakeholders might outside the project area. The exercise clarifies six different types of boundaries: case region, administrative, environmental, social, economic and technical.”

1) Case Boundaries:

- “You have ‘placed your Demo Case on a map’: It will take place in [...]. How was the location for the DC chosen? For example, does it match a political or administrative entity? Or a geographical or natural area?”

2) Political/Administrative Boundaries

- “Your Demo Case will be affected by a range of laws and regulations. How many levels of government does your country have (e.g. local, district, provincial, national, EU)? Which level(s) of government set or implement policies on
 - a. the issue?
 - b. citizens rights to information and participation?
- “Does your case involve cross-jurisdictional institutions (e.g. basin organizations, nature reserves,...)? “

3) Environmental Boundaries

- “Your observatory will collect data on environmental issues. Often, such issues ‘know no boundaries’ – i.e. both problems and solutions involve actors ‘somewhere else’. Does your case collect data on phenomena with ‘natural borders’? Think e.g. about rivers (catchments), region-external sources of pollution, distinct ecosystems or habitats, or migratory species?”

4) Social Boundaries

- “People are social creatures. We identify as members of groups and communities. If you asked people in your region to describe themselves would they identify as [by nationality, the region, the city]? Is the population homogenous, or are there major ethnic or tribal groups, different languages, or religious, social or cultural sub-groups?”
- “Which places are role models for your region? E.g., do policy-makers frequently copy programs from or compare themselves to other cities/regions? Which cities/regions are watched as cultural centres and trendsetters?”

5) Economic Boundaries

- “Economic power is a major driver of all policy. How is economic power distributed in your region? Are there major employers or concentrated industrial clusters, ports or special economic zones inside or outside the project area?”

6) Technical Boundaries

- “The GT2.0 platforms will need to be compatible with the way people use technology in your case region. Can you think of any specific, positive or negative aspects of the technical infrastructure in your project region (e.g. unequal network access)? Are there any particular local preferences for social media networks you know of? Are there any popular local online communities?”

6.3 Stakeholder Mapping - Process and Stakeholder Mapping

Method: Semi-structured interview

Interviewees: Demo Case Leaders and 1-2 key collaborators (Consent implicit, no form required)

Time: 90-120 minutes to allow for rounds of follow-ups and reflection.

Inputs: Stakeholder groups identified in the **proposal phase**, **pre-screening interview** and **context mapping** are pre-filled and visible.

Procedure: The interview is exploratory – the questions are intentionally broad to allow for a wide range of responses and catalogue as many stakeholder groups as possible. First observations and assumptions about the attitudes and influence of the listed groups can be explored and noted as part of the process where appropriate.

Opening: “Sustainability (science) is ‘place-based’. But many factors influencing the project have different boundaries, meaning that important stakeholders might be outside the project area. The exercise clarifies six different types of boundaries: case region, administrative, environmental, social, economic and technical.”

CO Core Stakeholders

1. Community Members

- “Imagine you wanted to invite [friends, neighbours, colleagues/local citizens, businesses] to join the CO – for what [groups of] people can you name good reasons to join? E.g. who has a problem or shared concern the platform might help solve? Does it match/complement/improve a hobby they already have/something they already do [professionally]?”
- “Who are the government entities that currently collect and produce ‘official’ data on the issue?”

2. Expert advisers

- “Do you know (of) local people or groups with specific expertise about the issue, the data/science of the issue, or with building and running community action groups or similar web platforms? Are there people who might be harsh but honest critics providing us with a regular ‘reality check’?”
- “Which groups or people do you know that might help promote the CO, e.g. by bringing it to the attention of local policy-makers, or by informing the members of their own networks?”
- Political process mapping: “Does the process typically involve secret negotiations between powerful factions behind closed doors?”

Enabling Environment

3. Regulatory entities

- Political process mapping: “Who ‘owns’ or coordinates the process? Who has the legal authority to decide, who can be ordered to contribute, who has a formal right to participate, who is usually asked to advise?”

“Who controls what can be discussed? Are there public channels to raise issues or comment, or is access to policy debates restricted? Do you need to observe formal rules or understand technical /political language to contribute?”

- [Expand and validate with in secondary data – confirm legal roles and mandates]

4. Allies and Umbrella Networks

- “Who might endorse to project to give it weight? Are there other initiatives that pursue similar political goals?”

5. Opponents and Critics

- “Which groups or people might face more scrutiny in the future due to the CO, or feel that it will cost them power, influence or autonomy in their decisions?”
- “Do you know groups or people that might oppose or reject the idea the CO out of principle, even if it does not really affect them?”
- Political process mapping: “Is there an attempt to consider all ideas on their own merit, or is there an observable advantage for people of social position and power, or for technical experts (i.e. prejudice against ‘laypeople’ or ‘outsiders’)?”

Market Forces (summary screening for red flags only)

- “A detailed market analysis will be conducted by WP 3. But different business scenarios have implications for the co-design process. Do you already know which of the following 3 business models are likely/unlikely for long-term operation of your CO?”
 - Model 1: Sponsored by public funders, or financed by one or two public “clients”
 - Model 2: Financed by selling some sort of content (knowledge products or services)
 - Model 3: Financed with subscription fees and advertisements?”

Stakeholder categories not explicitly mapped in the interview:

1. Internal Stakeholders: primary data source project documents
2. Media and the wider public: Primary data source from in context mapping and secondary data

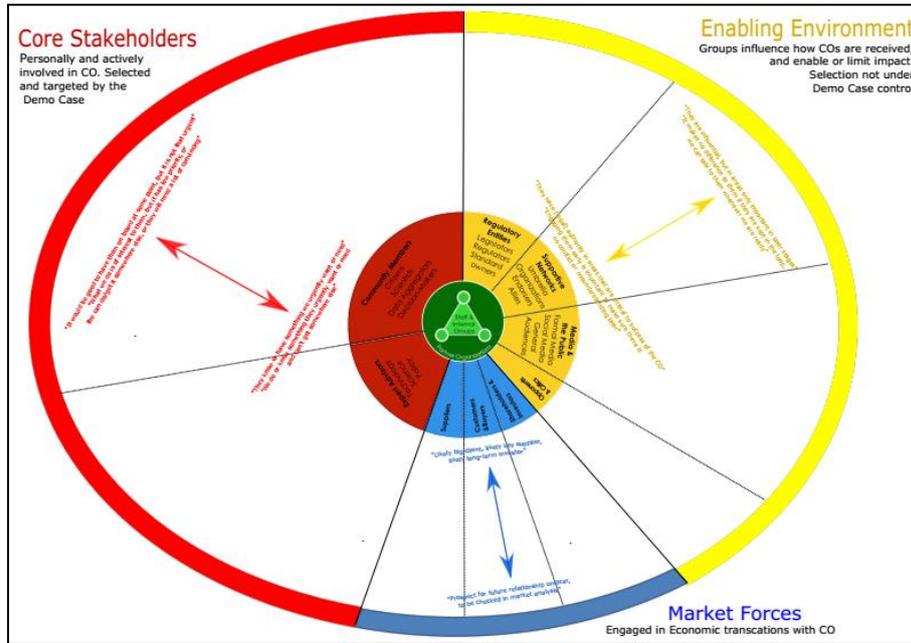
6.4 Protocol Stakeholder Validation

Method: Plenary Working group exercise

Interviewees: GT2.0 plenary - Demo Case leaders, key collaborators and WP contributors (Consent implicit, no form required)

Time: 90 minutes

Inputs: 1) Worksheet: Sunburst diagram (A1)



2) Stakeholder Inventories – presented as table and as “cards”

Table 8 Community Members identified in the Baseline Analysis

Name	[weigh]	Notes
xzy		
xxx		
Community Member	G1000 members	Citizen

Procedure: Validate the names and classification of stakeholder groups. Then place stakeholder cards on the sunburst diagram. Placement close to the centre indicates the need for early engagement, placement further out from the centre suggests later engagement. Timing of the engagement should consider the following criteria:

Increasing distance from the center

“What they know or have is something that we urgently want or need to get started”



“It would be good to have them on board at some point, but it is not that urgent”

“What we do or know is something they really want or need and can't get somewhere else”



“What we do is of interest to them, but it is low priority to them, or they can do/get it somewhere else, or they will need a lot of “selling” and convincing”

“Engaging them early is important to make sure there is no conflict or misunderstanding later”



“It makes no difference to them if they are kept in the loop, we can talk to them whenever we are ready”

“They have (legal) authority in an area that is crucial to the success of the CO”



“They are influential and/or formal authorities, but in areas only relevant in later stages”

“They are likely to be a key client, commercial supplier, or long-term investor”



“Their role needs to be further clarified in the market analysis”

6.5 GT 2.0 Stakeholder “Search Profile”

Table 9 Generic inventory of potentially relevant Demo Case stakeholder groups and their role

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
Core Stakeholders - Community Members (Recruitment Targets)										
CS	CO Members (Recruitment targets)	Citizen target groups - individuals	People with related hobbies or concerns, who want to solve a problem, or improve a service	participants representing different modalities and intensities of interaction with the platform	1					
CS	CO Members (Recruitment targets)	Citizen target groups - children	Children/Youth organizations, Schools		1					
CS	CO Members (Recruitment targets)	Citizen target groups - organized citizens	Members/Supporters of related CSOs	Channel to reach like-minded citizens	1					
CS	CO Members (Recruitment targets)	Citizen Target Groups - Community Action groups	Issue-specific initiatives, protest/lobby groups	Organize regional collective action	1					
CS	CO Members (Recruitment targets)	Business target groups - major local presence	Employers with broad and frequent physical presence across project area - Postal services, companies with many local branches/shops	Company vehicles as potential data collection fleets	1					
CS	CO Members (Recruitment targets)	Business target groups - leading employers	High-Tech companies, knowledge-economy	Affected by policy outcomes in attracting staff	1					
CS	CO Members (Recruitment targets)	Business target groups - reliant on environmental/natural resources	Tourism, Agriculture	Potential partners in Environmental Stewardship initiatives	1					
CS	CO Members (Recruitment targets)	Business target group - "corporate citizens"	Companies with strong CSR profiles	COs as way to document community engagement, attractive as potential sponsors, interested in visibility	1					

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
CS	CO Members (Recruitment targets)	Policy target groups - decision-makers	Heads/key officers in local departments/agencies	"Process owners" with authority over participation and collaboration in the relevant local process - likely also a regulatory entity			1			
CS	CO Members (Recruitment targets)	Policy target groups - administration	staff local departments and agencies	involved in the relevant local processes - usually identify as neutral technicians and brokers, interested in quality of outcome, including owners of current in-situ networks		1				
CS	CO Members (Recruitment targets)	Policy target groups - policy-makers/legislators	local representatives and council members, members of relevant committees, working groups of local parties	elected officials involved in the relevant local processes and local political agenda setting - usually identify as advocates for their constituency		1				
CS	CO Members	Data Aggregators	Staff partner organizations					1		
CS	CO Members (Recruitment targets)	Scientists	Researchers local universities and think tanks						1	
Core Stakeholders - Experts & Advisors										
CS	Experts & Advisors	Design-Phase - experts citizen science	scientists, provide state of the art (theoretical) insights about best practices in designing citizen science	ensure effective media design					1	
CS	Experts & Advisors	Design-Phase - issue experts	scientists from outside project area, senior scientists local universities, provide state of the art understanding of the issue under investigation	informally 'peer-review' the scientific elements of the design and flag potential issues, ensure scientific veracity, credibility and epistemic authority					1	
CS	Experts & Advisors	Design-Phase - technology experts	tech company representatives, open source software developers, platform/software reviewers, "lead geeks"	provide information about/updates to new technologies	1			1		

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
CS	Experts & Advisors	Design phase - reality checkers citizen observatories	Leaders/coordinators of citizen observatories in other areas/on other topics	feedback on ideas that have been successfully/unsuccessfully tried elsewhere	1					
CS	Experts & Advisors	Design phase - reality checkers local politics	Experienced local political operators, e.g. retired senior officials, with intimate knowledge of the local political dynamics and its written and unwritten rules	provide "neutral" political insights in early stages to avoid early bias.		1				
CS	Experts & Advisors	Long-term - local policy	Senior local decision-makers and policy makers unable or unwilling to fully participate, political intermediaries	might help bring CO information to the attention of local decision makers or advice on how to flag citizen issues and concerns		1	1			
CS	Experts & Advisors	Long-term - science	local scientists and researchers willing to act as independent "scientific quality control"	help sustain epistemic authority by signalling to outside parties that the CO values scientific review				1	1	
CS	Experts & Advisors	Long-term - policy linkages	decision-makers and policy makers from higher level technical agencies interested in knowledge exchange	improve policy coordination, ensure "fit" of data with regional/national systems, explore new sources for data fusion		1		1		
Enabling Environment - Regulatory Entities										
EE	Regulatory Entities - political process	Supra-national bodies	EU, EC, International conventions	Issues binding legislation (directives), offers legal channels that might support or contradict local concerns		1				
EE	Regulatory Entities - political process	Legislators - national	National Parliaments	Sets overall policies for issue areas, authorizes and guides national agencies, determines authority of sub-national and local governments, decides parameters for participation		1				
EE	Regulatory Entities - political process	Legislators - sub-national 1	Sub-national Parliaments/Councils	(identify for case region) - competencies usually involve aspects of spatial planning		1				

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
EE	Regulatory Entities - political process	Legislators - sub-national 2	Sub-national Parliaments/Councils	[identify for case region)		1				
EE	Regulatory Entities - political process	Legislators - local	Local Councils	(identify for case region) - set local policy, essential level enabling/ restricting citizen participation.		1	1			
EE	Regulatory Entities - political process	Executive/Administration - national	National ministries (e.g. on environment, water, infrastructure, natural resources, tourism, health agriculture, enterprise), national agencies	Drafts national policies and regulations, implements national policies and directives, collect national level data, prepare technical reports influential for political agendas		1				
EE	Regulatory Entities - political process	Executive/Administration - sub-national 1	[Sub-national administrations]	Implements regional policies, typically involving spatial planning and regional infrastructure		1				
EE	Regulatory Entities - political process	Executive/Administration - sub-national 2	[Sub-national administrations]	Implements regional policies, typically involving spatial planning and regional infrastructure		1				
EE	Regulatory Entities - political process	Executive/Administration - local	Local departments, executive committees on e.g. urban planning, Infrastructure, Water, environment, emergency response	Drafts and implements local plans and strategies, oversees and provides local services		1	1			
EE	Regulatory Entities - political process	Executive/Administration - local sub-divisions	[sub-divisions]	implement local plans and strategies in smallest political units			1			
	Regulatory Entities - political process	Other regulatory entities				1				
EE	Regulatory Entities - political process	Auditors & oversight	Courts	provide legal courses of action for citizens		1				
EE	Regulatory Entities - political process	Auditors & oversight	Government Controllers, supervisory organs and watchdog entities	monitor and control the implementation of policies, provide channels to raise and address issues with policy processes		1				

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
EE	Regulatory Entities - project	Standardization bodies	GEOSS, OGC, COBWEB, INSPIRE	Defines technical parameters project has to comply with to fulfil commitments regarding data accessibility and compatibility (might involve two-way dialogue - project can engage to set standards)						
EE	Regulatory Entities - project	Donors - Funding Authority	EU, Development Banks, National Funding Agencies/Ministries	Defines framework objectives as part of calls for proposals, approves project contents and shapes objectives (boundary condition for user-based design). As 'owner' of policy able to (re-)negotiate meanings						
EE	Regulatory Entities - project	Donors - Executive agencies	EASME, Universities or NGOS acting as grant administrators under framework contracts	Implements regulation on behalf of the funding authority, monitors compliance and acts as enforcer of externally negotiated meaning (boundary condition for user-based design)						
EE	Regulatory Entities - project	Hosting Organizations/ Statutory Agencies	Partner organizations of the project consortium	legal counterpart of funding authority, sets operational parameters (e.g. financial rules, employment) for project teams; determines resource availability, including extra staff support, communication channels, infrastructure						
Enabling Environment - Allies & Umbrella Movements										
EE	Allies & Umbrella Networks	Endorsing organisations - local	Local stakeholders	Endorse the project in the proposal phase, will require updates, may have to be kept abreast of changes	1	1	1	1	1	
EE	Allies & Umbrella Networks	Endorsing organisations - regional	Regional	Endorse the project in the proposal phase, will require updates, may have to be kept abreast of changes	1	1		1		

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
EE	Allies & Umbrella Networks	Endorsing organisations - global	Global	Endorse the project in the proposal phase, will require updates, may have to be kept abreast of changes	1	1		1		
EE	Allies & Umbrella Networks	Local Allies	Groups working to achieve similar objectives but by different means or for different reasons	create a win-win situation by aligning activities or mutual endorsements of initiatives	1					
EE	Allies & Umbrella Networks	Regional Allies	Initiatives and networks created by regional bodies or larger CSOs	provide weight, credibility and political influence through affiliation	1	1				
EE	Allies & Umbrella Networks	Umbrella Movements - Citizen Science	networks of citizen observatories	provide weight, credibility and political influence through membership	1				1	
EE	Allies & Umbrella Networks	Umbrella Movements - professional association	networks related to business model, technology or target audiences	provide weight, credibility and political influence through membership	1			1		
EE	Allies & Umbrella Networks	Umbrella Movements - issue related movements	networks related to political processes	provide weight, credibility and political influence through membership	1	1				
Enabling Environment - Media & The Public										
EE	Media & the Public	Relevant Societal Groups	[region-specific]	represent a specific experience that might require/benefit from a tailored message	1					
EE	Media & the Public	Neutral multipliers	Semi-public figures, local bloggers, pundits or celebrities	Influential as local opinion-makers, will spread the message if convinced of its benefit, but will usually stay out of organized activities	1					
EE	Media & the Public	Communication channels to citizens	local CSOs, local churches, local clubs, local newsletters	local groups with a large/interesting membership, will spread the message to members as long as it does not interfere with their own activities (competition for volunteers!), relevant as trusted source of information	1					

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
EE	Media & the Public	Formal Media - newspapers	Respected dailies and weeklies, papers with wide reach, local publications	respected publications provide credibility, locals to reach specific audiences						1
EE	Media & the Public	Formal Media - TV	Local TV stations	targeted channel for local audiences						1
EE	Media & the Public	Formal Media - Radio	Local/community radio	targeted channel for local audiences						1
EE	Media & the Public	Formal Media - Online	Local news websites, official city websites	targeted channel for local audiences						1
EE	Media & the Public	Social media	Facebook, Twitter, Whatsapp, Instagram	represent popular and familiar modes of interaction, important tools for mouth-to-mouth propaganda	1					
Enabling Environment - Opposition & Critics										
EE	Opposition & Critics	Low resource target groups	Low resource target groups	groups who might be motivated to participate in finished platform, but need incentives to contribute to the design process	1	1	1			
EE	Opposition & Critics	Vested Interests	owners and leading experts in the current political process	groups who (feel that they) will face more scrutiny in the future due to the CO, or feel that it will cost them power, influence or autonomy in their decisions		1	1			
EE	Opposition & Critics	Antagonists	Groups opposing the principles of participation embodies in the CO	idea rejected out of principle, even if it does not really affect them. If created by lack of information, position might be changed, especially relevant if group is a key intended target audience of the CO	1	1	1		1	
EE	Opposition & Critics	Commercial competitors	Companies working to develop similar technologies or communities					1		
EE	Opposition & Critics	Resource competitors	Organizations competing for the time and attention of the same target audiences		1				1	

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
EE	Opposition & Critics	Change resistance	Operational staff in public departments unwilling to change their practice			1	1			
EE	Opposition & Critics	Citizen science sceptics	Groups concerned about the data/information quality of citizen collected data		1	1	1		1	
Market Forces - Shareholders and Investors										
MF	Shareholders and investors	Public Funder	Ministries, departments or agencies	Financing projects under a national or local political mandate			1			
MF	Shareholders and investors	Private Donors	Foundations, larger NGOs	Financing projects according to specific values/convictions	1					
MF	Shareholders and investors	Sponsors	Companies	Financing project in exchange for visibility	1					
MF	Shareholders and investors	Joint Venture	Partner companies	Investment in expectation of commercial success				1		
MF	Shareholders and investors	Lenders	Banks	Provide credit in expectation of repayment						1
MF	Shareholders and investors	Shareholders	Crowdsourcing	Provide liquidity in expectation of future profits	1					
MF	Shareholders and investors	In-kind Donors Hardware/Software	e.g. companies/organizations hosting platforms for free	restricts design options				1		
Market Forces - Suppliers										
MF	Suppliers	Technical Components						1		
MF	Suppliers	Platform/Data Technology						1		
MF	Suppliers	Apps and Services						1		
MF	Suppliers	Commercial data providers						1		
MF	Suppliers	Academic knowledge providers						1		
Market Forces - Buyers										
MF	(Prospective) Customers	Public clients		Buyer of technology components or services						
MF	(Prospective) Customers	Users		Subscribers to paid services						

Ground Truth 2.0 Deliverable D1.1 Initial stakeholder analysis of the Demonstration Cases

Generic Stakeholder "Search Profile"					Target Occupation					
Sunburst Segment	Category	Generic major groups	Typical subgroup	Role and relevance	Citizen	Policy-maker	Decision-maker	Data Aggregator	scientists	n/a, multiple
MF	(Prospective) Customers	Marketing agencies		Buyers of 'access' to community for ads						
Internal Stakeholders										
IS	Internal Stakeholders	Project Consortium	Project Management	Responsible for project delivery on objectives, manages and monitors progress	0	0	0	0	0	1
IS	Internal Stakeholders	Project Consortium	Project Staff, consultants and sub-contractors	Produces or contributes to deliverables	0	0	0	0	0	1
IS	Internal Stakeholders	Project Consortium	Advisory Bodies	Overall governance and guidance	0	0	0	0	0	1
IS	Internal Stakeholders	Project Consortium	Host organizations - support staff	support visibility and smooth operation	0	0	0	0	0	1
IS	Internal Stakeholders	Demo Cases	CO Leadership	Coordinates all activities in the demo cases as guided by the PMT	0	0	0	0	0	1
IS	Internal Stakeholders	Demo Cases	CO Team - community organizers	1-2 DC team members assigned to perform the "leg work" involved in mobilizing the local community for the CO	0	0	0	0	0	1
IS	Internal Stakeholders	Demo Cases	CO Team - commercialization leaders	ensure continued and systematic consideration of the DC potential for future upscaling and transition to a sustainable operational model	0	0	0	1	0	0
IS	Internal Stakeholders	Demo Cases	CO Team - technical roles	ensure smooth operation of the pilot platform, help fix problems, and act as contact points for pilot users	0	0	0	1	0	0
IS	Internal Stakeholders	Demo Cases	CO Team	contribute to the DC development	0	0	0	0		1