Crowdsourcing and Human Development:
The Role of Governments

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ABSTRACT

This paper explores in which way crowdsourcing and other new technologies can help governments in developing countries work more closely with stakeholders to improve public policy making and allocate public resources in a more responsive fashion vis-a-vis people's needs and priorities. The paper first sets a general background to frame the issues followed by a short literature review of the latest research in this area. It then proposes a new analytical framework which is used to study several cases studies from which it draws conclusions and suggests areas for further research.

Categories and Subject Descriptors

K.4.1 [**Public Policy Issues**]. Privacy. Regulation. Use/abuse of Power. Human Safety. Ethics.

General Terms

Economics, Human Factors, Theory

Keywords

Crowdsourcing; Citizensourcing; Democratic Governance; Human Development; e-Participation; Empowerment; e-Democracy; e-Governance; e-Government; Public Policy; Public Policy Making; State Capacity; Institutional Development; ICT for Development

Disclaimer

The views expressed herein are those of its authors and do not necessarily represent the views of the United Nations Development Programme.

1. CONTEXT AND KEY ISSUES

Nowadays, with almost 3 billion Internet users and close to 4.5 billion mobiles users [1], the potential for crowdsourcing development priorities is more feasible and relatively more cost effective than ever before. Taking advantage of the rapid diffusion of new information and communication technologies (ICTs), governments in industrialized nations and, less so, in developing countries, are starting to move from top-down and kiosk-centric e-governance designs [2] to approaches that involve the participation of and interactions with stakeholders to learn about their needs, respond effectively by providing value-added public

and information services, and jointly develop innovative solutions to public problems [3].

Current evidence suggests that using collective intelligence for problem solving harvests optimum benefits and activates continuous and sustainable innovation [4]. In other words, making stakeholders part of the solution and giving them voice in decision-making processes can make a key difference when it comes to tackling key public challenges, including development priorities. New technologies which allow voice aggregation, such as crowdsourcing, open data, and big data, among others, can indeed be harnessed by local and national institutions to capture, listen and respond to such voices.

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From the viewpoint of the public sector, randomized crowdsourcing, especially at the local level, can help governments improve decision-making and allocate public resources more effectively to address local needs and gaps, using citizens' inputs as part of specific collective objectives or common goals [5]. It can also serve as a means to make government more transparent and accountable [6].

Having voice and being able to participate in decision-making processes is essential for strengthening democratic governance and achieving key development goals. And crowdsourcing can enhance this by giving voice to those who had none before, thus fostering participation. However, it is critical to create governance mechanisms that formally or institutionally incorporate people's voices and inputs as integral part of some of the key public policy and decision-making processes.

This paper explores the potential that crowdsourcing offers to national and local governments in developing countries, working in tandem with stakeholders, to identify local development priorities, design relevant policies and allocate public resources for programme implementation and support. The ultimate goal of such public investment decision is the advancement of human development, which makes people integral part in the determination of their own future.

2. WHERE ARE WE TODAY?

ICTs, especially mobile phones in developing countries, are opening new channels of communication and interaction among stakeholders and between people and governments. From a governance perspective, they can empower people by furnishing innovative platforms to engage with public institutions and demand more and better services or information. By the same token, ICTs can also strengthen government overall capacity by fostering institutional capacity, enhancing service delivery and triggering change processes within public institutions thus creating new possibilities for open government [7].

Today, we are witnessing an explosive growth in the use of new ICT platforms by stakeholders, fueled in part by the growth of the middle classes in developing countries [8]. Governments in this group of countries, however, have not yet fully embraced new technologies for a variety of reasons ranging from lack of basic capacity to political will. This is certainly the case for crowdsourcing.[1]

Based on early mobile crowdsourcing pilots in Africa including Ushahidi[2], Sharma [9] developed a crowdsourcing model with five components ranging from vision and human capacity to trust, infrastructure and governance issues. Although the model is supposed to be flexible and thus open to further enhancements, the cases selected for his analysis were not related to public institutions or development priorities.

Hilgers and Ihl [4] gave a structural overview on how external collaboration and innovation between citizens and public administrations - they call it "citizensourcing" - can offer new ways of citizen integration and participation, enhance public value creation and even influence political/policy decision-making processes. Nevertheless, their entire analysis is focused on industrialized countries.

Bott and Young [5] expanded Sharma's model [9] and focused their attention on the impact crowdsourcing can have in enhancing democratic governance and managing conflict situations. While the paper is mostly addressed at donors, it suggests that crowdsourcing in government can be effective for participatory development planning and the monitoring of critical issues by stakeholders and citizens. This then leads to increased accountability and enhanced political legitimacy.

Sowmya and Pyarali [10] analyzed five government crowdsourcing websites in industrialized countries and concluded that, on the government side, there were adequate infrastructure and information management systems to transfer the reported issues to relevant government councils. On the citizen side, the researchers found that participation incentives have little impact on the success of the initiatives under consideration. They also observed that, unlike e-commerce platforms, personalization and customization had the least impact in influencing maximum crowd participation.

Taking a high-level approach, a recent study by Brabham [3] identified four problem-based crowdsourcing approaches in government,[3] but did not link this to any specific core government function. He also focused only on industrialized countries where adequate state capacity, infrastructure and resources are usually readily available, unlike most developing nations.

Bott, Gigler and Young [6] looked at the role of crowdsourcing for better governance in fragile state contexts. They also piggybacked on Sharma's [9] model of critical success factors for crowdsourcing, but added additional factors, such as crown motivation, the vision and strategy of the crowdsourcing initiative, linkages to and trust on the process, external environment and existing infrastructure, and human capital. In their view, drawing attention to the motivation of the crowd in contexts where public opinion virtually has no space is a key factor to make crowdsourcing effective, while all other elements can play a role in specific situations. However, with the exception of Kenya's Huduma project[4], they did not directly focus on the public sector.

This quick review of existing research shows that most academic articles about crowdsourcing in government center on industrialized countries (see [3], [4] and [13]). There is thus a research gap when it comes to countries in the global South. Furthermore, current research on the topic is strongly biased towards the demand-side of the equation. That is, most of it highlights the empowerment of people and stakeholders while relatively few papers discuss the role of crowdsourcing in and by public institutions. This paper aims at contributing to both of these issues.

3. ANALYTICAL APPROACH: A GOVERNANCE FRAMEWORK

There is no overall agreement on the role and impact of new ICTs on the advancement of human development. On one side, we find skeptics who essentially see ICTs as simple tools, like a hammer, which can be used to hit all available nails, if any, and usually fail to make a real difference on the ground [14]. On the other side, we have the cyber-optimists who see ICT as a solution to most if not all issues [15]. For the purposes of this paper, ICTs are seen as enablers for development that can also bring transformational changes under specific political and institutional contexts [16]. But how does this actually happen?

Figure 1: Dual Role of Citizens

To answer this question we need to first develop an analytical framework that centers on governance and not just technology.

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[1] Participatory budgeting, which started in the late 1980s in Brazil, can certainly be seen as a crowdsourcing pioneer sans the technology. Recent efforts however have started to introduce new technologies, crowdsourcing included. The key issue here is to measure the real impact of ICTs and technologies in participatory processes. The jury is still out. For a good overview of the impact of participatory budgeting in governance and development see Carter [11] and Peixoto [12].

[2] http://ushahidi.com/

[3] Such as knowledge discovery and management; distributed human intelligence tasking, broadcast search; and peer-vetted creative production.

[4] http://www.huduma.or.ke/

We then need to examine in detail a few examples within the context of the framework to then draw some conclusions and suggest a way forward.

Our framework needs to address three core issues: 1. *Why* should stakeholders be engaged in decision-making processes; 2. *Where and when* should this take place?; and 3. *How* can states engage with stakeholders and people in general to capture their voices and factor them into final development agendas. And in all three, ICTs can play a role, not only in facilitating the processes, but also in bringing new solutions, platforms and networks and thus provide innovative ways to reach the intended outcomes. Crowdsourcing is a good example here.

Governments and the state are the ones responsible, directly or indirectly, to design policies and oversee the implementation of development agendas and programmes. However, this process, which might be complex in some situations, does not necessarily involve the participation of non-state actors. If anything, stakeholders are usually informed about the final decisions and outcomes of the process. As a matter of fact, stakeholders are rarely fully engaged in these key governance processes and thus have little to no voice in the completion of development agendas that will undoubtedly affect their own lives in the short run.

Taking a people-centric approach when deploying ICTs can make a big difference and at the same time have a positive impact in overall development processes, especially if we can factor in key governance factors [17]. The standard view on this, purported by traditional e-government policies and programmes, sees people exclusively as "clients" of the state who interact with public institutions to receive public services or information. They are thus typical consumers who are concerned about cost, time, quality, easy of use, etc. of the products and services being furnished (see Figure 1). Here, ICTs can have a direct impact in terms of production, distribution, and consumption of the services and information being offered—as well as in beefing up state overall capacity, institutions included, to be able to respond to people's demands without friction or conflict.[5]

Figure 2: Policy Cycle

What is usually not factored in here is that people are, at the same time, "stakeholders", particularly in democratic societies [18]. As such, they thus have the right to voice their concerns and actively participate in the design and implementation of public policies and development agendas.[6] This is a two-way street where communication and interaction are key and people can be empowered to effectively liaise with governments and work together towards common goals. This approach, more typical for e-governance programmes, brings in key democratic governance principles, such as participation, transparency and accountability, which are also key ingredients of new open data and open government[7] initiatives, for example.[8]

Furthermore, involving stakeholders in policy and decision-making processes can also furnish governments with an overall idea of the demand-side on the equation. If policy makers can have adequate information about concrete gaps, needs and priorities of communities, they can then be in a better position to both design programmes and allocate public resources more effectively while simultaneously addressing key development priorities.

Governments thus have at least two incentives for involving stakeholders in public policy making: one, to further enhance democratic governance by promoting people's participation in key governance processes; and two, to design policies and deploy programmes that directly respond to the concrete needs and priorities of people and thus advance overall human development.[9]

While the idea of people's participation in development processes is not at all new, it is important to draw a line in terms of where and when this should take place to make a real dent in policy and decision-making processes. Since we are dealing with policy design and implementation, it is thus critical to introduce the policy cycle and frame the engagement and participation of stakeholders within this particular political area (Figure 2).[10] This defines where meaningful policy participation should take place. There are indeed many participatory processes that engage with stakeholders outside this cycle and thus are useful for other purposes. But most of them do not transcend into the policy arena.

Note that equally important here is where in the policy cycle should stakeholders be engaged. For instance, if a specific issue is not part of a given policy agenda, then it will be much harder to make it relevant within ongoing policy process. In this light, stakeholders should be engaged or demand to be engaged at the very start of the policy cycle when agendas are being designed. And this defines when they should be participating, the key entry point for stakeholders to be part and parcel of policy making processes.

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[5] This is a critical issue, particularly in poor nations, which we cannot address in this paper.

[6] A similar model exists in the business sector where people can be shareholders. However, governance decisions here are made based on the quantity of shares that people own. In the public sector, decisions should be made more on a qualitative fashion; for example, people and communities that will be the most impacted by specific policy decisions should have a larger saying in the overall process.

[7] The Open Government Partnership comes to mind here, http://www.opengovpartnership.org/

[8] Needless to say, there is a specific dynamic between the dual role of citizens vis-a-vis governments, which we cannot develop in this paper.

[9] Needless to say, this is not an entirely government-driven agenda. Stakeholders can also demand to be included in such processes and thus put pressure on governments to open the participation doors. This can also be crowdsourced for example.

[10] See [19] or on crowdsourcing for politics and policy [20].

Finally, we have the issue of how stakeholders can participate within the policy cycle. Participation has several layers starting with the basic and most used mechanisms used in development, such as information sharing and basic consultation. For the purposes of this paper, we will be using the participation layers depicted in Table 1 below. In essence, there are four participation levels which go from simple information sharing to co-creation and full partnership between governments and the people. Note that more complex levels of participation demand not only a fully empowered citizenry, but also adequate state capacity to effectively engage with people, respond to demands and be able to manage and solve potential conflicts.

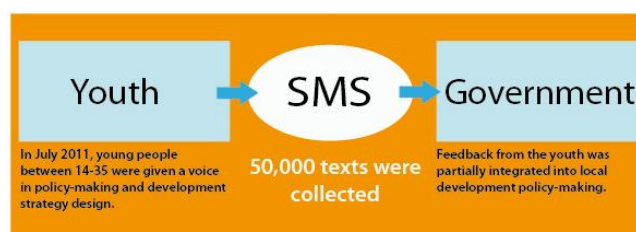**Table 1: Spectrum of Public Participation[11]**

Type of Participation	Definition	Commitment	Democratic Value
Information	Balanced and objective information to assist participants in understanding the problem and alternative solutions.	Keep informed.	Transparency, accountability.
Consultation	Obtain public feedback	Listen and acknowledge concerns/proposals (provide feedback on whether the decision was influenced)	Open/broader public sphere.
Decision-making	Work with the public to make sure that their concerns are understood and considered.	Directly reflect public concerns in decision-making.	Civic engagement; the move towards participatory democracy.
Co-governing	Place final decision-making in the hand of the public.	What the public decided will be implemented.	

It is at this point where crowdsourcing, as well as open data, access to information via ICTs, e-participation, etc., can play a truly transformational role. By providing people, stakeholders and potential beneficiaries the networks and platforms that allow them to be integral part of policy and decision-making processes and foster deeper levels of participation, ICTs can have a distinct qualitative impact in the identification of local development priorities and their subsequent implementation on the ground.

4. CASE STUDIES AND FINDINGS

The selection of the examples presented in this paper was based on the analytical framework discussed above. Specifically, cases where higher levels of participation of stakeholders in policy and decision-making process were explicitly addressed, seemed the best candidates to analyze the role and impact of crowdsourcing, in its various incarnations, in governance processes.

4.1 Madagascar: The Wisdom of the Crowds[12]

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[11] As seen in Trechsel [21], based on Vedel [22], Fung [23] and the International Association of Public Participation [24].
[12] Full case study is here: https://www.undpegov.org/node/11730

Figure 3: Overview Madagascar

4.1.1 Objective
Traditionally, village councils in Madagascar give elders substantial say in community life, while young people often have no voice, and are in fact discouraged from speaking. To address this gap at the local level, the United Nations Development Programme (UNDP), in partnership with the United Nations Children's Fund (UNICEF), launched this project to promote and broaden youth participation in two communities in Madagascar. The project offered 14–35 year old citizens for the first time the opportunity of having voice in local policy/decision-making and governance processes.

4.1.2 Implementation
The project approached municipal, regional and national level authorities to ensure that feedback crowdsourced from youth could be taken into account for local and regional policy making. However, no formally binding arrangements were instituted to ensure this will indeed occur, nor was there any discussion of formalizing stakeholder inputs into existing decision-making processes and channels.

The collection of youth perspectives via SMS crowdsourcing began in July 2011. Over 44,000 youth in the two communities participated, submitting their views on human rights, citizenship, and employment in two regions. Two national telecom operators helped collect over 50,000 text messages. By the end of the year, a lobbying campaign was started in one of the regions to generate awareness around key issues affecting the lives of youth and promoting the potential integration of young people's opinions in local decision-making processes.

Youth who took part showed a clear desire to speak out and this forum gave them the opportunity to share their views and opinions with policy makers. Participants were also able to give input anonymously and express themselves freely without parental control. Participants were approached through youth organizations and networks, which in turn helped these organizations to strengthen their key role in empowering young people and enhance their collective voice.

4.1.3 What happened?
While increasing numbers of young Malagasy use mobile phones, many of the young and poorer participants lacked the skills to be fully part of the programme. For instance, the use of SMS and short-codes was challenging for many young people.

Although the project aimed at participation in decision-making processes, this was not really achieved as national and local authorities, although initially committed to the programme, changed their minds at the end, while having little capacity to capture the inputs furnished. Feedback from youth was only partially integrated into policy making in one of the provinces. The draft project evaluation [25] suggests that although the local government accepted the inputs from the youth, it is not clear how this actually happened nor if it had any impact. The evaluation

also suggests that the national government will need solid support to run similar participatory processes (mobile, online or otherwise) for public decision-making in order to reach its younger population, as well as others.

In terms of our framework, we can note the existence of changing political conditions which might have prevented the full engagements of non-state actors and stakeholders by local governments, a fact that stopped the incorporation of the crowdsourced feedback into the policy design phase of the policy cycle, in spite of the original ambition of having a decision-making participatory process. Note that our three factors thus can move in different directions within a single context.

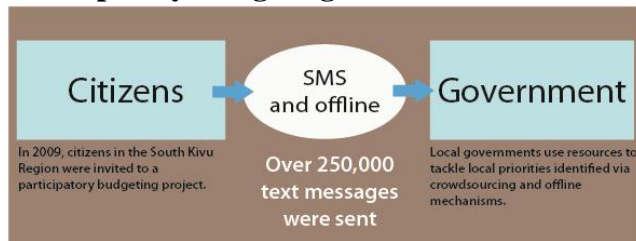## 4.2 Democratic Republic of the Congo (DRC): Participatory Budgeting in South Kivu[13]

Figure 4: Overview South Kivu

4.2.1 Objective
Conflict-ridden DRC is characterized by the lack of strong public institutions, especially at the local level. But this, at the same time, presents opportunities for introducing governance innovations where no legacy platforms and mechanisms exist.

This is the case of the government of the South Kivu region that, supported by the World Bank, launched a participatory budgeting project in 2009 [26][14] with the objective to assess citizens needs, empower local stakeholders and promote transparency of public fund management and allocation.

4.2.2 Implementation
Engaging representatives from government, civil society organizations, academia, and telecommunications service providers at a very early stage ensured sufficient buy-in for the programme in the province [26]. Citizens were indeed able to select and vote on priorities that they deemed most pressing to their communities. When agreement was reached, the local government devoted a specified percentage of local budgets to the agreed initiative.

Mobile phones and offline mechanisms were used to invite people to participatory budgeting assemblies, to capture feedback and allow stakeholders to choose among different options. Face-to-face meetings were combined with mobile SMS to ensure people without access to ICTs were also included. Over 250,000 text messages were sent throughout the different stages of the project. The provincial government saw an increasing capacity of the local

government to better allocate resources and communities involved had seen an increase in transfer of funds from the provincial to the local level [27].

4.2.3 What happened?
After the initial pilot, the provincial government agreed to start transferring public funds to local governments with the caveat that towns have to use participatory budgeting to allocate resources. In addition, tax compliance in the province increased significantly which seems to corroborate that transparency leads to higher fiscal revenues. Because citizens could associate paying taxes with tangible improvements in service delivery, local tax collection increased up to twenty times in some cases. In addition, the government of South Kivu made participatory budgeting legally required throughout the province in late 2012 [28].

Local governments in turn use the new resources to tackle local priorities identified via crowdsourcing and offline mechanisms. These included water access, improves road access, more classrooms and health centers, and better sanitation, among others.

This case of co-governing was successful and the project is now expanding to other provinces in the DRC. It has also been adopted and implemented in Cameroon, and several other African countries, including Kenya, Madagascar and Mali, have expressed keen interest in replicating it [28].

In terms of our framework, we have a successful case of a co-governing programme with clear political will of government to engage with stakeholders at various levels within the policy cycle.

While the government might have been initially driven by fiscal reasons to move along these lines, it soon learned that both the democratic governance and human development impact was as important, if not more.

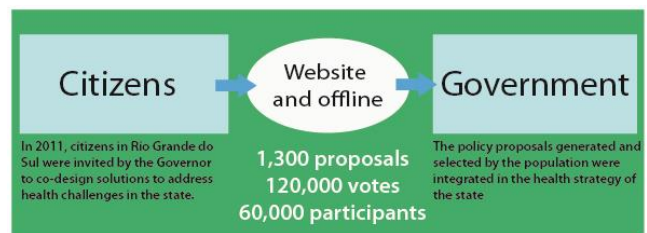## 4.3 Brazil: Crowdsourcing of Policy Solutions in Rio Grande do Sul[15]

Figure 5: Overview Rio Grande do Sul

4.3.1 Objective
As part of Open Government programmes in Brazil, the state of Rio Grande do Sul launched a crowdsourcing policy-making initiative called "Governador Pergunta"[16] ("The Governor Asks") in late 2011 with support from the World Bank and the Open Development Technology Alliance (ODTA) to bring the government closer to its citizens and support better citizen engagement through policy-making crowdsourcing. "Governador

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[13] http://blogs.worldbank.org/ic4d/mobile-enhanced-participatory-budgeting-in-the-drc, http://go.worldbank.org/G1A1W5NNL0 and http://www.youtube.com/watch?v=5ByBEpqVTTo

[14] The project was first launched in the communities of Kadutu, Ibanda, Bagira, Ngweshe, Wamuzimu, Kabare, Luhwinja and Bafuliro.

[15] http://blogs.worldbank.org/publicsphere/technology-drives-citizen-participation-and-feedback-rio-grande-do-sul-brazil and http://beta.ict4gov.org/rio-grande-do-sul-policy-crowdsourcing/

[16] http://gabinetedigital.rs.gov.br/govpergunta/resultados/

Pergunta" is one of four tools[17] for participation in Rio Grande do Sul. The governor asks citizens to send in proposals on matters of great importance to the state through websites or offline mechanisms. In the end, the authors of the chosen contributions are invited to meet with the governor to discuss the proposals and possible solutions [29].

In the first edition at the end of 2011, citizens were invited to co-design solutions to address health challenges in the state.

4.3.2 Implementation
The initiative used a multi-channel crowdsourcing approach (web, mobile and offline)[18] to collect feedback from citizens on policy options and allow them to choose among different proposals. In order to ensure a broader inclusiveness, vans equipped with Internet access and trained personnel travelled across the state to collect feedback from marginalized communities. Complementary face-to-face meetings for the elaboration of policy proposals were carried out in the poorest regions of the state - 20,000 participants took part in 22 meetings across the state.

Citizens were also able to participate through Facebook through an application developed specifically for the initiative. The technological design addressed challenges commonly associated with crowdsourcing efforts, such as preventing information cascades and early voting bias. The process generated over 1,300 citizen proposals, with more than 120,000 votes cast to prioritize them. It is estimated that about 60,000 people participated [29].

4.3.3 What happened?
This project reached the participation type of "decision-making" because the policy proposals generated and selected by the population were integrated in the health strategy of the state. Altogether, 50 proposals were implemented by the Government Health Department. This resulted in the creation of a specialized network for prenatal and childbirth, the implementation of a center for high-risk pregnancy in the North Coast, a 166% increase in the allocation for primary health care and a transfer of 44 million USD for family health programmes. In addition, urgent medical service bases were increased from 85 to 151, financial support was given to three regional hospitals and an electronic medical health record system was launched in the region of Passo Fundo. ODTA and the World Bank are replicating this approach in other states of Brazil [29].

In terms of our framework, we have a successful decision-making initiative driven very aggressively by a provincial government and involving stakeholders in the policy design and policy implementation phases of the overall policy cycle. Strong political will was decisive here, with the caveat that a change of government might stop the initiative on its tracks is the incoming decision-makers happen to have a different approach to the issue.

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[17] To find out more about the other three tools, "Governador Responde", "Governador Escuta" and "Agenda Colaborativa", read [29].

[18] The technology used for the project was a collaboration between Princeton University and the government of Rio Grande do Sul and was replicated for other municipalities and states in the country.

4.4 Main Findings
All three examples studied above were undertaken by provincial and local governments where development gaps are usually more glaring. This indicates that in most cases it is probably better to start at such level and avoid a central government approach, except when trying to institutionalize participatory approaches at the national level.

While the approaches taken by local governments differ, political will by local authorities, combined with pressure from stakeholders in some cases, is a key entry point for any sort of crowdsourcing project. The case of Madagascar illustrates this point best as once political conditions remain unstable and prevent governments from maintaining specific level of policy continuity, it is difficult to have impact on policy and decision-making processes, no matter how large the volume of the contributions provided by stakeholders.

Two of our cases took place in Least Developed Countries (LDCs) where Internet and, less so, mobile penetration, is still incipient. This raises the issue on the role of new technologies for crowdsourcing and enhanced participation in policy-making processes. A combination of online, SMS and offline platforms or mechanisms is the best approach here to ensure full representation.

Related to this is the impact in terms of reach out and scale that technologies can have in these processes. From a quantitative viewpoint, using mobiles and SMS facilitates the inclusion of more people in decision-making processes, provided people want to participate. Qualitatively, the story is a bit different as the evidence that ICTs by default "improve" governance processes is not there yet, in spite of the examples provided above. More analytical research is needed here.

Related to the last point, there is need for more rigorous evaluation to verify the accuracy and content of the text messages and to ensure that the approach is immune to elite capture or exclusivity [25].

All in all, the cases presented here suggest that developing country governments can already start to use crowdsourcing to include stakeholders in policy making but need to be strategic on how to do this effectively. This will require beefing up state capacity, local and national, while introducing governance and ICT innovations to build strong institutions, enhance democratic governance, and prevent conflict.

Table 2: Overview of case studies

Name	The Wisdom of the Crowds (Madagascar)	Participatory Budgeting in South Kivu (DRC)	Crowdsourcing of Policy Solutions in Rio Grande do Sul (Brazil)
Description	Engagement with youth (14–35 years) for the first time to provide the opportunity of having voice in local policy/decision-making and governance processes.	Participatory budgeting initiative with the objective to assess citizens needs, empower local stakeholders and promote transparency of public fund management and allocation.	Crowdsourcing policy making initiative to bring the government closer to its citizens and support better citizen engagement.
Outcome	Participation of over 40,000 youth providing	Increased tax collection. Local governments	Over 1,300 citizen proposals, submitted with

	feedback on three code development topics.	using the new resources to tackle local priorities identified via crowdsourcing and offline mechanisms.	more than 120,000 votes cast to prioritize them. It is estimated that about 60,000 people participated
Political will	Weak political will, lack of capacity to manage process and feedback.	Strong local political will involving several layers of governments.	Strong, centralized political will the the provincial level
Policy cycle	Intended at policy design, but crowdsourced feedback was not incorporated.	From agenda setting to implementation and assessment.	Policy design and policy implementation
Participation level	Although the project aimed at participation in decision-making processes, it stayed at the level of consultation.	Co-governing, stimulated by fiscal incentives and resource allocation at the local level.	Decision-making to identify local priorities in conjunction t with stakeholders.

5. CONCLUSION

This paper has made the case for the relevance of crowdsourcing in and by developing countries public institutions to foster development outcomes. It has proposed an analytical framework focused on stakeholder participation levels in public policy making, endorsing the view that new technologies play a key role as enablers - and not as a goal themselves. Using a governance framework that includes three key components, we have studied three cases in the developing world showing different variations in terms of both objectives and actual outcomes. The ultimate goal of government crowdsourcing interventions, directly or indirectly as in the case of Madagascar, is to foster democratic governance via inclusive participation and enhance human development through more responsive policies and programmes—and not just to use the latest technologies per se or only augment access to new technologies.

Our research has shown that, under certain conditions, crowdsourcing can be an effective platform to strengthen stakeholder-government interactions who - working together - can reach win-win situations that permeate all sectors of society while fostering inclusion and participation. In addition, we have seen that effective crowdsourcing is also effective in poor countries that can be just coming out of long-standing conflict situations—as long as the focus is centered on local governments and local communities.

One key element, which is usually ignored when discussing the potential of crowdsourcing, relates to the institutionalization of participatory processes into existing decision-making and governance mechanisms. A good example here is the Philippines' Guingona Crowdsourcing Act, filed in 2013, which allows the public to contribute to the formulation, improvement, and creation of laws, through the use of the internet or other information and communications system.[19] Having such mechanisms in place will

reduce the heavy dependence of crowdsourcing initiatives on sheer political will - but at the same time, such transformation demands local political will. The question here is if ICTs and crowdsourcing can also play a transformational role in this particular process.

By launching the crowdsourcing web platform "MyGov"[20] at the end of July 2014, India sets a good example for institutionalizing participatory approaches at the national level. This might become a trend for other countries in the near future.

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