Reducing Air Pollution in West Africa through Participatory Activities: Issues, Challenges and Conditions for Citizens' Genuine Engagement

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The authors received a grant from the Social Sciences and Humanities Research Council of Canada (430-2016-01029) and from the International Development Research Center (107347) for this research.

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© Springer Nature Singapore Pte Ltd. 2018
J. Servaes (ed.), *Handbook of Communication for Development and Social Change*,
https://doi.org/10.1007/978-981-10-7035-8_25-1

Abstract

Largely supported by international donors, participatory initiatives are multiplying in Africa, to such an extent that some observers refer to a new "tyranny of participation". The challenges associated with participatory democracy are even more acute in developing countries. In a context where the notion of civil society in these countries remains unclear, the inclusion principle is difficult to enact, particularly with regard to women who are still largely underrepresented in this type of process. Moreover, there is a risk that participatory initiatives widen the gap between "politically engaged" citizens and their more apathetic counterparts. Power relationships between participants are another important issue. If not properly tackled, they can lead to the maintenance of traditional hegemonic discourses – rather than to innovative ways of thinking. Lastly, the concrete implementation of the solutions or compromises emerging from participatory processes is paramount for their legitimacy.

This chapter examines and compares two cases of participatory processes put forward in the context of a public health project aiming at reducing air pollution in the cities of Cotonou (Benin) and Dakar (Senegal). This allows us to reflect on the issues, challenges, and conditions of success of the participatory processes orchestrated in these contexts. It also brings support to the need to address various challenges when participatory initiatives are fostered and shows that these challenges are met differently in the two countries.

Keyword

Public participation · Air pollution · Public health · Senegal · Benin · Communication · Dialogue · Inclusiveness · Power relationships

Introduction

In the last two decades, acknowledgment of the relevance of citizen participation by governmental actors has risen in Occidental countries. Given the limits of representative democracy, participatory democracy initiatives are more and more considered legitimate, if not necessary, in some instance (Bacqué and Sintomer 2011; Blondiaux and Sintomer 2002; OCDE 2001). Science communication has also adopted a more participatory framework, moving from the deficit model to a dialogic one (Brossard and Lewenstein 2010; Nisbet and Scheufele 2009). This paradigm shift is also observed in some African countries (Cissoko and Toure 2005; OCDE 2013) where there is a movement from an elitist mode of management to modes of governance that are said to be more and more participative (Fung and Wright 2003; Tenbensel 2005). Indeed, participative governance is seen as the "missing link" to fight against poverty (Carrel 2007; Cling et al. 2002; Dom 2012; Schneider 1999). The objective is, of course, to gain greater legitimacy of the decisions made by governing bodies but also to support the efficacy of those decisions through the acknowledgment of

citizen or "lay" knowledge (Callon et al. 2001; Fisher 2009). The consideration of this lay knowledge is helpful in the development of these decisions and for their uptake by communities, hence favoring their implementation.

This openness to participation comes with numerous challenges. A consensus is slowly emerging around what would be good practices in terms of public participation (Bacqué and Gauthier 2011; INM 2013; Blondiaux 2008; Fung 2006; Gastil and Levine 2005). These are based on cumulative learning emerging from participatory experiences in Northern and Western Europe (Anderson and Jaeger 1999; Gourgues 2012; Koehl and Sintomer 2002), in North America (Bherer 2006; Rabouin 2009), and to a certain extent, in Latin America (Baiocchi 2003; Garibay 2015; Weyh and Streck 2003). It remains to see whether such "basic and procedural rules" to insure sound processes can be transposed to other social contexts such as those of African, Asian, or Eastern Europe societies. Indeed, the mechanical application of so-called "universal" rules on participation, which obscure local specificities, may lead to unacceptable experiences of participation or, worse, to the disinterest – or even cynicism – of the populations one seeks to mobilize.

As a step toward a better understanding of participatory processes in other social contexts, we propose to highlight the participatory challenges encountered in two cases of participatory processes put forward in the context of a public health project aiming at reducing air pollution in the cities of Cotonou (Benin) and Dakar (Senegal). Our analysis is drawn from the direct observation of participatory activities organized in these two cities, from semi-structured interviews with participants, and from conversations with the team implementing the project. A guided visit of the discussed neighborhoods has also highlighted our perspective. This empirically based approach allows us to reflect on the issues, challenges, and conditions of success of the participatory processes orchestrated in these specific contexts. The actors' mutual influence, resistance and opportunities emerging from these processes, political significance of these experiences for the participants, as well as the social effects generated by them are looked upon, thus answering the call of researchers in the field (Lavigne Delville 2011).

Context

In 2012, more than 7 million of deaths in the world were attributable to the exposure to air pollution (WHO 2014). Air pollution was thus identified as an important factor for non-transmittable diseases such as cardiovascular diseases, asthma, and *bronchopulmonary* carcinoma (Clark et al. 2013; Laumbach and Kipen 2012; Martin et al. 2013; Pascal et al. 2013; Pope and Dockery 2006). West African cities are strongly affected by this problem, notably for chaotic industrial activities (with some factories directly located within cities), weakly organized transportation systems characterized by the multiplication of motorcycles and old vehicles, and polluting sources of energies, like traditional fire oven inside households (Liousse and Galy-Lacaux 2010; Liousse et al. 2014). There are few available data allowing for the quantification and characterization of air pollution in West African cities, the

evaluation of its effects on health, and the influence of lifestyle habits on the situation (Perez et al. 2013).

In this perspective, the International Development Research Center of Canada is founding a research that aims at improving the understanding of urban air pollution and its impacts on non-transmittable breathing diseases in four west African cities, Abidjan (Ivory Coast), Cotonou (Benin), Dakar (Senegal), and Ouagadougou (Burkina Faso). The project is a collaboration between four African universities and is under the auspices of the Communauté de pratique en écosanté en Afrique de l'Ouest et du Centre (CoPES-AOC). Since 2006, the CoPES-AOC has been very active in the region to promote an ecosystem approach to health (ecohealth), to foster collaboration between scholars and practitioners, and to train a new generation of African scholars. The research also aims at developing prevention strategies in partnership with community organizations in these cities. More specifically, the Air Sain project, a component of the research, has the objective to develop and evaluate, in these urban west African contexts, adaptation strategies that benefit municipalities and communities and contribute to environmental protection, population health, and social and gender equity. The involvement of the actors directly concerned by the issue is paramount for the success of the project, so they can have their say in the definition of realistic and efficient interventions. Political actors, industries, funding organizations, as well as local communities are thus targeted, knowing that the more vulnerable members on the economic and healthy plans of the latter are not always aware of the public health problems posed by air pollution. Hence, the Air Sain project goes beyond the "deficit model" in communication (Brossard and Lewenstein 2010; Nisbet and Scheufele 2009), which essentially consists in transmitting the knowledge. It is rather a project based on an ecohealth perspective, where different types of knowledge – local, traditional, scientific, and practical – must be considered so that people can relate to them and integrate them in their reality (Saint-Charles et al. 2014; Charron 2012; Webb et al. 2010). This is particularly important since the changes of behavior promoted to reduce air pollution may appear in contradiction with deeply rooted cultural or religious practices that are considered as "good" by the persons (such as using coal or fire for cooking or burning incense to remove bad smells). The recommended solutions must take into account the preoccupations and restrains of the different groups of the population in order to be socially acceptable. Social acceptability can be defined as "the result of a process through which stakeholders build together the minimal conditions under which a project, a program, or a policy will be harmoniously integrated in its natural and human environment" (Caron-Malenfant and Conraud 2009, our translation). The co-construction principle underlies the notion of social acceptability and calls for public participation (Fortin et al. 2013; Batellier 2015).

Air Sain is thus a participatory project. As shown by a growing number of studies, public participation comes with many challenges, which can be grouped in four categories (INM 2013). The first challenge consists of fighting the assumed popular apathy by convincing citizens to take part in participatory initiatives. The second challenge consists of avoiding reproducing inequalities in participation, which questions the inclusion of marginalized populations, notably women (Raibaud

2015). As such, there is a risk that participatory initiatives widen the existing gap between engaged citizens and their more apathetic counterparts (Blacksher 2013). Another challenge concerns the balance to reach between experts and citizens' voices and the difficulty to avoid the reproduction, within participatory initiatives, of the usual power relationships leading to the traditional "hegemonic discourses" (Abelson et al. 2011). Hence, an effort has to be made to make sure that "lay citizens" are not evacuated from the process to the benefit of a "new elite of participation" (Bherer 2005). A last challenge concerns the implementation of the solutions or compromises emerging from participatory initiatives. The initiatives that are not followed by concrete results will likely be considered as mere legitimation attempts of public decisions and will be associated with an instrumentalization process (Bherer 2011; Blondiaux and Fourniau 2011; Clarke 2013; Levine and Nierras 2007).

We can think that all those challenges are even more acute in West African countries. Promoted by international donors (Norad 2013), public participation in governmental decision is often seen as a "'bureaucratic populism' that has structured state interventions from the beginning of the colonisation" (Lavigne Delville and Thieba 2015, p. 214, our translation). Considered as hegemonic, public participation is even deemed, by some observers, as "a new tyranny" (Cooke and Kothari 2001). It becomes particularly difficult, in this context, to fight against the ambient cynicism that often accompanies public participation initiatives in emerging countries. Moreover, with the very notion of civil society remaining unclear (Hearn 2001; Bayart 1986; Otayek 2009), the inclusion principle is hard to attain, particularly toward women, still largely underrepresented in participatory processes. Even when the inclusion principle is respected, having one's voice heard is not always easy when the presence of other participants is deemed more legitimate, based on hierarchical and status differences. Even if one cannot conclude that these processes come under "pure instrumentalization" (Lavigne Delville 2011), the political and institutional contexts specific to each initiative must be taken into account in order to understand the dynamics that occur, hence the relevance of case studies (Lavigne Delville and Thieba 2015). Empirical approaches that encourage the consideration of citizens' daily ways of life and sense of citizenship are a good start to turn back to a strictly normative vision of participation (Robins et al. 2008) and to foster more sustainable changes.

Participation in Practice

Our empirical perspective is based on two participatory activities in each of the country studied, mostly held in local languages (Fon in Benin and Wolof in Senegal). The activities slightly varied between the two countries. In Benin, we report on a preparatory meeting with four women identified as leaders in the Cadjehoun neighborhood; the objective of this meeting was to prepare the mobilization for the larger assembly to be held in this neighborhood afterward, on which we also report. In both cases, participants had already taken part to a public awareness activity on air

pollution before and, as such, had already some knowledge on this matter. A large part of the meeting in the second neighborhood, Dantokpa, aimed at discussing the information that was presented at the previous meeting in order to see what participants remembered and how this knowledge had changed their practices. A leaflet and a poster, both presenting handmade drawings, were used as a communication support during these meetings.

In Senegal, we discuss two public awareness meetings hold at 1 week of distance with about 20 community leaders from Fass-Colobane and Medina neighborhoods. The first meeting had the objective to present information on air pollution and the second, which gathered the same participants, to discuss this information in order to see what elements were remembered and what changes of practices were envisioned. A series of slides were presented during the first meeting showing, in a first part, definitions, figures, and explicative drawings and, in a second part, different sources of pollution, their impacts on health, and the measures that can be taken to reduce exposure, all of this illustrated with photos. The last slides invited participants to discuss the information just presented, for instance, by asking them to share their own experiences related to pollution. Photos showing situations of dense pollution were reused during the second meeting as a reminder and to generate discussions.

Many aspects of these four meetings support our discussion: who is talking to whom and after whom, the role of the presenter, the level of bidirectionality between her and the attendees, the thematic of the exchanges and the reactions generated by them, the level of agreement or conflict, the openness or closeness toward the subjects discussed, the diverse calls to legitimacy claimed by participants (expertise, representativeness, tacit knowledge, seniority), and the presence of leaders and their overall effects on the attendees. We also noted the various types of participants, the rules of the discussion, the spatial organization of the room, and the possible effects of the observers on the behavior of the participants. An observation grid allows for the compilation of these elements.

Interviews with activities' participants from a diversity of gender, age, and profession conducted by a locally engaged student allow for an insider view of the participating process. Interviews were conducted in the local language and then translated and transcribed. Several aspects of the participatory meetings were discussed during these interviews, such as the mobilization for these meetings, the impression on their utility, the easiness to speak during the meetings, the knowledge emerging from them, the changes of perception and behavior following them, as well as the awareness efforts toward third parties.

Learnings

By grounding our reflections in empirical concrete situations, we were able to shed light on several aforementioned challenges associated with participatory initiatives. Indeed, our results highlight risks of reinforcement of inequalities by the recruitment of already engaged citizens, the reproduction of pre-existing power relationships that

poses a threat to the inclusion principle, and the difficulty to co-construct and implement solutions emerging from these participatory processes.

Preaching to the Converted?

As stressed by Blacksher (2013), participatory initiatives pose the risk to widen the gap between politically engaged citizens and those who are mostly detached from the discussions associated with collective issues, if not apathetic or bluntly cynical about them. The different strategic choices between Senegal and Benin when it comes to the recruitment of participants highlight this issue.

In Senegal, Air Sain organizers banked on community leaders who can be associated, following Bherer (2005), with a certain “elite of participation.” These individuals, who attended the two public awareness meetings we observed, were selected based on their role in the Medina and Fass neighborhoods and on their capacity to disseminate public health messages to a broader population. For instance, one member of the Medina Women Association, another one from the Medina Notability Association, several representatives of diverse community organizations, one teacher in women entrepreneurship, two imams, one engineer, and several Badiene Gokh were parts of the meetings (literally, Badiene means auntie or mommy and Gokh means neighborhoods. Nowadays, their role is to conduct awareness campaigns on health-related topics. Their work schedule is dependent upon the topics elected by the Ministry of Health). The recruitment of participants was under the responsibility of an influent local public servant. The facilitator of the meeting was a young woman who has studied in Paris and was now doing her master with the head of the research project for Senegal.

Most of the interviewees asserted that the meetings were an occasion to learn about air pollution. One can think that participants were particularly open to new learning – in fact, several of them took some notes – in a context where many of the harmful practices that were discussed did not directly concern their own behavior. Organizers pointed up, for instance, pollution generated by urban transportation, the burning of waste or their tipping out in open-air canals, the smoking of fishes or the smoke coming from bakery (which usually cook their breads on wood fires), the detergent used by women whose occupation is to do the laundry, the cigarettes, or the selling of perfumes or other potentially toxic products. Hence, we can put forward that the discussions around the changes of practices associated with these sources of pollutants did not represent an immediate threat to these participants’ way of living. In line with this remark, several interviewees mentioned that it would have been relevant to invite at the meetings other types of participants more directly concerned by the harmful practices identified, such as mechanics, metal welders, drivers, carpenters, shoemakers, or sellers exposed to wastes in the market.

Of course, even these “elite” participants themselves generate some types of pollutants, and as such, they may have been concerned by the discussions around some household pollutants, like incense, insecticides, or spray deodorants. Indeed, when asked about the changes in their behavior they put forward following the

public awareness meetings interviewees mostly referred to a less intense use of incense. But it is probably accurate to state that, globally speaking, participants in Dakar did not feel directly concerned with the harmful practices associated with air pollution that were discussed. In this perspective, their participation to these meetings may have accentuated the gap between their perception on their “good” way of living and the noxious practices of other actors in their environment. Supporting this assumption is the fact that some interviewees mentioned, as a change in their behavior following the meetings that, from now on, they would be less reluctant to “denounce” improper behaviors of others, notably through the environmental emergency phone line put in place in Dakar. As such, one interviewee stated that, “Yes, a change in behaviour must occur because there are practices in my neighbourhood that I didn’t like at all, but I had no means to remedy them. From now on, I will make a good use of the emergency number you gave us” (Dakar 4) (all of the interviews excerpt have been translated in English by the authors.). Another interviewee mentioned: “I am exposed to emanations coming from a carpenter shop in our neighbourhood, but I plan to remedy to this situation with the environmental emergency number you gave us” (Dakar 12).

In Benin, in each of the neighborhood selected for the project, Air Sain organizers rather chose to hold one preparatory meeting with a few women identified as leaders in their community and with the neighborhood delegate, assisted by a woman animator and a woman co-animator. These women had then the responsibility to recruit a total of 60 participants for the participatory assembly that would follow, which raised some tension for the difficulty to attain such a number. The assembly that we observed in Dantokpa market gathered 15 participants, mostly women merchants (although some of them also consider themselves as leaders in their community) as well as the head of the neighborhood (a man). The facilitator was a woman from the area. Interestingly, a comparative analysis of the vocabulary used in the two countries shows that the organizers tended to refer to scientific terms in Senegal in order to talk about air pollution and its effects on health. For instance, the presentation slides made references to air composition, to the respiratory system and to the effects of asthma on it, and to cardiovascular or coronary diseases, using detailed figures to illustrate these concepts. In Benin, organizers rather favored a more accessible language, for instance, they talked about “dangerous pollutants” when referring to toxic substances coming from wastes burning. This finding reinforces the idea of a certain “elite of participation” in Senegal, which would be deemed more capable to understand a scientific presentation. The choice of facilitator (a university student in Dakar, local facilitators in Benin) also nourishes this distinction between the two countries.

Contrary to what was stated earlier for Dakar, we can think that the individuals who were part of the participatory assembly observed in Cotonou felt directly concerned by the harmful practices associated with air pollution that were discussed during the meeting, since these practices are part of daily behaviors that take place inside many households. Cooking on a wood fire oven was mentioned, as well as the use of vegetal fuel (*kpèlèbè*, derived from the transformation of palm nuts into palm oil) or plastic bags to make fire, the burning of household wastes, and the use of

insecticides. A large part of the discussions also turned around household cleanliness, despite that this element was not specifically mentioned on the posters and the leaflet produced for the Air Sain campaign. Besides, the link between insalubrity and air pollution remains tenuous and mostly concerns unpleasant smell issues (of course, insalubrity is the source of many public health problems, but they are not directly related to air pollution). This emphasis on insalubrity as a source of air pollution also clearly stands out from our interviews. In the following excerpt, a participant unequivocally associated the participatory assembly with hygiene measures: “I think that we were called to attend this meeting for reasons of good hygiene, for us to adopt good practices in terms of cleanliness” (Cadjehoun 4).

Admittedly, interviewees mentioned other actors who should also be targeted by the public awareness campaign, such as canteen owners who produce a lot of wastes and wastewater, or taxi-moto drivers. That being said, they generally acknowledged that they had to change their own practices in a much stronger way than what was the case for Dakar. The following excerpt gives an idea of the general state of mind after the assembly hold at the Dantokpa market: “Since we had this meeting on air pollution, I did not completely stop using the mosquito (an insecticide), but I reduced the frequency of its use. It is already a change of behaviour. It is true that I hate uncleanliness, and I reinforced hygienic measures around me. All of this is a result of the meeting” (Dantokpa 1).

Thus, we can put forward that the approach that was favored in Benin allowed the engagement of actors whose behaviors produce air pollution, who are directly affected by it, and who have the possibility to partly modify their own practices in order to reduce their exposure. Contrary to what was observed in Dakar, the campaign does not seem to be an initiative that reinforces a certain “elite of participation.” Nevertheless, under this “grassroot” participation, more subtle power relationship issues appear. During the preparatory meeting observed in Cadjehoun, the head of the neighborhood, who chaired the reunion, mentioned that he “had fought” in order to have his neighborhood selected by the Air Sain project, in a context where organizers plan to distribute gas ovens to selected households for free at the end of the campaign. Moreover, although the recruitment of participants for the participatory assemblies was officially under the charge of the women identified as leaders in each of the selected neighborhoods, heads of neighborhood stepped in to convince people to participate. In Dantokpa, it seems that this was notably done on the base of past collaborations, as illustrated in the two following excerpts:

> When the (head of the neighbourhood) gives me a mission or asks me a service, I duly carry it out. This is certainly why I was invited to the meeting (Dantokpa 1).
>
> Another reason to explain my invitation is the trust and the conscientiousness that I am capable of when I carry out the missions that the head of the neighbourhood entrust me with (Dantokpa 4).

Furthermore, it seems that the head of the neighborhood in Dantokpa exerted a certain pressure over the participants to make sure they attend the meeting, as

underlined in the following excerpt "I was opposed to the idea of using constraint in order to mobilize women for the meetings. The head of the neighbourhood was using this threat. I rather believe that participation must be voluntary and free" (Dantokpa 2). These elements show the difficulty to completely evacuate power relationships when it comes to selecting and recruiting attendees for participatory initiatives. As we will see in the following section, power relationships persisted during the participatory activities we observed, despite the intention to hold initiatives that were as inclusive as possible.

Persistent Power Relationships

Since they gather actors coming from diverse horizons, participatory initiatives are prone to reproduce traditional hegemonic relations, thus impeding the emergence of new ways of thinking (Abelson et al. 2011) and the expression of more marginalized groups, such as women (Raibaud 2015). Following ecosystemic approaches to health and its principle of gender equity, the participatory initiatives we observed in Senegal and Benin were both characterized by the presence of a majority of women attendees. Nevertheless, we noticed the persistence of traditional power relationships during these activities, in both countries. Hence, in all of the meetings we observed, men with a high social status took more room in the discussions than women, despite the fact they were less numerous.

In Dakar, it is not trivial to notice that during the two public awareness meetings, four men out of a total of six men attendees sat in front of the room, while women "naturally" took place behind. This configuration favored dyadic exchanges between the presenter, also in front of the room, and some men attendees who had private conversations with her at several occasions. These situations notably happened in relation with the use of incense, a delicate matter since it is associated with women's seduction practices; besides, some joking comments were made on the fact that the woman facilitator was still unmarried. These interludes, which excluded the other participants, each time gave rise to a hubbub and diverted the attention of the audience. It is also worth mentioning the propensity of participants with a high social status – heads of neighborhood or imams – to speak louder and for longer periods of time than the rest of the attendees, sometimes with an authoritative voice and often standing up while speaking. Admittedly, this situation did not totally impede the expression of women as several of them appeared very at ease to speak up; however, it created an imbalance between the number of women attendees at the meetings and the scope of their voice.

This dominating place took by men in assemblies mostly composed of women was also observed at the meeting of the Dantokpa market, in Benin, where the head of the neighborhood took the floor for long periods of time, at several occasions, many times in French and in a refined language. Some of his remarks could be deemed as paternalistic, for instance, when he stressed that the country was a patriarchal society and asked what was the place of men in the campaign, asserting that "no woman had confronted his man" on air pollution matters. It is true that using

wood fire to cook fish or chicken, for instance, is deeply rooted in tradition. Changing this practice necessitates to heighten the whole family awareness of the problems that it may cause. Otherwise, a blunt change of practices will likely generate strong resistance in the household. As it was the case in Dakar, some women did speak, but overall the head of the neighborhood was a dominating presence.

When asked in the interviews if they believed that participants were able to express themselves as they wished, respondents (both in Dakar and in Cotonou) noted that there was not enough time for most people to express themselves and that, in general, those who spoke were those familiar with public speaking. Respondents expressed global satisfaction with the facilitators at the meetings.

Experts' Discourses and Changes of Practices

Surprisingly, resistance to change was rarely mentioned by participants and interviewees from both countries. If a few people did underline that some harmful practices were rooted in ancestral traditions and that, consequently, change had to be progressive, the majority of the interviewees asserted, on the contrary, that they had already modified their behavior:

> From then on, I forbad the use of plastic bags in fire as well as the use of vegetal fuel (kpèlèbè). Wastewater is filtered to remove its organic components – pasta, vegetables and so on. Household wastes are not exposed in an untidy heap anymore: they are put in bags and dropped in a specific spot where they will be collected. (Cadjehoun 1)
>
> From now on, I buy my gas. I reinforce cleanliness in my household and in the toilets. When I have to, I light the fire before starting to cook. I don't use coal and plastic bags anymore, when I leave my house I spray my bedroom so it can be in good condition when I come back in the evening. I don't rush at these necessities anymore. (Dantokpa 11)

Some changes of practices associated with the use of insecticides and incense can be done quite easily: one can simply wait outside the room by the time these products are burning or are settling down, in the case of spray insecticides. On the opposite, changes of practices associated with "clean" fuel are far more complex, for they imply more costly alternatives such as gas ovens. And yet, participants at the meetings rarely mentioned the costs increase associated with these changes, and only a few persons brought up this issue during the interviews. Most interviewees in Benin declared having changed their practices to some extent. Such a finding could be explained as a desirability bias to please the organizers – or not to displease them – by presenting views that correspond to what was taught during the meetings. But another as likely explanation is the deep trust toward experts' discourse that filtered out of the interviews. In Senegal but also in Benin, many interviewees mentioned the quality of the information given by experts during the meeting, and the fact that they trust this information. In both countries, "experts" were prominent during the activities, stepping in on many occasions to answer a question or correct a false information or perception. Interestingly, findings from the interviews clearly show

that the confidence toward experts is partly attributable to the fact that they are not tied to the "political" universe, broadly taken: "At first, I thought this was a political thing, but I have been pleasantly surprised to see that is was a health affair, which motivated me more" (Dantokpa 10). The clear "nonpolitical" positioning of Air Sain could be construed as a relevant strategy to fight the cynicism related to public participation.

This acknowledgment – if not deference – toward the experts' discourse tends to limit, in return, the emergence of "lay knowledge" that would come from citizens' experiences and perceptions. This could potentially explain why resistance to changes of practices that could be considered as "good" notwithstanding their consequences on health – fire to cook fish or meat and incense to seduce – is seldom mentioned. In this perspective, the "solutions" presented to fight air pollution are mainly imposed by experts.

Preconceived Solutions

Another challenge associated with participatory initiatives relates to the concrete implementation of the solutions emerging from these endeavors (Bherer 2011; Blondiaux and Fourniau 2011; Clarke 2013). Like we just mentioned, in the two cases studied, solutions aiming at fighting air pollution were thought beforehand by Air Sain organizers, a budget having been planned from the outset in order to buy and distribute gas ovens. Admittedly, participants were involved in the discussions aiming at producing the leaflet in Cotonou, proposing, for instance, to add or change some images in order to make it more meaningful. In Dakar, participants suggested to produce a leaflet in the local language, a proposition that was welcomed by the organizers. But overall, respect, confidence, and deference toward experts' discourse did not favor the emergence of lay or citizen knowledge. The challenges posed by the concrete implementation of the identified solutions remained seldom touched on. Rather, participants proposed to organize more meetings with other participants but with the presence of experts. In this context, Air Sain activities were closer to communication models of persuasion and knowledge transmission rather than to genuine participatory models. These models would be more in phase with the traditional African palaver model, characterized by small assemblies where deliberation occurs through an informal setting, "transcending status and centered on content" (Lanmafankpotin 2015, our translation).

And yet, the type of engagement privileged by the Air Sain program is not vain. We can think that the form of citizen participation that took place through this project had a significant political meaning for participants. Indeed, McComas (2010) distinguishes three motives that justify citizen engagement in participatory initiatives (the author proposes these motives in relation to citizen engagement in crises management, but the concept can be applied to other contexts.). First, the motive can be normative, which means that it is based on the profound belief that individuals have a fundamental right to be heard in democratic regime. Second, the motive can be instrumental when it is thought that participation will likely favor a better

acceptance of the decisions that have been debated and a greater confidence toward authorities. Finally, the motive for citizen engagement can be substantive, which is the case in situations where the benefits of such engagement are considered to go beyond the issue at stake. In these situations, participation is seen as a means to generate social capital, to lead to greater political efficiency and increased capacities for a community. Air Sain activities could be associated with the last two perspectives. First, taking into account the persuasion model of communication that was favored, the meetings created better conditions for uptake notably thanks to direct interactions with experts. Second, the Air Sain campaign also gave rise to participants' empowerment; this would be in phase with the participatory approach favored by international organizations, which nowadays call for "the valorisation of personal experience in participation to development projects" (Parizet 2016, p. 84, our translation). Beyond the knowledge acquired through public awareness activities, participants can get a feeling of empowerment associated with the ability to heighten third-party awareness on air pollution. As such, Air Sain has the potential to generate "social effects" (Lavigne Delville 2011) among its participants. The following excerpts speak to this idea:

> Whenever I had the chance to exchange with people and I had the occasion to share learning from the meeting with them, I did it, and I encouraged these individuals to share these learning as much as they can. (Cadjehoun 2)
>
> The meeting will be instrumental in the success of the future public awareness campaign I'll put forward, since I now possess many assets and scientific proofs concerning pollution ravages. (Dakar 1)
>
> I even apprehend people that I meet for the first time, go out of a taxi and commit gestures that are the opposite of what we learnt at the meeting. I hail them directly and draw their attention on the unfortunate consequences that could follow their behaviour. (Dantokpa 4)

This is consistent with an ecohealth perspective, according to which the emphasis must be put on knowledge-to-action, notably with regard to scientific knowledge. This bridge between experts and citizens is viewed as a way to insure projects' sustainability and better social cohesion. That being said and as stressed earlier, a strict transmission model tends to impede the emergence of lay knowledge that would allow the identification of more socially acceptable, and thus more sustainable, solutions. The recourse to incense, for example, remains strongly rooted in common habits, and one can question the sustainability of a solution promoting the reduction of its use.

Conclusion

In sum, by anchoring the challenges identified in the literature into field observations and interviews, we were able to bring support and nuances to the need to address various challenges when participatory initiatives are fostered. As we have seen, the initiatives presented may have contributed to widen the gap between informed citizens and those not involved in discussions related to collective issues. This was

more so in Dakar where those invited to the meetings were community leaders that can be think of as an "elite of participation." The situation was different in Benin, even though our interviews have revealed that several participants to the Dantokpa meeting were recruited based on their pre-existing (positive) relationship with the community leader. We have also underlined how difficult it is to ignore the "usual" power relations during meetings in which, in principle, participants have an equal voice. We have seen that men, and notably those with an acknowledged social status, had a tendency to speak more often and for a longer time than women despite their minority status in the meeting. Our analysis has also revealed the central role played by experts in the conversations; even though the information they brought was highly relevant and well received by participants, their knowledge dominated the meetings leaving very few room for lay knowledge. Finally, our analysis has highlighted the complexity of the concept of "co-construction" at the heart of participatory initiatives: we were led to conclude that the initiatives we observed were close to persuasive communication and knowledge transfer models focusing on awareness and offering prepackage solutions.

This global conclusion questions the participatory nature of the observed meetings, the selected format leaving little room for the emergence of a dialogue between participants. Yet, dialogue is a foundation of communication for social change: "Communication for social change (. . .) is defined as a process of public and private dialogue through which people define who they are, what they want and how they can get it. Social change is defined as change in people's lives as they themselves define such change" (Gray-Felder and Dean 1999, p. 8. On dialogue, see also Cohen and Fung 2004, De Bussy 2010, Delli-Carpini et al. 2004, Fishkin 2009, Kent and Taylor 2002, and Sintomer 2011). In the meetings we observed, leaving more room for dialogue could have permitted the emergence of lay knowledge regarding some sources of pollutants and, more importantly maybe, could have exposed the challenges posed by the desired changes in perceptions and practices.

What has been said above does not question the relevance of the Air Sain program. As studies in communication have shown (Figueroa et al. 2002; Mertens et al. 2005; Kirk 2004), peer pressure and influence are major determinants for behavior change. Therefore, dialogue and interinfluence are crucial for these changes to go beyond individual behaviors to embrace collective practices: "For social change, a model of communication is required that is cyclical, relational and leads to an outcome of mutual change rather than one-sided, individual change" (Figueroa et al. 2002, p. iii). Indeed, even if part of the fight against air pollution can be conducted within households, it requires collective awareness and behavior changes at the society level. In this regard, our results clearly show that participants have learned and that many of them feel better equipped to convince their peers of the need to change some of their practices. Hence, one can think that dialogue and interinfluence will happen on the long run within participants' social networks. This is bound to contribute to behavior changes that could help fight air pollution and hence diminish its impact on people's health in the two cities.

Cross-References

► Empowerment as Development: An Outline of a Concept
► Multidimensional Model for Change: Combining Participatory and Strategic Communication
► Participatory and Community Mapping
► Participatory Communication and Community Development
► Participatory Communication, Community and People

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