Chapter 9

From consultation to collaboration: a comparative analysis of public participation in low-income communities

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Abstract

Addressing complex societal challenges, or "wicked problems", demands innovative approaches that embrace the messy and complex nature of decision-making processes. There is an increasing emphasis on including all stakeholders' diverse interests, values, and preferences in these problem-solving processes, especially those of the voiceless within Global South low-income communities. This chapter explores the shift in public participation from traditional consultation models to more collaborative approaches in addressing "wicked problems" within low-income communities.[1] The study employs a

1 Editors' note: This chapter shares insights with Chapter 6 above.

comparative analysis of two case studies using a SWOT analysis, intending to compare the strengths, weaknesses, opportunities, and threats posed by varying levels of public participation. The first case primarily involves consultation with the community about an intervention, while the second focuses on collaboration through co-creating the intervention with the community. By illuminating the dynamics between traditional public participation consultation processes and collaborative, community-driven approaches, this research contributes insights to the discourse on effective decision-making strategies and empowering communities through participatory engagement.

Keywords: collaboration, consultation, low-income communities, public participation, South Africa

1. Introduction

The urban realm faces many "wicked problems". The complexity of these quandaries precludes the possibility of finding definitive solutions to their harmful impacts, creating a cyclical problem-solving cycle where resolving one aspect may induce new challenges (Rittel & Webber, 1973). Addressing these problems requires embracing the messy and complex nature of decision-making processes (Stahl & Cimorelli, 2013), including diverse stakeholders, conflicting values and unclear boundaries (Goldsmith, 1969). Unconventional thinking and diverse perspectives must be incorporated in a stakeholder-inclusive environment of continuous re-examination and adaptation (Stahl & Cimorellim 2013; Goldsmith, 1969; Rittel & Webber, 1973).

Stakeholders potentially involved in these problem-solving processes include the state, professionals, NGOs and affected communities (Watson, 2014b; Jacobs, 2022). Pluralism, i.e., diverse sociocultural contexts amongst stakeholders, introduces complexities, often manifesting zero-sum games because of conflicting interests, values and preferences (Culwick Fatti & Patel, 2023; Rittel & Webber, 1973). The perceptions of the state, professionals and NGOs are shaped by polity and

political agendas (Davison et al., 2016), and inter-societal perceptions are influenced by cultural views and local reality (Watson, 2003; Culwick Fatti & Patel, 2023). Furthermore, power dynamics amongst stakeholders play a crucial role in directing the process (Webler et al., 2001) and may affect rationality (Flyvbjerg, 1998).

To understand the divergence amongst stakeholders and to build consensus on appropriate solutions for "wicked problems" within local contexts, public participation is employed globally (Brownill, 2010). The idea is to promote inputs from all segments of society, but *how* to proceed remains controversial (Webler et al., 2001). Questions about the extent of stakeholders' involvement and the distribution of power are central to choosing the procedures for public participation (Constantinescu et al., 2020).

The set-up of a public participation process determines the degree to which the respective stakeholders influence the eventual decision on the appropriate solution. The strategy may be to inform, consult, placate or bestow agency to the stakeholders (Pacione, 2009). These strategies would produce highly divergent outcomes - from primarily reflecting one stakeholder's interests, values and preferences to integrating different perspectives and ultimately producing an outcome with which all may be content (Webler et al., 2001).

For a public participation process to meaningfully address societal needs, it must accommodate diverging local resources and conditions (Watson, 2013). This is especially true in the context of the Global South, where inequality prevails. Within a single urban area, access to resources, methods of information distribution, literacy levels and degrees of formality vary significantly (Jacobs, 2022). Implementing stakeholder-inclusive processes will not only accommodate the challenges of pluralism but may also empower disadvantaged, low-income communities to gain agency over the "wicked problems" that they face (Watson, 2014b; Cornelius et al., 2017).

Many challenges within low-income communities of the Global South stem from broader social, economic and

environmental events shaped by the socioeconomic and socio-political environment (Jacobs, 2022). These communities are often situated on the urban periphery, far removed from economic opportunities, and they live in varied conditions of informality and illegality (De Satgé & Watson, 2018). Therefore, they have limited capability to shape or influence public participation processes.

To understand the efficacy of participation within these low-income communities, this chapter employs a SWOT (strengths, weaknesses, opportunities, and threats) analysis of the public participation processes employed in two case studies addressing the "wicked problems" of poor air quality in low-income communities. One follows the more traditional consultation approach, and the other employs a more collaborative approach. Observe that although both these projects apply interventions to improve air quality, this study focuses solely on comparing the varying levels of public participation and community involvement in developing and implementing solutions. Therefore, this chapter aims not to provide recommendations for air quality improvement or conclusions on the various types of air quality solutions applied in the two case studies. Rather, the focus is on comparing the varying levels of involvement in interventions within two low-income communities in developing and designing solutions for "wicked problems", e.g. poor air quality[2].

Air quality presents a quintessential example of a "wicked problem". While there are norms and standards to regulate air quality, the "wickedness" lies in its complex and multifaceted nature; despite scientific understanding of the problem and efforts to influence policy, resource availability, competing priorities, and political agendas hinder effective solutions (Andres et al., 2023). Poor air quality is one of the major threats to human health, resulting in over 4 million premature deaths per year, cardiovascular diseases and reduced lung capacity (Badach e al., 2023; Sefair et al, 2019).

2 Editors' note: The reader may also want to compare this chapter with Chapters 3 and 4 as to air quality.

Given South Africa's poor air quality (DEA, 2024), its ranking as the most unequal country in the world (World Bank, 2024) and its commitment to fair and inclusive public participation (Spatial Planning and Land Use Management Act No. 16 of 2013 – RSA, 2013), it is an ideal location to explore the efficacy of traditional consultation models and collaborative approaches in addressing "wicked problems" within low-income communities.

2. Public participation: a brief history of the approach

The origins of public participation, also known as citizen participation or citizen involvement (Mize, 1972), may be traced back as far as ancient Greece, where the idea of involving the public in political decision-making established the roots to implement this concept as a democratic ideal (Mumford, 1961). Hereafter, public participation was further promoted throughout history by social movements (Klandermans & Oegema, 1987), where activists advocating for causes including human rights, women's voting rights and other marginalising matters have played a critical role in promoting public participation by challenging ruling power structures and pushing for improved representation and inclusivity. Phifer (1990) explains that a rising focus on community development in the early 20th century, especially in the United States of America (USA) during the 1930s and 1940s, furthered public participation on the grassroots level as a tool to identify local needs and to address socioeconomic inequalities in urban and rural communities.

It was not until the post-Second World War era in the mid-1960s, however, that public participation was institutionalised, with a notable precursor being the establishment of the "Great Society's Programmes" under the leadership of then US president Lyndon Johnson (Zelizer, 2015; Maphazi et al., 2013). Tigan (2005) elucidates that these programmes addressed matters relating to civil rights, education, medical care, urban problems, rural poverty, and transportation through citizen participation. Public

participation subsequently emerged as a response to the failures of traditional governance and conventional planning approaches to address these "wicked problems". To this end, the fields of Sociology and Urban Planning contributed significantly to the evolution of public participation, especially in the post-Second World War era (Taylor, 1998), when rapid urbanisation and modernisation resulted in spatial inequalities and increased social marginalisation. Early pioneers such as Patrick Geddes and Jane Addams (Scott & Bromley, 2013; Geddes, 1915) were succeeded by likeminded activists, including, inter alia, Jane Jacobs and Paul Davidoff (Pacchi, 2018), advocating for citizen involvement in shaping the built environment.

Throughout the 1960s and 1970s, public participation gained increasing prominence in urban planning, specifically to address the failures of top-down planning models characterised by technocratic decision-making and limited community involvement (Pacchi, 2018). Driven by the idea that "planning is political" (Taylor, 1998; Fagence, 2014), public participation developed throughout the 1980s and 1990s as a policy and legislative requirement in multi-disciplinary fields to address the need to involve citizens in decision-making and local governance (Lane, 2005). Although these origins of public participation have laid the foundation for citizen participation, Taylor (1998) contends that public participation was primarily regarded as *consultation* with the public rather than the public actively *participating* in decision-making.

3. The multi-layered nature of participation

The notion that public participation comprised mere *"consultation"* was disputed, perhaps most notably by Sherry Arnstein in 1969. In her seminal work *A Ladder of Citizen Participation* (Arnstein, 1969) Arnstein conceptualised participation on a spectrum ranging from *non-participation* to *citizen control*, with varying degrees of citizen involvement and power distribution in between. Figure 21 illustrates this ladder comprising eight rungs, each representing a different degree of participation and citizen involvement, corresponding with the extent of citizens' power in determining the end product of a

public participation process. The ladder is a simplification of the real-life multilayered nature and complexities of participation, but it succeeds in exemplifying the significant gradations of participation, emphasising that not all participation is empowering.

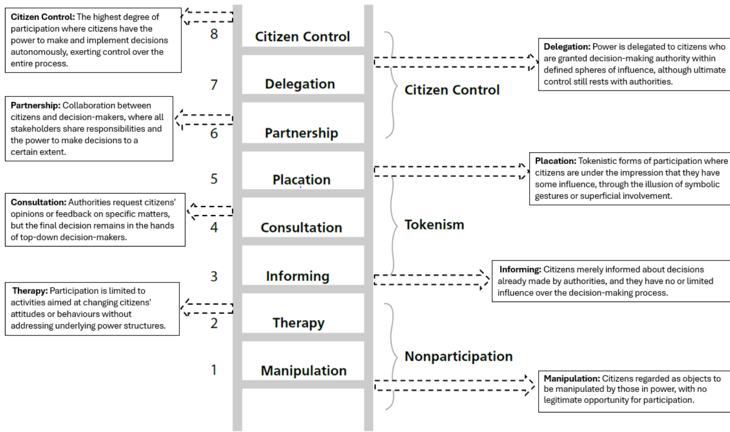

Figure 21: Degrees of citizen participation according to Arnstein's ladder. Source: Adapted from Arnstein (1969)

In essence, Arnstein's ladder illustrated the multilayered nature of public participation and provided a critical perspective on the effectiveness and legitimacy of various public participation processes. It exposed the question of how much or to what degree the public should be involved in decision-making processes (Taylor, 1998), and cautioned against tokenism and spectator politics, where public participation is regarded as a cumbersome ritual and obligatory legal requirement, merely serving to legitimise existing power structures. However, the model has limitations and has been criticised for assuming a linear and hierarchical form, failing to stress the complexities of the process and continuous feedback (Collins & Ison, 2006). Further criticism referred to the seeming elimination of the role of planners and their technical expertise based on the assumption that citizen power will result in good planning decisions (Collins & Ison, 2006; Choguill, 1996). This argument

also applies to other fields of technical expertise addressing developmental challenges and "wicked problems" (e.g. poor air quality) experienced in especially marginalised, low-income communities.

Following Arnstein's ladder of participation, several scholars attempted to develop further and refine the multiple layers of participation. Mensah et al. (2017) explain that Kingston et al. (2000) developed a six-step ladder of participation, while Nobre (1999) designed a community participation ruler with four levels of participation, including to inform, to consult, to discuss, and to share. Davidson's (1998) wheel of participation, on the other hand, conceptualised public participation in a circular spectrum with four main pillars: inform, consult, participate and empower. A myriad of similar attempts to elucidate the multilayered nature of participation followed, with numerous models displaying some commonalities and nuanced adaptations of Arnstein's original eight-step ladder. These include, amongst others, the Ladder of Children's Participation, the Ladder of Empowerment, the Typology of Youth Participation and Empowerment Pyramid, and the Youth Engagement Continuum (IAP2, 2007).

Based on decades of research and practice in the field of public participation, the International Association of Public Participation (IAP2) created a Spectrum of Public Participation, sharing similarities with these preceding models. This Spectrum categorises participation into five modes: inform, consult, involve, collaborate, and empower (IAP2, 2007). It provides a multilayered and structured approach for authorities and practitioners to design and implement public participation processes, emphasising the value of engaging citizens at different stages of decision-making. The IAP2 (2007) does, however, caution that the Spectrum portrays a primarily positive view of public participation at its most constructive, denoting that it does not reflect ineffective or deficient participation practices, e.g. "empty promises" to communities and the resultant consequences. Nabatchi (2012) modified the IAP2 Spectrum in 2012 to incorporate the various modes of communication accompanying each form of participation,

i.e., one-way, two-way, and deliberative. Figure 22 displays this modified Spectrum of Public Participation and serves as the main point of departure for the comparative analysis in this chapter, specifically referring to the differences between the level of shared decision-making in the modes of *consult* and *collaborate.*

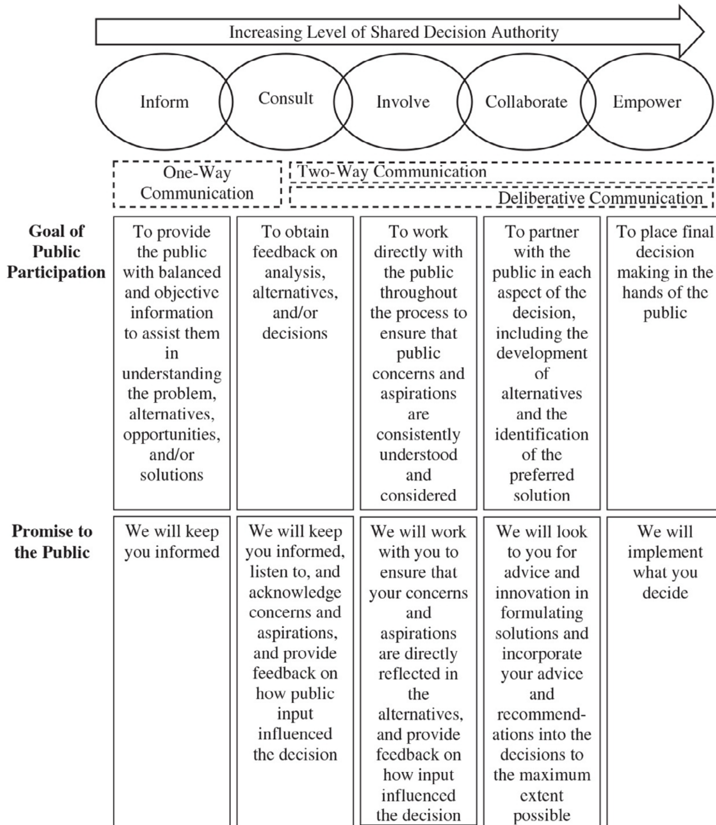

Figure 22: The modified version of the IAP2 Spectrum of Public Participation. Source: Nabatchi (2012)

As illustrated by Figure 22, it is evident that the propensity for deliberative communication increases with augmented citizen involvement, collaboration, and empowerment. This calls for

enhanced participatory engagement and, ultimately, innovative participatory methods to facilitate this process.

4. Contextualising participatory engagement

Given the preceding discussion, it is imperative to note that there is a slight but distinct difference between *public participation* and *participatory planning* or *participatory engagement*. Public participation and participatory planning are related but differ in scope, focus, and purpose, as public participation generally refers to the overall process of consulting individuals, groups, or communities in the decision-making processes that affect them (Barton, 2002). Several scholars contend that, although public participation solicits feedback from the public, it is usually implemented in a more informative or consultative manner (Abas et al., 2023), signalling its association with the lower rungs of Arnstein's ladder or the first two modes (inform and consult) of the IAP2 Spectrum.

Participatory planning, conversely, refers explicitly to a departure from merely informing or consulting communities before implementing preconceived solutions, but rather encompasses the notion that each participant, especially in marginalised communities, becomes a significant contributor to the decision-making process (Mensah et al., 2017). It transcends a multitude of related disciplines, including Urban Planning, Sociology, Political Science, Environmental Sciences, Economics, etc., and involves collaboration between a diverse range of stakeholders, including residents, community organisations, government authorities, and other relevant actors (Clark & Percy-Smith, 2006; Dalal-Clayton & Dent, 1993; Jami & Walsh, 2017). The broader term *"participatory engagement"* exhibits this diverse nature of participatory planning, and will be used in this chapter to accurately reflect the multi-disciplinary disposition of the selected case studies.

Participatory engagement, at its core, aims to foster the co-production of solutions through a collaborative process (Watson, 2014a), signifying its correlation with the upper rungs of Arnstein's ladder and the latter modes (involve, collaborate

and empower) of the IAP2 Spectrum. Participatory engagement is not a linear process but rather dynamic and iterative, continuously evolving to enhance inclusivity and empowerment throughout various stages of the process. It stands as a cornerstone in contemporary approaches to facilitate decision-making in marginalised, low-income communities.

5. Legislative context of public participation in urban planning in South Africa

Urban planning is not the only discipline in which participatory engagement is perceived as necessary, as the involvement of communities in other developmental processes encapsulates a broad range of expertise and a diverse array of facets beyond the ambit of urban planning. However, it is perhaps one of the disciplines where participation, or its absence, substantially influences community quality of life. This raises the question of whether urban planners comprehend the necessity of due participatory engagement, prior to the preparation of their plans and designs, to improve the quality of life. It is nowhere more apparent than when observing the course of legislation, where urban planning is at the forefront. Here, a distinction is made between (i) forward or strategic planning and (ii) statutory planning, which facilitates land development applications. Statutory planning has been known in the past for permutations of Provincial Township Ordinances (most of which are repealed), the Black Communities Development Act (4 of 1984) (repealed) (RSA, 1984), the Less Formal Township Establishment Act (113 of 1991) (repealed) (RSA, 1991), the Removal of Restrictions Act (84 of 1967) (repealed) (RSA, 1967a) and zonings and building controls in Town Planning Schemes (since 2015 replaced with Land Use Schemes) (Viviers et al., 2015). During this time, formal and legal notices, employing various media platforms to "inform" the public of land development applications, occurred as the only means of public participation. These "notifications" occurred (i) *after* the planning and design phase to implement preconceived solutions and (ii) only at a stage when relief was therefore sought. Notices primarily served the purpose of inviting comments (or objections) and involved sound

processes to address objections, if lodged through Township Board hearings. Lacking here, it seems, is the determination to endeavour a participatory engagement process, *prior to* the application phase.

An inclusionary tactic was required to be prudent during strategic planning for the preparation of Structure Plans (in terms of the Physical Planning Act, 88 of 1967 (repealed) (RSA, 1967b) which, because of its complexity and far-reaching impact, necessitated the involvement of several city actors, governmental departments, parastatals and the private sector (Viviers et al., 2015). Once concluded and following its final preparation, exuberant community engagement was often endeavoured *after* the planning phase. While this offered some opportunities to comment on a prepared and finalised Structure Plan (and perhaps influenced its outcomes), our perception is that some urban planners did not perceive this as a means to obtain indigenous knowledge prior to planning, aiming to inform and empower communities to engage with insight. In fact, because of the political dispensation at the time, most communities were excluded from any form of participation. Dismantling this dispensation after 1994 would have required three important and decisive sets of legislation in the urban planning cadre before changes were noticeable. The Development Facilitation Act, 67 of 1995 (repealed) (RSA, 1995), is perceived as the first impetus that required, in its Chapter 1 principles (compulsory to all municipalities). It provided for (i) appropriate levels, measures and methods in which communities should be consulted and, (ii) for the first time, allowing for a Planning Tribunal composed not only of municipal officials but incorporating the community members. The latter tribunal and Act were subsequently found unconstitutional by the Constitutional Court (Berrisford, 2011), resulting in the replacement of the Act by the current ruling Spatial Planning and Land Use Management Act (16 of 2013) (SPLUMA)[3], which commenced on 1 July 2015 (RSA, 2013).

3 Editors' note: The Act is also discussed in Section 4.2 of Chapter 11.

Promulgation of the SPLUMA was, nonetheless, preceded by the ruling Local Government: Municipal Systems Act (32 of 2000) (MSA) (RSA, 2000), discarding Structure Plans and requiring a municipality to prepare an Integrated Development Plan (IDP), which must include (as a compulsory sector plan), a future municipal Spatial Development Framework (SDF). The latter is perceived as a strategic planning instrument to guide future spatial planning and development of a municipality for the next 20 years. Although the MSA is not specific regarding the contents of an SDF (now outlined in the SPLUMA) it stipulated, for the first time in planning legislation in South Africa, the need for "community participation" (in Section 16 of the Act) and affirmed that municipalities "must develop a system of participatory governance" that will "encourage, and create conditions for, the local community to participate in the affairs of the municipality" (RSA, 2000). As a result, most municipalities gave effect to this legislation by inaugurating "IDP Forums" representative of the community, several city actors, governmental departments, parastatals, and the private sector, for participation in strategic planning endeavours of the municipality in formulating its IDP (and thereby also its SDF). Apparent here, it seems, is the determination to endeavour participatory engagement of communities *prior to* and *during* the urban planning and design phase of strategic planning. The principle of "substantial public engagement" was later also duly endorsed in the SPLUMA for when a municipality endeavours strategic planning, i.e. preparation of an SDF (RSA, 2013).

The statutory course had an unfortunate and less desirable outcome. In offering the objectives of the SPLUMA, the development of an effective, uniform, and comprehensive system, promoting social and economic inclusion (Laubscher et al., 2016) was determined. While the ruling SPLUMA (i) pertinently outlined unified land development application procedures for all municipalities, inter alia for participation during the amendment of a Land Use Scheme (LUS), and (ii) affirming that future regulations may well be prepared, delineating the process for "public participation" during the preparation of an LUS, it is neither specific in requiring

participatory engagement prior to the commencement of planning endeavours, nor was any relevant regulations for prior engagement since formulated. It does positively determine that these procedures may later be finalised in national regulations. It seems that the determination to endeavour *participatory engagement* during the urban planning and design phases is evident. The principle of "substantial public engagement" was also later duly endorsed in the SPLUMA when a municipality endeavours strategic planning, i.e. preparation of an SDF. Evidently, this presents an opportunity to foster regulations, when prepared, regarding procedures for public participation, obliging participatory engagement, much earlier and before procedures seeking a relief, or to adopt preconceived solutions prior to appropriate consultation with stakeholders.

Ultimately, promulgating the Development Facilitation Act in 1995 triggered the preparation of municipal bylaws by all newly demarcated municipalities (as determined by the Municipal Demarcation Act, 27 of 1989) (RSA, 1998) relating to land use management and planning, inter alia, laying down procedures for participation when statutory planning is endeavoured. Regrettably, bylaws seem to adopt familiar archaic tactics by starving participation prospects to mere notification (informing the public) *after* the design and planning phase, and was an indisputable opportunity forfeited to improve participatory engagement on higher nuances than mere notification and seeking approval for preconceived solutions. As is apparent from the legislative discourse in urban planning, participation seems, for the most part, to be an effort to "inform" communities of land development applications merely to obtain "buy-in" on predetermined solutions on time. These historic non-participatory engagement processes prior to development projects, in our experience, resulted in communities' non-acceptance of the project, non-utilisation of the outcomes or, in extreme instances, its destruction. The question can be put why municipalities and a limited number of urban planners are increasingly concerning themselves with due participatory engagement from the onset, during planning and attempting reliefs for developments. The answer is embedded

in their own empirical and experiential learning, showing that negating participatory engagement before planning processes may cause severe breakdowns in the development process. Here, conscious decisions by authorities and urban planners seem apparent in engaging communities beyond legislative requirements, giving effect to appropriate and inclusive participatory engagement.

6. Method

To explore the potential efficacy of different public participation approaches, here consultation and collaboration, in addressing "wicked problems" within low-income communities, this study employs a SWOT (strengths, weaknesses, opportunities, threats) analysis of two case studies – *Basa Magogo* and the *Semi-continuous Coal Stove* project. Both these projects intervened in low-income communities to address the "wicked problem" of poor air quality.

The process of participation for both cases was captured in project reports[4] (Nova Institute NPC and NWU, 2022; Van Niekerk, 2017). These reports were inductively analysed on Atlas.ti to explore the potential efficacy of traditional consultation models and collaborative approaches in addressing "wicked problems" within low-income communities. The analysis utilised the SWOT (strengths, weaknesses, opportunities, threats) framework (Figure 23) for coding – a process where "groups of words" elucidating the potential efficacy of the participative approach are labelled and categorised according to the framework (Birks & Mills, 2015; MacCallum et al., 2019). The codes created during the inductive analysis are presented in Figures 24 and 25.

4 It is important to note that *Basa Magogo* is a much longer-running project and has already been implemented at scale, while the Semi-continuous Coal Stove project is a more recent endeavour. The two projects were, however, compared at similar project stages Nova Institute NPC and NWU 2022. NWU: Zamdela Stove Project Pre- and Post-implementation Piqola for the Zamdela Stove Project. [Unpublished report]; Van Niekerk, A. 2017. *The Basa Magogo story*. [Unpublished report]..

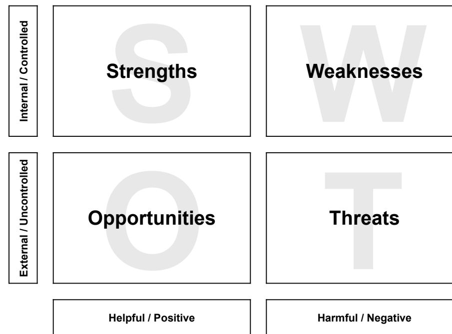

Figure 23: The SWOT framework. Source: Composed from Sarsby (2012)

7. Consultation during the Semi-continuous Coal Stove project

The Semi-continuous Coal Stove project aimed to find a practical and user-friendly solution to reduce harmful emissions from domestic coal use on the South African Highveld. The stove has significantly lower emission factors than current domestic coal stoves. The North-West University (NWU) high-efficiency low-emissions stove testing has been ongoing since 2015. The team consisted of chemical engineers, atmospheric scientists, and social scientists. It yielded positive results in the laboratory but the team wanted to understand how it is used and experienced in a real-world scenario. In 2022, a pilot study was conducted where the stove was installed in six low-income households in Zamdela, Sasolburg.

Consultation with the participants aimed to evaluate the feasibility of the stoves from an end user perspective, focusing on satisfaction and the impact on energy usage and quality of life. A systematic approach was employed, firstly compiling a list of potential impacts of the intervention, and secondly analysing the list to select relevant survey questions. The questions included semi-structured questions for gathering

narrative responses on the community's quality of life, numeric scale (0–10) satisfaction questions, and Likert scale questions about the household perceptions and experience with the stove. This methodological toolbox, Piqola (Particular Impact of Quality of Life Assessment),[5] was developed with a theoretical framework based on research in South America (Murray & Pauw, 2022). It therefore incorporates the context of the Global South. Piqola was furthermore informed by the researchers' previous experience during fieldwork in South African low-income communities and updated as used to ensure continuous improvement.

The households were selected during a community gathering, and their general quality of life and energy usage patterns were assessed via interviews. The stoves were installed, and the indoor and ambient air quality were measured for three months. Thereafter, the households' experience with the stoves was assessed via interviews.

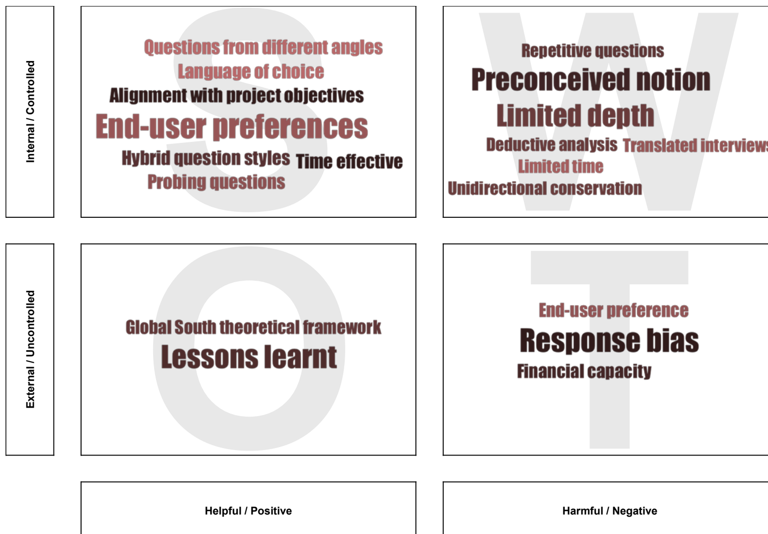

Figure 24: Word clouds indicating the code frequency developed through the SWOT analysis of

5 Editors' note: Intensively discussed in Chapter 12.

consultation during the Semi-continuous Coal Stove project.

7.1 Strengths

The preferences of the end user and real-world implementation are considered on a small scale before a scaled roll-out. The end user was provided with the opportunity to voice their level of satisfaction with the semi-continuous coal stove and how it impacted their broader energy usage and quality of life.

The questions were asked in a probing rather than a leading manner and focused on aspects relevant to understanding the intervention's impact and ensuring alignment with the project's objectives. They were asked from different angles to achieve a more in-depth understanding and to capture information that would otherwise have been missed. The interview entailed semi-structured, satisfaction, and Likert-style questions, contributing to a more holistic understanding of community needs, preferences, and concerns. Furthermore, it provided the opportunity to compare pre- and post-intervention scenarios. Interviews were, furthermore, conducted in the language of choice for the interviewees. Participants speak more freely and elaboratively in a language that they are comfortable in. This may ensure more comprehensive responses.

The project was quick and provided immediate results. The entire project was completed in less than a year. Households were recruited for participation in March and April 2022; surveys were conducted in May 2022; the stoves were installed in August 2022; and the post-intervention surveys were conducted in August 2022.

7.2 Weaknesses

Linguistic nuances may be lost in translation, leading to misinterpretation of responses. Additionally, translators' understanding of context may impact the quality of translations. The results were analysed using a deductive method. Although deductive analysis provides structure and efficiency, there is a risk of overlooking nuances in the data. This also creates

space for the researcher's interpretation of the results without iterative inputs and clarifications from the community.

7.3 Opportunities

The toolbox (Piqola) for consultation with the community, being developed within a Global South context, reflects a deep understanding of the unique Global South context and its continuous development and tailors it to the context of South African low-income settlements, ensuring effectiveness and relevance. Piqola may therefore offer insights into best practices for consultation within low-income South African contexts, ultimately contributing to the all-inclusive project's success and generating meaningful insights into quality-of-life impacts.

7.4 Threats

The satisfaction questions employed a numeric scale. Participants may 1) interpret the scale differently, 2) provide socially desirable responses, or 3) tend to select neutral responses. Different cultures may also interpret the scale's endpoints differently, and researchers may misinterpret responses from participants of various cultural backgrounds. Contextual factors, e.g. recent events, may also influence participant responses.

Previous projects were unsuccessful due to neglecting the end user preference (Nova Institute NPC and NWU, 2022). This suggests a potential disconnect between technical solutions and end users, posing a possible threat to consultation efforts. Therefore, it is imperative to recognise and actively address this challenge.

8. Collaboration during the *Basa Magogo* project

Basa Magogo co-created the intervention with the community. The *Basa Magogo* project started in 1998 as part of Sasol Synthetic Fuels' efforts to find solutions for the high levels of air pollution in eMbalenhle, a township near Secunda in Mpumalanga, South Africa. In the winter of 1998, five possible

technical solutions were evaluated for domestic air pollution in eMbalenhle: 1) new "smokeless" stoves; 2) insulation; 3) low-smoke fuels; 4) liquid petroleum gas (LPG); and 5) repairing the stove and chimney - plus two combinations of some of these, measured against a control group (Van Niekerk, 2024). Thus, eight groups of five households each were monitored, and seven used the installed technology.

The team consisted of a researcher with a background in Theology and Anthropology, a local co-ordinator who had recently completed his theological studies, a community leader and three fieldworkers from the community. During the testing of various technical solutions, a mechanical engineer and an academic researcher in Sociology were also involved.

The results were evaluated together with the residents, and the coal use and levels of pollution were measured (Van Niekerk, 2024). None of them complied with all the criteria. The research team was, however, under pressure to illustrate a concrete positive result within a short space of time. They were aware that several government departments were promoting the so-called Scottish method, or top-down ignition method, over the media and popular television programmes. This method was developed before 1955 by Dr Petrick of the then Fuel Research Council. The team did not find anybody who used it, and the mass marketing campaign seemingly had no impact at all (Van Niekerk, 2024).

The technique was demonstrated to three of the fieldworkers. It is quite simple: instead of starting the fire with paper and wood at the bottom of the *imbaula* (an old 20-litre paint tin with holes in the sides that is used as a stove in many South African low-income communities) and then adding coal on top, the paper and wood are placed on top of the coal, and the fire burns from the top downwards (Van Niekerk, 2024).

The three fieldworkers illustrated the technique to nine families in their homes. They all used it but were not impressed by it. The main complaint was that the coal did not ignite properly; they did not have enough paper and wood to enable the coal to ignite. One fieldworker, however, remarked that a

particular grandmother said that it worked for her. Investigating further, the team found that she added a few handfuls of coal on top of the wood. After she had demonstrated it to the team, the fieldworkers were convinced that it could work. The *Basa Magogo* method was named after this lady, Granny Nebelungu Mashinini. *Basa Magogo* means "light up, grandmother!" (Van Niekerk, 2017).

Figure 25: Word clouds indicating the code frequency developed during the SWOT analysis of collaboration during the Basa Magogo project.

8.1 Strengths

The goal to engage the end user in the search for a suitable solution signals a more collaborative approach, as the community, along with "experts", was involved in the process of finding solutions for the challenge of poor air quality. Engaging the end users and obtaining their input in finding solutions to complex challenges ultimately resulted in promoting a culture of responsibility and ownership amongst these households that may support the long-term effectiveness of the project.

The project followed a more open approach without preconceived ideas of what and how solutions should be provided. Nevertheless, the goal was to implement a balanced approach, where openness for alternative possibilities is retained but where the focus is still on finding a solution, thereby accommodating traditional and modern views. It is essential that cultural nuances are identified and recognised as part of the collaborative process, with the research team communicating well and being sensitive towards the "intensity of feelings" regarding specific issues. One such cultural nuance was that many residents emphasised that they wanted to use fire and not only electricity because they said that fire brings the family together. Another sentiment was that fire brought them in contact with the spirits of their ancestors. More recently, there has been a tendency for watching television to replace activities related to fire, and seemingly, fire is not so crucial anymore for keeping in contact with the ancestors.

Lastly, the project displayed cost-effectiveness and innovation as internal strengths.

8.2 Weaknesses

The *Basa Magogo* project and its current status quo were the result of years of close interaction, feedback and collaboration between researchers and residents of the communities involved, signalling the time-consuming nature of the collaborative approach, which may be perceived as a weakness of the process.

To maximise the constructivist nature of the collaborative approach, it is not only essential that the researchers involved have the necessary communication skills to transfer potential technical knowledge to the community, but also to interpret and capture input from the community thoroughly and comprehensively. Poor communication skills may therefore be a weakness in the collaborative approach.

8.3 Opportunities

An opportunity for collaborative community engagement approaches exists in Africa, as this signals a contextualised and

alternative way of finding solutions in a participative manner, as opposed to the traditional "Western" methods of providing solutions without first seeking community collaboration. The sense of ownership may be increased by "branding" or naming the project in a manner that the community will associate with and that they will recognise as "their input". This enhances the collaborative effort and is a strength of the Basa Magogo project. Moreover, engaging external stakeholders, e.g. Sasol, may result in the added opportunity of obtaining financial support or funding that will sustain the long-term nature of collaborative projects.

A long history of involvement by the research team in these types of projects resulted in an improved understanding of the communities' needs and perspectives on the proposed solutions. These historical lessons learnt from previous mistakes or misinterpretations of community needs provide an opportunity for current and future projects to be more collaborative and ultimately be more successful.

8.4 Threats

Implementing the *Basa Magogo* technique incorrectly may lull the community into a false security in the sense that they think their DIY (do-it-yourself) solutions are working and that they are consequently not open to be found for new ideas or negotiations on possibly safer options. These DIY solutions implemented by communities may therefore pose a threat to proper collaboration.

External stress factors, e.g. financial pressure on municipalities, may result in situations where municipalities (or other entities) expect faster results and where the time-consuming nature of the collaborative process may be perceived as a threat.

As part of a collaborative community engagement, the notion of deviating from the focus on finding a solution may result in enormous delays as the project may be continuously "side-tracked" on exploring alternative solutions to retain "openness for alternative possibilities".

9. Conclusion

The SWOT analyses of the two projects reveal valuable insights into the complexities of community engagement in addressing "wicked problems". Both projects demonstrate strengths in engaging with end users, considering cultural nuances, and implementing cost-effective solutions. The Semi-continuous Coal Stove project emphasises quick results and a comprehensive understanding of community needs through structured interviews. In contrast, the *Basa Magogo* project focuses on a collaborative and open approach. While the Semi-continuous Coal Stove project faced challenges related to co-creation and time constraints, *Basa Magogo* encountered weaknesses associated with the time-consuming nature of the collaborative approach, and both projects were confronted with communication challenges. Both projects demonstrate opportunities for continuous improvement and innovation in addressing complex challenges. The Semi-continuous Coal Stove project benefits from a laboratory-proven solution, while *Basa Magogo* capitalises on contextualised solutions to drive collaboration. Both projects face threats related to contextual nuances.

9.1 A significant threat to participatory engagement is the tension between money and time

- Some institutions require quick results and are willing to pay, resulting in the team being pushed to implement technical solutions in a short period.
- Some funders become impatient if the process of finding a solution collaboratively with communities is too time-consuming. This poses an inherent contradiction since more solutions would have been ready for implementation if there had been enough financing to generate these solutions on scale.
- Some institutions are purely profit-driven and subsequently implement any solution at hand merely to generate a report or deliverable, regardless of the impact.
- The period within which a researcher, e.g., a student, has to complete their study is sometimes too short to complete the

entire participatory process, and cracks may arise during the implementation process.

The tension between money and time poses significant challenges to participatory engagement efforts. It is therefore essential to recognise the importance of finding a balance between time and financial constraints, as well as the time required for meaningful community collaboration. In future, exploring alternative funding models such as "impact funding" could offer a promising solution to alleviate some of these challenges.

9.2 The long-term impact of an intervention is threatened by the challenges of maintaining continuous participatory engagement

- Many of the weaknesses and challenges of a solution may only surface over extended periods of continuous use, necessitating ongoing interaction and feedback.
- Because of financial, time and other resource constraints, which might not always be possible for a project team.

The challenges of maintaining continuous engagement hinder a proper understanding of the impact of solutions and may limit their long-term effectiveness.

9.3 Communication may be a considerable weakness in participatory engagement projects

- Clear communication between stakeholders is imperative because of the number and diversity of stakeholders involved.
- Effective communication may be impeded by, for example, language barriers, worldviews, varying socioeconomic contexts and education levels, and discipline-specific terminology and thinking.

Addressing these barriers and fostering clear, inclusive communication channels is vital for ensuring the meaningful participation of all stakeholders.

9.4 The approach to participatory engagement depends on the dynamics of the solution and the community involved

- A highly technical solution, such as a semi-continuous coal stove, would be exceedingly complex to develop in collaboration with a community that may not possess the technical expertise.
- Instead, a practical approach involving baseline solutions for households to test and provide feedback may be more feasible.

By adapting engagement methods to suit the specific requirements of the solution and the community's preferences, projects may foster more meaningful participation and achieve improved success in addressing community needs.

9.5 Misinterpretation and confusion regarding public participation and participatory engagement terminology may result in limited or incorrect implementation of directives

- Public participation and participatory engagement are related but differ in scope, focus, and purpose, as participatory engagement generally refers to a process of more collaborative community involvement and co-production of solutions.
- Many directives, including policy and legislation, merely refer to public participation, failing to provide direction to a more nuanced implementation of participatory engagement, especially in marginalised, low-income communities.

The use of terminology in directives, distinguishing between public participation and its more nuanced implementation through participatory engagement, specifically in low-income communities, is imperative and may result in innovative and more collaborative solutions.

9.6 The legal road to participatory engagement currently seems superficial, arduous, and distant

- Contemporary legislation places accountability on authorities and the urban planning fraternity to warrant the participation of communities and stakeholders when attempting either strategic planning or statutory planning. Although the former has developed into legislation where participatory engagement is advocated and required, statutory planning seemingly relies on archaic approaches, limiting the involvement and empowerment opportunities of end users.
- With the advent of due participatory engagement, resulting in successful project implementation and the improvement of the quality of life of communities, authorities and planners often do so at their own initiative.

It is recommended that stakeholders (including urban planners and authorities) should, notwithstanding the legislative limitations, be continuously inclined towards the significance of due consultation, either during academic programmes or continuous professional development and when executing either strategic or statutory work.

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