The bureaucratic disconnect in collaborative institutions: A case of rural water supply in Punjab, Pakistan

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Abstract

The collaborative model for rural water supply (RWS), introduced at the behest of international funders in the 1990s, experienced only partial success owing to the low acceptability of public managers and the slow process of community development (CD). This article goes into the empirical findings of a study that is based on in-depth interviews with 20 staff and line public managers of the four RWS in different regions as well as on content analysis of policy documents and funding organizations' reports. The results indicate that appropriate CD, reforms in internal organization arrangements, and understanding of context-specific social, economic, and political diversity remain necessary in collaborative compliance with institutions for RWS sustainability. The study aims at making a contribution to the theory of collaborative governance and the practice of collaborative implementation in developing countries.

Keywords: collaboration, institutions, compliance, community development, sociopolitical diversity, disconnect

1. Introduction

Collaborative implementation has changed the command-and-control approach to a decentralized and participative mode at the operational service level (Nickson, 1999; Polidano &

Hulme, 1999) in rural water supply (RWS) and sanitation in Punjab Province, Pakistan, but with a low success rate. The partial success of rural water supply (RWS) is attributed to low collaborative compliance with agreed rules (Booher, 2004). Reforms in internal organizational arrangements (IOA) (Ostrom et al., 1978), inadequate community development (CD) (Matarrita-Cascante & Brennan, 2012), and contextual sociopolitical diversity and conflict were some of the other reasons. Collaborative implementation, which aims to work jointly with users to improve the outcomes of the service, was only partially realized.

In Punjab, people were drawing water from hand pumps, canals, and rivers for domestic and agricultural purposes as late as the 1960s. Government presence in RWS and sanitation was negligible. Groundwater at shallow levels in those days was considered fit for human consumption because of a small population, fewer complex sanitation issues, and sparse use of fertilizers and pesticides in agriculture.

The Green Revolution in the 1960s introduced fertilizers and pesticides for enhanced agricultural production. Groundwater at shallow levels, once acceptable for human consumption, gradually became hazardous due to excessive chemical and microbial contamination (Abidullah et al., 2011). Safer groundwater was available at deeper levels with a significant increase in abstraction costs.

The Punjab Public Health Engineering Department (PPHED) recognizing the gravity of the situation began RWS services in brackish-water areas in the 1970s. The PPHED was responsible for the identification, construction, maintenance, and water charge collection from the RWS. The increased demand for RWS was paralleled by poor bill collection and a consequential budgetary deficit, which affected the required expansion of the RWS and maintenance of the existing system.

To address the malaise, international funding organizations suggested joint technical and social responsibilities of government officials (agents), particularly at the operational level, and users for the maintenance of RWS and sanitation (Asian Development Bank, ADB, 2008). This was in the early 1990s.

Over the last 30 years, RWS services have been managed collaboratively, but only 40% are operational. The operational services face operation and maintenance (O&M) issues such as flat water rate, poor payment collections, free riders, and no installation of metres. One of the reasons is the agents' perception of a collaborative model (Sparker, 2006) and required reforms in IOA, increased interaction between agents and users, CD, and collaborative compliance with institutions (CCI).

This study aims at answering these questions:

1. How was a collaborative operational policy introduced in the PPHED, the main public organization responsible for RWS and sanitation?
2. What internal organizational reforms were introduced for initiating collaborative implementation?
3. What were the public managers' perceptions about the collaborative design?
4. What kind of support was provided to enhance community self-organization capacity?
5. What was the influence of sociopolitical diversity and conflict on institutional compliance?

In-depth interviews were used with line-staff public managers, engaged in the supervision of four selected RWS services in the North, West, South, and Center of the Province. These interviews offer a bureaucracy's perspective on collaborative implementation. Detailed field notes and policy documents from the PPHED were consulted as well.

The study has been looking at the collaborative behaviours of agents in an 'action situation' (Ostrom, 2011), where agents interact according to institutions for RWS sustainability. Institutions are 'the prescriptions that humans use to organize all forms of repetitive and structured interactions including those within families, neighborhoods, markets, firms, sports leagues, churches, private associations, and governments at all scales' (Ostrom, 2005, p. 3). We argue that collaborative policies are prescriptions that guide agents' and users' behaviour in a repetitive situation shaped by politics which influence compliance with institutions.

The study aims at making a contribution to public administration, a scientific understanding of collaborative governance and implementation, and CCI for improved service outcomes. The literature contains hardly any studies for developing countries (Brix et al., 2020; Li, 2020; Whitaker, 1980). To practitioners, the study suggests appropriate CD, reform in IOA, and regular interaction with communities for the success of CCI.

The article first articulates the collaborative design debate and its cognates – coproduction, cooperation, comanagement, all implanted in a new public management (NPM) philosophy – (Kekez et al., 2018) to involve users in public service delivery and compliance with institutions to improve service outcomes. Next, the RWS in Punjab is contextualized. Subsequently, data source and methods are presented. Finally, the results, a discussion, and conclusions are offered.

1.1. Collaborative design debate

Scholars have suggested that a collaborative policy design (Ansell & Gash, 2017; Ostrom, V. & Ostrom, E., 1971) is efficient in reducing government expenditure, its size, and related improvement in service outcomes. Collaborative policy design and implementation aim to reallocate resources efficiently by connecting policy designers, operational staff, and users to avoid implementation failure (Gruening, 2001; Hood, 1995). Scholars variedly use 'collaboration' as 'collaborative policymaking' (Ansell & Gash, 2007), 'collaborative governance' (Kim et al., 2020), 'collaborative engagement' (Penuel & Spillane, 2014), 'collaborative policy design' (Moura e Sá, et al., 2020), and 'collaborative implementation' (Ansell & Gash, 2017). Literature also shows *coproduction* as 'the process through which inputs used to produce a good or service [are] contributed by individuals who are not in the same organization' (Ostrom, 1996, p. 1073).

All production involves the use of tangibles such as land, labour, and capital as well as intangible inputs such as capabilities, motivation, and cognition. These are not completely in an individual's control and are used in varying proportions by actors. Whitaker (1980) posits three broad activities as coproduction, one of which is peoples' interaction with agents that is proximal to collaboration. Relatedly, NPM literature has proposed the participation of users in service delivery, cooperation, coproduction, and collaboration as

one of the answers to 'adversarial' administration. This type of administration underlines collaboration between policy designers, operational staff, and users (Ostrom et al., 1961).

Ostrom et al. (1978) suggested that an IOA of police departments and citizens' characteristics affect service outcomes. An IOA is a set of decision-making rules, authority structure, planning, capacities, and so on, which influence production activities to be undertaken, such as budget allocation for visits of officials to communities, staff monitoring, and enforcement. The IOA must align with collaborative policy design for better service outcomes.

Relatedly, citizens' characteristics such as time, effort, age, income, ethnic distribution, and power relations within communities matter in service outcomes. Thus, one may say that service outputs are a result of the interaction between the IOA of government organizations and citizens' characteristics.

Importantly, Ostrom et al. (1978) and Ostrom (1996) believed in the self-organizing capacity of local communities to maintain common pool resources. Ostrom's ideation originated in the democratic Global North and was introduced in developing countries through international funding organizations in RWS and sanitation (Korten, 1980). This concept, however, was alien to the colonial bureaucratic 'ethos' (Mustafa, 2002) of the post-colonial state, rife with centralized proclivities and a senior-operational bureaucratic divide (Hayat, 2020). As a consequence, collaborative implementation received a lukewarm bureaucratic response (Suhardiman, 2013) in developing countries and was slow to pick up further.

Moreover, ethnic, political, and tribal power relations and ubiquitous social and economic inequalities further constrained collaborative design (Mufti et al., 2020; Mustafa et al., 2016). The clientelistic state reinforced social and economic inequalities, and a few, closer to power circles, benefitted from services, whereas a large population remained excluded. Adopting a collaborative model, both service providers and users, attuned to hierarchical provisioning in a post-colonial state, required time and experience to accept a democratic collaborative policy design and implementation (Clarke & Missingham, 2009). Korten (1980) argued that transforming from a rigid structuration to a collaborative model requires a conscious learning process among agents and users for a successful participatory model adoption for goal achievement; that is, the self-perception of users as passive recipients of services as well as the adversarial structure in which they were receiving services both needed transformations.

We draw from the work of Lubell, 2004 as an analytical concept, *Collaborative Compliance with Institutions (CCI)*, in a participatory implementation model. By this, we mean a joint compliance with mutually agreed-on rules by actors engaged in an 'action situation' (Ostrom, 2011) to achieve common goals (Jung & Ritz, 2014) and sharing information in a trusted environment. CD literature and collaborative theory suggest IOA and organizational capacity, encouraging self-organizing capacities and equitable access to resources, and trust to achieve collective action goals. CD requires government facilitation to improve CCI, by both users and operational staff. This makes a collaborative, participatory model of service improvement a two-way process based on trust and reciprocity with adjustments to each other's service expectations and choices to affect the outcome positively (Whitaker, 1980).

This requires community development workers (CDWs) and a street-level bureaucracy (Lipsky, 2010) to support and motivate cooperation and a uniform compliance with rules among diverse groups (Vanleene et al., 2019). In this collaborative process, the role of CDWs invariably becomes pivotal: to exhort and share rule information, to engage in deliberative communication and knowledge dissemination in a diverse sociopolitical context (Mugumya, 2013), and to persuade institutional compliance (Alford, 2013).The role and position of CDWs, therefore, is important in post-colonial countries saddled with a rigid and personalized law and order administration (Caiden, 1991) lacking experience in the execution of a collaborative design.

Effective collaborative implementation and compliance with institutions is contingent on facilitative IOA of the PPHED, including support to CDWs, who understand the local political context and help communities to self-organize, resolve conflicts, and ensure compliance with institutions for improved service outcomes.

While the collaborative, participatory implementation design is credited, detractors on the ground challenge that it replaces local knowledge with 'new planning knowledge' promoted by international funding organizations. They further allege that it marginalizes the deprived and empowers already powerful groups in a community. Hence, decision-making remains exclusive rather than inclusive. This exclusivity is exacerbated in a socially iniquitous culture. Also, they say, participatory groups at the grassroots can become 'human software', permitting investment with less local resistance (Cooke & Kothari, 2001). Although a collaborative participatory design is a time-consuming process, it creates a sense of ownership, enhances egalitarian values, and promotes sharing of responsibilities.

1.2.   Contextualizing RWS in Punjab

Before 1993–1994 in Pakistan Punjab, the PPHED supplied rural water to communities in a top-down model. In 1993–1994, the ADB and World Bank (WB) funded RWS and sanitation programmes. They introduced a collaborative model involving communities in design, construction, and maintenance.

The ADB provided loans for least-cost and low-technology RWS and drainage schemes under the Punjab Rural Water Supply and Sanitation Project (PRWSSP) to the selected communities in seven districts. The project aimed at (i) water supply and drainage construction, (ii) hygiene education, and (iii) strengthening institutional support to the PPHED. It also envisaged the creation of a community-based organization (CBO) to manage, operate, and maintain RWS and provide water to all households in the community at an affordable price (ADB, 2008). The schemes completed under the PRWSSP were handed over to hastily created CBOs, without training their members in self-organization, terms of partnership, rules for O&M, and compliance. During this time, many RWSs closed due to neglect, financial incapacity, and little training in leadership, as well as lack of technical skills and self-organization (Madrigal et al., 2011).

In 2002, the ADB approved another Punjab Community Water Supply and Sanitation (Sector) Project (PCWSSP). This aimed to provide water supply, drainage, and

sanitation to poor villages in brackish or water-scarce areas through a community-based and demand-driven approach (ADB, 2009). It also supported capacity enhancement of the local Tehsil Municipal Administration to organize community-based work. It focused on saving women's time and energy in fetching water to enable them to attend school, promote self-employment, and help improve mother and child care (ADB, 2009).

Routine O&M was mandatory for CBOs under the PRWSSP and PCWSSP for RWS and sanitation. There were, however, no organizational arrangements for CD (Interview, Deputy Secretary, Community Development, August 19, 2019). A *Community Development Unit* (CDU) was created at the PPHED in 2005 and a *Manual for community development* was produced in 2010 under the guidance of the then secretary of the department. The *Manual* provided a set of rules for creating a CBO and for community involvement during design, construction, and handing over of RWS to CBO. It included training of CBO members in the O&M of RWSs, responsibilities, and procedural rules.

The WB-funded Social Action Program SAP I (1993/1994–1997/1998) and SAP II (1997–2002) were overall projects for the improvement of basic social services, which included primary health and education, population planning, and RWS and sanitation for the whole country. They identified over-centralized management disconnected from front-line services, absence of community involvement, inadequate designs with low priority, and lack of commitment as causes of deficient social services.

The collaborative implementation in the SAP strategy suggested a decentralized approach clarifying responsibilities for the implementation for each of the four services. Its purpose-based annual agreement with detailed operational plans further introduced community participation and experimentation with non-governmental and private organizations. In the RWS programme, CBOs were key organizations for 'promoting community responsibility, particularly for operation and maintenance' (World Bank, 1994, p. 22). Notably, ADB and WB projects were running almost parallel, emphasizing community collaboration to improve outcomes, and increasing water service value. But laborious reforms in IOA from a centralized to a decentralized structure, the time-consuming creation of a CDU, and the slow development of the *Manual* perpetuated the command-and-control regime.

2. Data source and methods

To understand the process and state of collaborative implementation, the study followed a qualitative approach. It focused on an understanding of public officials' perspectives and experiences in collaborative implementation of RWS.

These were the main, open-ended, questions of the study:

 1a. Is there an official schedule of visits to RWS
 1b. Do staff adhere to the schedule?
  2. How do you enforce rules given in the *Manual*?
  3. When, how, and what training is given to the CBOs for self-organization of RWS?

4. How are social, economic, and political diversities reconciled in rural areas for institutional compliance?

5a. How does the community determine water charges?

5b. How do they collect water charges?

6. How are other rules as given in the *Manual* enforced?

We drew on the social constructivist paradigm that shapes and informs our approach to data collection and analysis. The heart of the study was to obtain both retrospective and real-time accounts by agents experiencing the phenomenon of theoretical interest to seek answers to the questions. We drew a purposive sample of officials and conducted 20 in-depth interviews with staff public line managers of the PPHED during 2019 (Table 1).

Interviewees included technical and non-technical civil servants of the department, its head, senior officials, mid-level executives, and field staff. The head of the department and mid-level executives were selected to know their perspectives on CCI and IOA. Operational staff was drawn from the four selected RWS in the districts of Dera Ghazi Khan, Sialkot, Sargodha, and Kasur (Figure 1).

Anonymity was ensured so that the interviewee could speak freely. A saturation approach was followed; that is, interviews were stopped when no new information or insights could be obtained. We recognized that to gain more clarity, uncover concepts, and

Table 1
Details of respondents

Title	Number of persons	Experience in years	Technical qualification (Engineer)	Non-technical qualification?
1. Former Secretary	1	34		√ Masters
2. Current Secretary	1	32		√ Masters
3. Additional Secretary (technical)	1	33	√	
4. Superintendent Engineer	1	30	√	
5. Deputy Secretary (technical)	1	15	√	
6. Deputy Secretary (community development unit)	1	20	√	
7. Deputy Secretary	1	28	√	
8. Executive Engineer	1	20	√	
9. Executive Engineer	1	10	√	
10. Executive Engineer	1	33	√	
11. Executive Engineer	1	15	√	
12. Community Development Officer	4	10 (average)		√ Bachelors
13. Community-based Motivator (female)	5	6 (average)		√ Bachelors

Figure 1: Map of the Province of Punjab, Pakistan.

get a deeper understanding, interview questions evolved and were reshaped as interviews progressed (Gioia et al., 2012).

The one who conducted the interviews had worked with a government agency, and this helped in getting appointments for interviews faster. He or she, however, did not know the people to be interviewed. To further reduce the bias, an informal discussion preceded each formal, recorded interview. Their permission was sought before recording. It was assumed that managers working in the organization would be 'knowledgeable agents' and that they would understand what they were doing and could explain their thoughts, intentions, and actions comfortably according to their understanding.

The information given by this category of respondents is their own perspective and is not imposed by the researchers.

On their part, researchers bring in their knowledge as well and figure out the pattern of an interview trying to link concepts found to theory. The recorded interviews were immediately transcribed and member checked with respondents for errors in transcription. The interview transcription had over 40,000 words. After transcription, the data corpus was converted into initial codes or 'open coding' (Charmaz, 2014) and categories. As the first step, codes and categories were manually identified (Saldana, 2017), and later they were identified with the help of the Nvivo software.

We began by developing the codes without linking them to theory or the objectives of the study. We kept 'a willing suspension of belief' (Gioia et al., 2012). We separated paragraphs and sentences which carried an idea that could be coded.

Each code comprised categories. The code 'collaborative compliance with institutions' contained the maximum response frequency. As coding progressed, we began to see similarities and differences among the many codes and categories (similar to Strauss and Corbin's [1998] notion of axial coding). This was a process that eventually reduced the total to 38 codes, a more manageable number.

As we refined our codes and related to the theoretical concepts, more rigour was added to code development. We then gave the categories phrasal descriptors (preferably retaining informant terms) while considering the array before us. We adopted a blend of *hypothesis coding, in vivo coding, and evaluation coding* (Saldana, 2017). For hypothesis coding, codes are developed from theory about what will be found in data before it has been collected and analysed. In vivo coding, we use the actual words used by respondents. Evaluation codes assign merit, worth, or significance to a programme or policy. It is appropriate for policy, critical action, and evaluation studies. For this study, 20 codes were used for the analysis.

3. Findings

The 20 codes drawn from the interviews are presented in Table 2. Codes 1–13 are aggregated as *IOA*. Although CD (code 12) overlaps with *IOA*, it is discussed separately. Code 15 is a perception of public managers about CBOs. Code 14, 'collaborative compliance with institutions', was mentioned 10 times as an important element for RWS sustainability by the operational public manager of the CDU. Code 20, 'communication' (and interaction), are prerequisites for a collaborative design.

We drew the first-order codes from the informants' view, second-order codes from theoretical categories, and then aggregated the theoretical construct.

The codes drawn from the five questions were integrated into four constructs. These are *internal organizational arrangement*, *community development*, *contextual social diversity and conflict,* and *collaborative compliance* (Figure 2). Each of these is discussed in the following.

Table 2
Codes derived from interviews

No.	Codes	Frequency of responses	No.	Codes	Frequency of responses
1.	Bureaucratic structure and procedures	10	11.	Inadequate financial and technical capacity of CBOs	17
2.	Structural functional change	8	12.	Community development/education a prerequisite	8
3.	Little enforcement of existing policy (IOA)	20	13.	Between 1992 and 1997 no community mobilization by PPHED	9
4.	Financial, human, procedures and other constraints (IOA)	15	14.	Collaborative compliance with institutions is essential	10
5.	Low PPHED monitoring	8	15.	CBOs should not be responsible for O&M	10
6.	PPHED dissociates from CBOs	10	16.	The story of the water metre	4
7.	Community-based motivators (CBM) vs Technical staff conflict (IOA)	9	17	Philanthropy	9
8.	State to provide municipal water free	7	18	Social diversity and conflict	9
9.	Collaborative design donor-driven	13	19	Less trust and more expectations from government	8
10.	Individual effort of official	8	20.	Communication: Two-way learning model not adopted but necessary for collaborative implementation	14

3.1. *Internal organizational arrangements (IOAs)*

The IOA, as an aggregate theoretical construct (Figure 2A), includes financial limitation, less monitoring, dissociation, lack of supervision (planning and readiness), and inadequate use of authority by PHED. The bureaucratic perception, generally, is for free provisioning of water as they think CBOs lack financial and technical competence to sustain RWS. This perception contradicts the collaborative approach. In a way, it confirms the hierarchy seemingly observed in a lower financial allocation and through irregular visits of operational staff (Suhardiman, 2013). Moreover, local politicians also use the provision of RWS as a political ploy for election campaigns.

Relatedly, dysfunctional RWSs face neglect as well. According to an additional secretary:

Chief engineers are supposed to monitor RWS, but they absolve themselves after handing over, and hardly supervise the schedule of visits of operational staff. Thus, CBOs are largely responsible for the O&M of RWSs.

First-order codes   Second-order theoretical category   Aggregate theoretical construct

First-order codes:

- Bureaucratic perception of collaborative approach
- Fewer resources for visits
- Inadequate transport for female CDWs

→ **Budgetary**

- Visits are initiated on CBOs request
- No location map of RWS in relevant office

→ **Planning and readiness**

- Weak enforcement of SOPs
- PHED dissociates from CBO/RWS payment & meter installation
- Authority abdicated before interest

→ **Weak use of authority**

→ *Internal organizational arrangement*

- Few repeated interactive sessions needed
- Little communication with community
- Little feedback top

→ **Deliberative communication**

- CDU formed in 2005
- 1992–1997:CBOs politically constituted and RWS handed over without training

→ **No training/only political interest**

- Manual developed in 2010
- CBOs created in accordance with the Manual and RWS handed over properly

→ **CBO formation/training**

→ *Community development*

- Multiple Diversity in communities: education, income, positive competition, political, ethnic, tribal, caste and sectarian
- Competing self-interests affect

→ **Multiple diversities**

- In some brackish-water areas most people live abroad and have less interest in RWS
- The village influential nominates himself as CBO chairman and doles out benefits
- Strong kinship and enmities
- Occasionally opposition is for the sake of it

→ **Diversity and no conflict resolution**

- Despite political and ethnic differences some communities cooperate on water matters
- Communities negotiate and run the public good

→ **Diversity and conflict resolution**

→ *Sociopolitical diversity & conflict*

In rural areas there are varieties of diversities, it takes time for people to cooperate

→ **Slow process of inducing cooperation**

- Communities fail to collect charges
- Communitieshavefewerthan 40% connections
- Free extraction in sweet-water zones abstraction
- Water meters not installed

→ **Weak compliance to rules/informal rules**

- CBOs do not terminate connections of their kin
- Water is tested by PHED
- Chlorinator is placed by PHED

→ **Formal institutions**
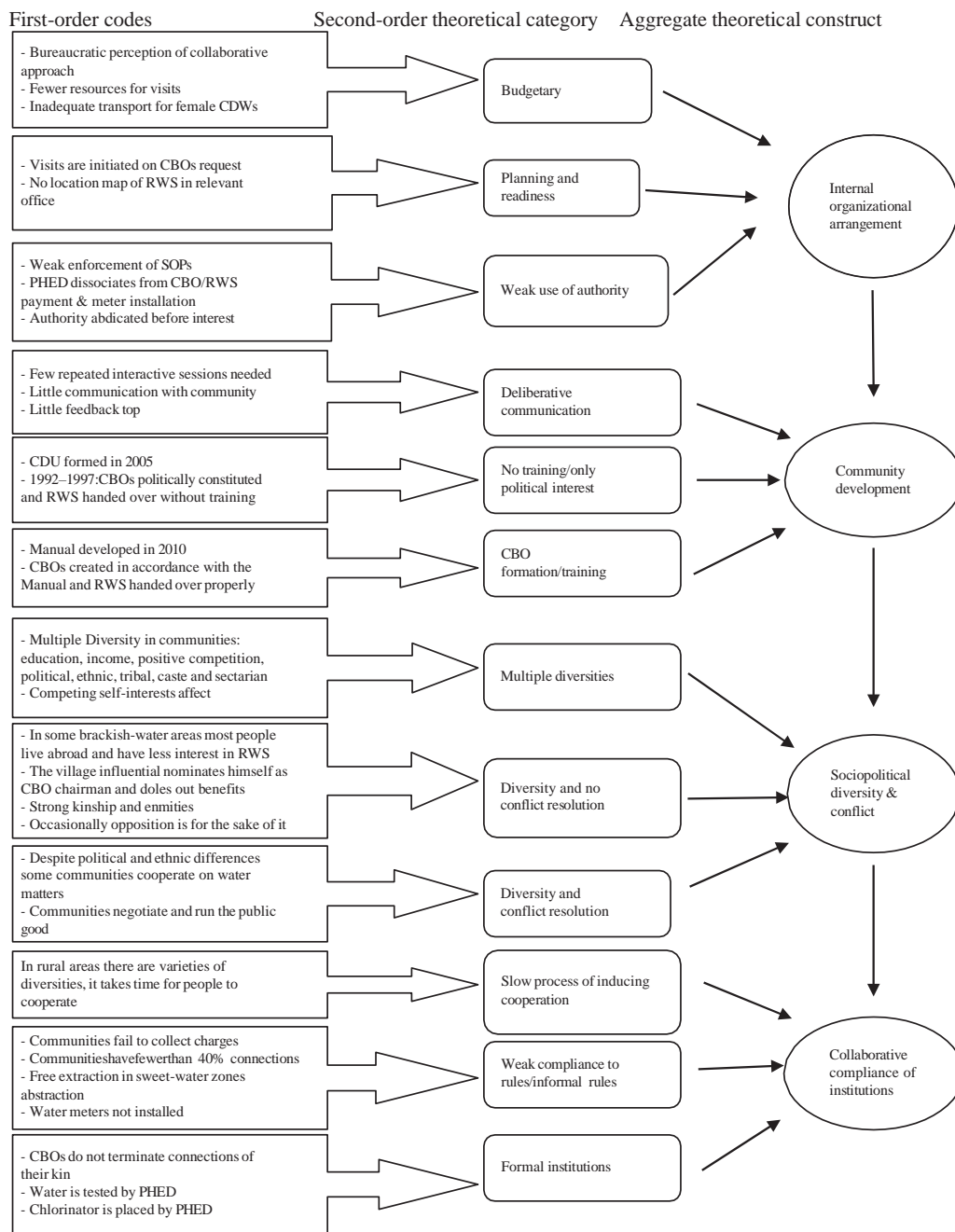
→ *Collaborative compliance of institutions*

Figure 2: The data structure from the interviews: First-order, second-order, and aggregate constructs; internal organizational arrangement (A), community development (B), sociopolitical diversity & conflict (C), and collaborative compliance (D).

Another officer remarked:

The PHED is responsible for the supervision of the RWS, but there is no strategy and little budgetary allocation for it.

Moreover, the Water Authority and also the installation of water filtration plants in urban and rural areas for safe drinking water for limited communities leave few financial resources for collaborative institutional adherence (Additional Secretary, interview 26/10/2019).

At the operational level, a female CDW corroborated:

The insufficient financial allocation for transport is one of the reasons for infrequent visits to communities.

Those operational staff who do visit communities are more driven individually than by organizational arrangements. Individual motivation varies across the organization. But the perception of a collaborative approach and motivation of the head of the organization significantly determines service outcomes. An operational staff mentioned: 'The present secretary is motivated to facilitate CBOs to make these effective. He works 24/7. He asked the community development officers (CDOs) to prepare a visit plan and share it with the executive engineer who is the operational manager. The CDW will now visit communities daily.' He added: 'The CDO, the subdivisional officers (SDOs), and sub-engineers are provided android phones and a visit plan, and they will upload pictures on each visit.'

We infer that motivation and commitment of top persons and performance review of and facilitation for staff as well as planning and feedback are important organizational arrangements for successful collaborative outcomes (Liedtka et al., 1996). Sadly, when the head of the organization is transferred after a few months under the present arrangement, it interrupts the continuity of collaborative implementation and affects service delivery outcomes, which is a challenge in developing countries (Hayat, 2020).

Enforcement of rules and use of authority is generally weakened due to external power dynamics like the influence of interest groups (Pells, in Emerson & Nabatchi, 2015) and inadequate accountability within the system. Insufficient rule enforcement in the event of local politics leaves operational staff demoralized and withdrawn (Mohmand, 2020). This happened during the CBO formation in the early 1990s, when a person of influence in a village wanted to become chairman of the CBO for more political influence.

According to the executive engineer of Sialkot and Sargodha districts,

We went to a village and invited the Chaudhry (an influential) of the village, and asked for help to constitute a committee to hand over the RWS. He said, 'OK, you want to hand over the RWS to us?' We replied, 'Yes'. He said, 'I nominate myself as chairman of the CBO and now the tube well is mine.' He then nominated 4–5 persons of his own to run the RWS and used its water for irrigating his land.

We infer from this case that local influentials are not inclined toward collaborative implementation. Nevertheless, frequent interaction with CDWs may change the perception of collaborative implementation and compliance (Sønderskov, 2019). Generally

speaking, the findings indicate that IOAs and the bureaucratic 'ethos' need to realign with collaborative design so that resources, frequency of interaction with the CBO, monitoring, use of authority, negotiations with interest groups, and better planning by the government are instituted effectively.

3.2　Community development

CD is necessitated in less democratic cultures where acceptance of other diversities, including ethnic diversity, is low. The CD process facilitates the inclusion of diverse groups to address common interests and supports groups to self-organize around those common interests. The process of CBO formation, training of CBO members, and regular deliberative communication with the communities are the three areas that emerged from the analysis for the CD process and effective CCI. These are all the responsibilities of the PHED.

> In the IOA for CDWs, an employee of PHED is trained in soft human skills, like deliberative communication, negotiation, and emotional intelligence. She/he is knowledgeable about community power dynamics, socio-cultural malaise, bio-physical conditions, and basic technical know-how of the RWS. The CDWs are trained to weave unity out of diversity for the sustainability of water resources. This becomes even more important when the actions are structured to occur jointly and communities are supported to self-organize their activities. This aspect in PHED, however, received little attention. One of the reasons is that seniors seldom monitor their progress. The present Secretary is different, however … He visits RWS in villages. This has alerted the behavior of senior and operational staff. (Deputy Secretary, CDU, 9/10/2019)

Self-organization in communities can fend off the damage to a collective action dilemma, provided communities are trained and supported to create their dreams, acquire new skills, and learn new knowledge to realize goals. CDWs can facilitate the development of leadership skills (De la Puente, 2011), promote community participation in decision-making (Ravensbergen & VanderPlaat, 2010), community empowerment (Tremblay & Gutberlet, 2010), and capacity development (King & Cruickshank, 2012).

Communities on their own may not be able to protect collective resources, especially in countries where access to resources is limited to a rural population because of low literacy, insufficient technical know-how, financial capacity, sociopolitical dynamics, and lack of commitment to the sustainability of the collective good. That is why CD by the government improves the provision of a service like water supply, which is both a public and a private good (individual water connection).

In a case study, we found CD had arrived late in 2005, whereas the RWS had been handed over to (hastily constituted) CBOs in 1998 (Figure 2B), while the CDU had established ownership of the unit, and support was slow to come.

According to the deputy secretary (CDU): 'In 1992 the provincial government had ordered immediate handing over of the RWS to the beneficiaries. We, therefore, without planning, constituted a CBO, nominated its chairman and members, and handed over the RWS'. The executive engineer, Kasur and Sialkot, responded: 'At that time there were no

terms of partnership, and the RWSs were hastily given either to a municipal committee or to a hurriedly constituted CBO with no training to its members.' He further noted: 'An executive order from the government stated that RWS in rural areas will be operated and maintained by water users.' It was so sudden that there was no time to prepare for the handing-over and a training process.

CD theory guides (De la Puente, 2011) that community workers, like some kind of street-level bureaucracy, should adopt the roles of friend-mediator and leader-mediator. Time, commitment, and resources are necessary for a CDW to create trust and public value in collective action CCI, and the self-organizing capacity of CBOs. On account of an overarching, post-colonial and adversarial bureaucracy CD has remained low on the PHED agenda. This has influenced the collaborative implementation of policy, affecting the sustainability of RWSs.

3.3.   Social diversity and conflict

Operational government officials, particularly CDWs, understand that social diversity and conflict are mainly emerging from sociopolitical differences and power push and pull. As mediators, they can, to a certain extent, resolve local conflict to ensure CCI.

Social and political interaction at the rural community level is also influenced by *Biradari* relationships. *Biradari* is a social group sharing descent from the same ancestors. It has a great influence on social interaction and informal institutions. *Biradaris* play a greater role than religion and ideologies in the politics of South Asia. Social and political alliances are made largely along *Biradari* lines (Lieven, 2012). Usually, a bond within a *Biradari* is maintained through intermarriage and has implications for politics and social interaction.

Biradari in literature is referred to as 'kinship'. It is a form of social capital (Uphoff & Wijayarantna, 2000) and an important determinant in cooperation and collaboration (Akbari et al., 2019), but can be a source of conflict and opposition as well. At community level, multiple diversities, including kinship, if left unbridled, may hinder collaborative implementation and compliance with institutions. A village community comprises various *Biradaris* and castes. Some are more influential than others, and some are rich, whereas others are poor. Powerful and more influential relations generally dominate local politics and less strong kinships are marginalized (Figure 2C).

The greater influence of kinship on CBO sometimes imbalances resource distribution which, in turn, affects the O&M of RWS. The subdivisional officer of District Dera, Ghazi Khan, remarked: 'The powerful do not pay (water charges). They bully the CBO chairman who has no legal power to disconnect water connections, and other people follow suit. On the other hand, we find communities that cooperate on collective issues, despite differences they resolve conflicts related to kinship, power, and influence.'

This generally happens in brackish-water zones. According to the executive engineer, Sargodha district: 'The collective interest, education level, living standards, and positive competition keep RWS operational. If in a village a CBO self-organizes its operation

effectively, then in the adjoining village the CBO competes and follows suit.' He added: 'A successful CBO sets aside differences in water matters because it is in the collective interest to maintain the RWS. They have regular water testing from our district labs.' He also said: 'The 66 functional RWSs in the district are running because CBOs can resolve their conflicts through negotiations, and listen to each other's problems. We also support such CBOs. But let me add, I have political pressure to change the CBO chairman of a well-run RWS. Let us see how long I can sustain the political pressure.'

It is inferred that successful collaboration occurs when communities negotiate in a pluralistic way with the support of the PHED to achieve common goals. Moreover, for a successful collaboration for a sustainable RWS, active participation of CDWs is a necessary condition.

3.4. Collaborative compliance with institutions

Joint compliance with institutions by multiple stakeholders within a collaborative policy design is a precondition for ensuring governance of the collective good. CCI means a mutual compliance with agreed rules by all concerned stakeholders in trust and a mutually shared information environment (Lubell, 2004).

Factors that influence CCI are varied, but we consider that the organizational arrangement, CD, and an understanding of sociopolitical diversity motivate cooperation and compliance. We take the view that CCI among actors is time- and effort-dependent and is a process that requires a dynamic and adaptable strategy. Obviously, the CDWs' role is important here: they are constantly in touch with the community and can show the beneficial outcome of compliance with rules for resource sustainability.

For example, rules framed by the PHED indicate the responsibilities of the operational bureaucracy and CBOs to maintain the RWS like installation of water metres, water bill collection from users, disconnection of water supply by a CBO in case of non-payment of charges, water testing by the PHED, fixing a chlorination plant with the support of the PHED, and routine maintenance by CBOs (Figure 2D). Some of these rules are not complied with by either side, like water supply disconnection by a CBO or installation of water metres by officials due to reluctance on both sides.

CCI is affected by IOA and by external factors. According to the executive engineer Kasur: 'The two external factors are kinship (also implying social diversity, power, and conflict) and fewer than 40% connections in sweet-water zones. They make RWS financially unsustainable.' Going against kinship is unaffordable for a CBO because village life is communal, and water disconnection and pricing are socially discredited for political reasons. Here, both government officials and CBOs appear helpless to disconnect the water supply from free riders.

In sweet-water zones, the existence of fewer than 40% of water connections is attributed to a shared understanding that water is a free resource, should not be priced, and can be abstracted free. In brackish-water zones, those people who can afford to do so opt for a domestic water connection, whereas the poor collect water from those who have a

connection. According to the executive engineer: 'Water is priced at a flat rate and since the 'giver' and 'taker' believe water is a free resource, it is shared.'

Weak policy enforcement has implications for unabated groundwater abstraction, wasteful use of water, sinking water levels, and increased chemical contamination, to name a few. The common perception of water as a free resource weakens CCI and makes RWS financially unsustainable. But trained CBOs comply with rules and generate resources from philanthropist members of the community for the major maintenance of an RWS and other collective issues. But this arrangement is not a dependable recourse for poor communities, because not all CBOs are skilled in mobilizing resources.

CCI requires a steady strategy. One approach is the effective enforcement of PHED rules and the support of communities to limit unabated individual water extraction and to achieve 100% water connections from RWS, which would help improve its financial sustainability.

4.   Discussion and conclusion

Provision of RWS graduated from no service to top-down to a collaborative service between the government and the beneficiaries. Beneficiaries had first been unfamiliar with the presence of government services in rural areas and believed the government was a provider rather than a collaborator. The whole concept was perceived as donor-driven and, as a consequence, there was little effort to reduce the size of the bureaucracy, as also the budget deficit (Caiden, 1991; Korten, 1980), and to shift from an adversarial, hierarchical IOA to a collaborative design.

The introduction of a collaborative operational policy for RWS in Punjab was slow and required IOA reforms for a collaborative compliance with rules as much as a PPHED facilitation in CD which would impart self-organization skills to politically and socially diverse groups in a village for sustainable RWS. The RWS systems were handed over to CBOs without government preparedness (like a collaborative policy design enactment) regulation, enforcement, and a compliance regime. This reflected the bureaucracy's disinterest and disconnect with a collaborative approach and added to ineffective implementation (Mustafa, 2002).

It is argued that the collaborative design and implementation debate is a cognate of NPM that originated in developed countries with social, political, and administrative conditions that differ from developing countries. The top-down administrative structure in developing countries is ill-suited to collaborative implementation and is likely to underperform. Out of the four selected cases, only three were successful. The reasons for success include the following: CBO members had received CD training, there were common collective interests of the communities involved, and communities paid water charges as well as voluntarily contributed to O&M when required (Korten, 1980). So we see the initiative of CBOs to maintain an RWS despite little or no support from the government.

Of the constraining factors, unlearning previous practices and ownership of a collaborative approach required reasonable financial allocation, planning, monitoring and enforcement, greater interaction, and regular communication with communities for a CCI, while shaping a more pluralistic ethos. We identified unpreparedness in handing over

RWS, absence of interaction with CBOs of non-functional RWS systems, and an inadequate dialogue with CBOs regarding operational RWS systems.

The underperformance and ineffective collaborative compliance, according to the analysis, is due to weak monitoring and inconsistent interest and motivation at all levels, among other causes. These causes were rendering RWS non-functional. An occasional individual effort at senior and operational levels kept some RWS systems operational. Evidence of such occasional individual efforts is the creation of a CDU in 2005 and a manual for CBO training in 2010.

When communities are imparted self-governance skills and are empowered to self-organize resources (Ravensbergen & VanderPlaat, 2010), they are believed to compete with each other for effective self-organization of collective resources and resolve conflicts amicably with less support from government agents. The latter's support for sustainable RWS, however, remains crucial.

We conclude by noting three prerequisites for effective collaborative compliance. First, before initiating collaborative implementation and compliance with rules (Nickson, 1999), IOA should be made compatible with the collaborative design, formation of CBOs, planning for handing over RWS systems, training of CBO members, and necessary supervision. Second, an uninterrupted and regular dialogue between CDW and CBO is essential. The CDW is well acquainted with sociopolitical dynamics and conflict and can be an instrument in conflict resolution. Lastly, compliance with basic rules like water charges, water metre installation, and mandatory water connection for all users makes RWS financially sustainable.

We propose two areas for future study. The first is an understanding of the degree of compliance, for communication (in this case, regular visits) and deliberative dialogue, commitment, trust, and a shared understanding of water resources are perceived to lead to compliance with institutions. These need to be measured to understand the degree of compliance. Shared understanding influences water behaviour, and this, in turn, requires further research in developing countries where people consider water to be an unlimited resource.

Second, the idea of collaborative water governance was introduced by international organizations. It should be studied empirically whether water policies in Pakistan as a whole incorporate collaborative implementation design as a core element.

These future research areas can contribute to clarity on the conceptual and practical dimensions of a collaborative policy design and its implementation and compliance in connection with water usage in developing countries.

Disclosure statement

No potential conflict of interest was reported by the authors

Authors' contribution

Dr. Waheed conceived the research, collected primary data, and conducted the analysis. Dr. Sial helped with research conception and analysis, and Dr. Azhar conducted document analysis.

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