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Together Strong or Falling Apart? Coping with COVID-19 in Smallholder Irrigated Agriculture

RESEARCH ARTICLE

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ABSTRACT

Coping, surviving and living with different kinds of crisis is a recurrent challenge to those governing groundwater as a common resource. In this paper, we mobilise ideas about the functioning of the state and of processes of bricolage to explain the functioning of institutions governing groundwater during the Covid-19 pandemic. Drawing on empirical material from one irrigation scheme in Zimbabwe we argue that such institutions show signs both of transformation and degeneration over the course of the Covid-19 crisis. Our analysis shows the emergence of temporary and innovative ways of collectively organising around groundwater which ensure improved access to water during the pandemic. Such new ways of doing things draw on different sources of authority and legitimacy in shaping governance arrangements. However, as the pandemic situation becomes the 'new normal', collective arrangements degenerate into a pre-Covid-19 state, or worse, further restricting access and representation for some people.

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INTRODUCTION

Since the outbreak and declaration of Covid-19 as a global pandemic, there has been a burgeoning scholarly interest in its impacts on smallholder agriculture. Some of the literature highlights the disruption of agricultural supply and value chains due to lack of transport (Gray, 2020; Kerr, 2020; Nchanji et al., 2021), others focus on the shortage and increased cost of labour (Schmidhuber, Pound, & Qiao, 2020; Shrestha et al., 2020; Torero, 2020) or the increased food insecurity as a result of the disruptions (Gatto & Islam, 2021; Kim, Kim, & Park, 2020; Organization, 2020; Workie, Mackolil, Nyika, & Ramadas, 2020). A number of papers share concerns about increasing inequities as a result of the measures put in place by governments in attempts to control the pandemic (Bellwood-Howard & Dancer, 2021; Leonardelli et al., 2021; Ragasa, Lambrecht, Mahrt, Aung, & Wang, 2021; Takeshima, 2021). Most of the above-mentioned studies take a global, regional, or national perspective while only very few consider the everyday life – on the farm – as unit of the analysis (for notable exceptions, see Borkowski et al., 2021; Leonardelli et al., 2021; Pišot et al., 2020). Also, in the literature on the commons, not much is written (yet) on how the actual processes of governing common pool resources – such as (ground)water – take place in times of the Covid-19 pandemic. Therefore, in this paper we mobilise a number of concepts related to governance of the commons, to analyse the impact of Covid-19 in a collectively governed irrigation scheme in southern Zimbabwe. We suggest that our approach helps: 1) to better understand the implications of the Covid-19 crisis for smallholder farmers and 2) to argue that institutional change during a crisis is a power-laden yet ambiguous process, leading – at least partly – to unpredictable outcomes in which institutions may degenerate, become more robust or transform[1] into something new.

For such an enquiry to be fruitful, we acknowledge the complexity and multi-layered nature of the crisis generated by the Covid-19 outbreak. The pandemic is broadly contextualised as a global health crisis intertwined with a political crisis of governance as many governments were ill-prepared to effectively respond to it (Kuhlmann, Hellström, Ramberg, & Reiter, 2021; Leach, MacGregor, Ripoll, Scoones, & Wilkinson, 2022). In the smallholder agricultural sector Covid-19 is often not experienced as a stand-alone crisis but rather as a continuation of multiple ongoing challenges which include climatological uncertainties due to (increased) droughts and/or floods and economic uncertainties such as market volatility and insecurity of tenure. These multiple intertwined struggles of smallholder farmers have been well documented in the pre-Covid-19 commons literature, often by engaging with discourses on adaptation and/or resilience (e.g. Boyd and Folke, 2011; Brown, 2014; Chikozho and Mapedza, 2017; Ratner et al., 2013; Thapa and Scott, 2019). Work published during the pandemic continues this trajectory and has not yet considered the effects of Covid-19 on the governance of the commons (Bashizi et al., 2021; Beckwith, 2021; Berkes, Tsai, Bayrak, & Lin, 2021; Smirnova, Lawrence, & Bohland, 2021).

Together with others who critique the tendency of resilience literature to over-simplify social and political complexity (e.g. Ensor et al., 2021; Leonardelli et al., 2021; Pelling, 2010; Tozzi, 2021), we argue that there is a multiplicity of dynamics, contestations and tensions between different coping strategies. These complexities become evident as individuals and collectives necessarily improvise to meet the challenges of prolonged and multi-faceted crises (see also Berbés-Blázquez et al., 2022). Such improvisations involve the invention and re-crafting of resource use rules, which are legitimised by the mobilisation of different forms of authority.

Our case of smallholder farming during the Covid-19 pandemic shows that there are a range of different potential responses, authorities and possibilities in a crisis. Even though the crisis necessitates creative collective responses, the outcomes do not necessarily lead to more social cohesion or resilience for all farmers. Indeed, our paper shows that the pandemic has opened up opportunities for some, but entrenches disadvantages for others in a smallholder farming community.

DYNAMICS OF INSTITUTIONAL CHANGE AND RESILIENCE

Institutional change is a complex and dynamic process that occurs within a complex network of social circumstances and can be shaped by internal and external pressures or events. There is a varied literature in commons scholarship (broadly defined) explaining the institutional change from different perspectives. Here we selectively highlight key contributions of this literature and identify the gaps which lead us to develop our own conceptual framework for analysis. The classical literature suggests that institutional change results from people exercising rational choice in an effort to maximise their benefits, primarily economic or productive ones (Hardin, 1998; Ostrom, 1990, 2008). Critics of this view suggest that it fails to account for changes driven by other forms of rationality, unintentional outcomes and the power dynamics and context of institutional change (Gebara, 2019).

In both the classical and critical view on institutional change, there is a recognition of the importance of process and that institutional arrangements evolve and change

over time. However, explanations of the key factors driving those processes vary. For some, institutional change is viewed as a state of transition shaped by external pressure and internal social arrangements, negotiated and contested through the interaction of top-down and bottom-up institutional arrangements and approaches (Kasymov, Hamidov, & Hagedorn, 2020). This view aligns with the distributional theory of institutional change that emphasises the (positional) power and relations exercised through a bargaining process (Davidova, 2007; Ho, 2006; Knight & Jack, 1992; Thiel, 2014). In North's conceptualisation of institutional change, change is contestation and negotiations between dominant beliefs of politicians and economic entrepreneurs and the existing institutions built on beliefs and culture (North, 2010). Contestations (which lead to change) emanate from the power of existing institutions to limit the policymakers (Hamidov et al., 2020). From our perspective in this paper, we recognise the value of thinking about positions, contestations and transitions in analysing institutional change. However, we argue that much of this literature focuses on negotiations between people in positions of authority, whilst we are interested in shifting the focus onto the specificities of how the ordinary farmer, water user and villager are able to shape institutions and the interface with state agents.

To do this we draw more centrally on literature which can be loosely characterised as critical institutionalism[2] (Cleaver & Whaley, 2018). Key strands of thinking here emphasise the ways in which institutions are pieced together from a variety of social resources – a process we refer to as bricolage (Cleaver, 2001, 2002; Cleaver & De Koning, 2015; Cleaver & Whaley, 2018), their layered and hybrid nature (Marin & Bjørklund, 2015); the importance of authority and legitimacy in their functioning (Sikor & Lund, 2009; Streeck & Thelen, 2009; Thelen, 2009); the likelihood of unanticipated outcomes and the multiplicity of meanings that can adhere to particular institutional arrangements (Streeck & Yamamura, 2003). In our analysis, this approach is helpful in understanding how institutional change comes about in the commons. Here we categorise the changes that take place during Covid-19 as potentially transformational – moving in progressive directions – or as degenerative – reinforcing and reproducing entrenched inequalities.

ANALYTICAL CONCEPTS AND RESEARCH METHODS

In this paper, we build on our previous work on the Rufaro smallholder irrigation scheme, in which we show how irrigation practices are shaped by moral ecological rationalities which emphasise sharing and caring alongside attempts to control water (Chitata et al., 2022). We have shown how the constantly changing nature and form of infrastructure calls for collective learning through situated and embodied knowledges and improvisations to make water flow in the irrigation scheme (Chitata, Kemerink-Seyoum, & Cleaver, 2021). Underpinning our analytical approach is the concept of institutional bricolage, here understood as the forming of hybrid arrangements through everyday practices. Such bricolaged arrangements require the exercise of (creative yet constrained) agency in response to changing circumstances and the attribution of authority and legitimacy to those arrangements to ensure that they can function (Cleaver & Whaley, 2018). We enrich our institutional bricolage lens with insights derived from concepts of state functioning (fragmented authoritarianism and the everyday state), and of practical norms to help to further explain how collective governance arrangements work and evolve in a crisis situation. These combined approaches lead us to focus on the everyday practices including the deployment of authority and legitimacy in the shaping and instituting water governance arrangements.

Fragmented authoritarianism is a concept for studying processes of governing which Lieberthal and Oksenberg first used in 1988 to describe policy formulation and implementation in China. In its first deployment, fragmented authoritarianism was proposed to reveal multiple dimensions of the state, e.g., bargaining and conflicts between vertical hierarchical functional agencies and horizontal units (Lieberthal & Oksenberg, 1988). In our deployment of fragmented authoritarianism we acknowledge the contestations and negotiations between hierarchical function of the state and horizontal territorially-based administrative units (Lieberthal & Lampton, 2018). Furthermore, we propose that in economically challenged states, the hierarchical function of the state is limited by the availability of resources, resulting in episodic imposition of state-directed governance. In this paper we focus on the practices and processes of implementing the Covid-19 policy, decision making and acts of authority exercised in a fragmented and disjointed governance system in Zimbabwe. The concept of fragmented authoritarianism allows us to study and understand how pockets of space and time may emerge in which the state is absent and/or present. This fragmentation allows others – such as NGOs, collectives of citizens and individuals – to fill this gap to implement, or deviate from, the government mandate (Mertha, 2009). As a result, complex institutional arrangements nested in an increasingly diversified context emerge (Li, 2013; Lieberthal & Oksenberg, 1988; Liu, 2020; Wang, Liu, & Dang, 2018).

Notably, top-down authoritarian initiatives may exist side by side with these spaces of plurality. For example, Wang, Liu, & Dang (2018) in their study of irrigation management in China highlights how fragmented authoritarianisms converge and legitimately coexist with a diverse of other institutions and grassroots initiatives. This process in which collectives and/or individuals invent authority and claim legitimacy, drawing their imagined or real legitimacy from the state has been coined as the creation of the everyday state (Lund, 2006; Olivier de Sardan, 2008). The concept of the everyday state allows us to understand how, in many places, ample rules are in use, which are often hybrid, constantly (re)negotiated, contested and legitimised on various sources of legitimacy (Lund, 2006). These sources include the (imagined) state, and how in fact the state can to some extent re-emerge even in these fragmented pockets in which it is functionally absent. In this paper we see the concept of the everyday state (the processes through which diverse, hybrid and improvised arrangements are attributed state-like authority) as critical to understanding how governance works in conditions of fragmented authoritarianism. Finally, the concept of practical norms allows us to study the actual practices of the actors – what does happen rather than what is supposed to happen. (De Herdt and de Sardan, 2015). Central to the concept of practical norms is that these implicit practices do not just deviate from state sanctioned rules but often also clearly deviate from explicit social norms.

By engaging with these concepts (institutional bricolage, fragmented authoritarianism and practical norms), we illuminate empirically how the practices of actors are pragmatic, shaped by power relations and negotiated. Such practices might complement and contradict each other, reshape power relations and change as new circumstances arise (De Herdt & de Sardan, 2015; de Sardan, 2013, 2015; de Sardan, Diarra, & Moha, 2017; Titeca & De Herdt, 2011). These three concepts help us to illuminate how actual governance unfolds during a complex crisis by giving space to reflect on (1) what do the government and law say people should do, (2) what do the rules in use say people can(not) do, and (3) what people actually do to cope with Covid-19 in a specific smallholder irrigation scheme in Zimbabwe. The three concepts work in complementary ways to explain how multifaceted, ambiguous, and fuzzy networks of social relations are called upon, and selectively institutionalised, to navigate through moments of crisis in Rufaro Irrigation scheme.

RUFARO IRRIGATION SCHEME AND DATA COLLECTION METHODS

The current operation of the Rufaro Irrigation Scheme is shaped by its historical development, which was characterised by a heavy government presence, and support which waned over time. These changes are mirrored in or shaped by different political eras and processes, including nation-state building in the early years of independence and reforms in land tenure and the water sector (Chitata et al., 2021). The Rufaro Irrigation Scheme was established in 1983 as a product of the early land reform process, modelled around collective cooperatives, referred to as Model B. In this model, people were resettled on collectively owned land, and each adult male[3] member was entitled to a single share within the cooperative (see Chitata et al., 2021 for more details). The aim of the model was to increase agricultural production and empower smallholder farmers by providing them with the resources for production. The cooperative members were men drawn from Zaka, Bikita, Gutu and Masvingo districts (see Figure 1). In the early years of the establishment of the Rufaro Irrigation Scheme, the government was actively providing financial support and specialist services including in agronomy, animal husbandry, water and infrastructural development and repair. As the government and people worked together to implement the scheme/model, there was considerable bargaining and contestation between them. Over time the relationship between the government and the cooperative changed as, due to the budgetary constraints, the government could not continue with the same level of support (for reasons discussed in section 4). The cooperative model was subsequently abolished at the instigation of the farmers in favour of a model based on individual farmers. This change coincided with the neo-liberal policy consensus in the mid-90s and the associated momentum for promoting privatisation (see Chitata et al., 2021 for further details). The government and its hierarchical structures became less influential in the Rufaro irrigation, government presence became limited in reach and episodic, with considerable periods of absence. In the absence of government support the Rufaro Irrigation Scheme relied on international development agencies for infrastructural support, repair and maintenance.

Against this background of a changing relationship between the state and the Rufaro Irrigation Scheme, we attempt to understand how collective governance arrangements work and evolve in a crisis situation, how authority is deployed, and legitimacy is bestowed in the process. We base this on ethnographic data collected by the first author of this paper. We already studied this irrigation scheme before the pandemic (June-August 2019 and November 2019–February 2020), and the first author of this paper managed to continue fieldwork during the pandemic (March–July 2020, October–November 2020, January – March 2021, May 2021, August–October 2021). Data collection included a series of interviews with forty-

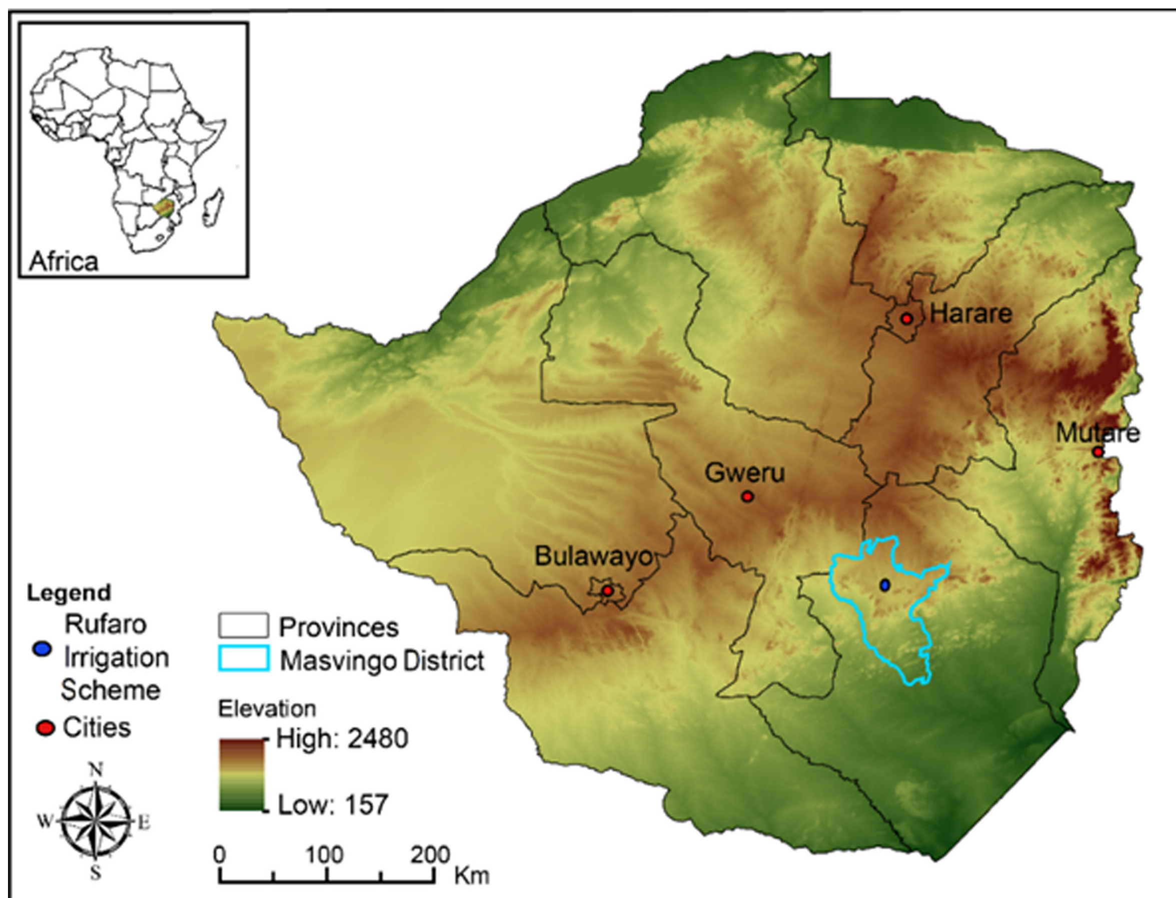

Figure 1 Location of Rufaro Irrigation Scheme.

four irrigators. These irrigators were selected through a stratified random sampling technique to ensure diversity in – amongst other characteristics – gender, age, household composition and location of plots in the irrigation scheme. These interviews with farmers were complemented by interviews with ten irrigation engineers and two government personnel from the Ministry of Women Affairs, Community, Small and Medium Enterprise Development. Furthermore, the data were triangulated through participant observation -including attending meetings of the cooperative and/or irrigation management committee and holding four focus group discussions with the irrigators. The data was analysed using thematic analysis (Braun and Clarke, 2021) to identify patterns and contradictions in the collected data around specific themes. The themes were developed through inductive coding – specifically, open and axial coding was used to create themes from the data set (Rule & John, 2015). In the next section, we briefly situate the Covid-19 pandemic in the ongoing political and economic crisis in Zimbabwe, illustrating how 'state failure' and dysfunctional centralisation of services occurs concurrently with continued, if sub-optimal, functioning of systems of irrigation management and basic needs provision.

CRISIS WITHIN CRISES: COVID-19 IN THE CONTEXT OF FRAGMENTED AUTHORITARIANISM IN ZIMBABWE

At independence in 1980, the government of Zimbabwe aspired for a transition towards a socialist, one-party state. This aspiration waned at the introduction of the liberal, market-oriented Economic Structural Adjustment Program which were imposed by the International Monetary Fund (IMF) in the late 1990s (Meisenhelder, 1994). The current economic crisis in Zimbabwe can partly be traced back to this IMF program, which resulted in, high inflation and reduced financing for rural development and social services, including the health sector and agricultural extension. This forced change in the country's economic policies partly explains the gradual decrease of dominance by the government[4] and the increased influence of civil society and NGOs in policy formation and implementation. However, the government has remained influential through legislation which keeps its socio-political agenda alive despite pressure from internal and external actors (see both Mertha, 2009 and Wang et al., 2018 in the case of China). For example, in water resources management, the government retains power over water, as highlighted

in the Water Act of 1998, where the country's water is vested in the President (Government of Zimbabwe, 1998). Yet, the state allowed active participation of donors in the establishment of the Water Act of 1998 and the active participation of NGOs in financing irrigation rehabilitation (Chitata et al., 2021; Kemerink-Seyoum, 2017; Kemerink-Seyoum, Chitata, Guzmán, Novoa-Sanchez, & Zwarteveen, 2019; Manzungu, Mudenda-Damba, Madyiwa, Dzingirai, & Musoni, 2016).

The economic crisis due to the economic structural adjustment program was intensified by other factors such as unbudgeted payment of gratuities[5] to the war veterans in 1997. This was followed by unbudgeted participation of the Zimbabwe army in the Democratic Republic of Congo war[6] in 1997 (Maclean, 2002; Mhlanga & Ndhlovu, 2021; Moore, 2001). In addition, there was a political crisis of 2000 which was caused by the violent Fast Track Land Resettlement Program and the entrance of a strong opposition party (Movement for Democratic Change) onto the Zimbabwean political scene. The forced appropriation, without compensation, of mainly white-owned farms and the violence perpetrated by the ruling party (ZANU-PF) towards their political opponents prompted economic sanctions and withdrawal of international (donor) support. This resulted in a meltdown of the economy and increased autocratic rule since 2000. Autocratic rule also cascades to local governance structures of chiefs and village heads as well as natural resources management institutions, partially mirroring the authoritarian *modus operandi* of the government. In a seeming contradiction, such office holders partially mirror the authoritarian modus operandi of the autocratic state, but also operate through the deployment of practical norms and the exercise of bricolaged authority. For example, the Chiefs and the Irrigation Management Committee legitimise their actions and authority by association with the ruling party (Chitata et al., 2022). However, in the process, they are also actors who participate and use practical norms in the fragmented spaces, blending authority variously from different sources- the government, the ruling party, lineage and elections. Thus, there is a broader and ongoing governance crisis in and within the 'democratic decentralised' institutions that creates gaps, opportunity to deploy bricolaged arrangements, and innovative practices in managing smallholder irrigation schemes.

Therefore, in the Zimbabwe context, the Covid-19 pandemic conflates and rides on the economic and political crisis that has dragged on for more than 20 years, resulting in strong market volatility (Duker et al., 2020) and decades of rural underdevelopment and marginalisation. The next section analyses the government response to the Covid-19 pandemic.

THE NATIONAL LOCKDOWN ORDER AND ITS AMBIGUITIES TO THE RURAL FARMERS

The proclamation of the lockdown was supported by an enactment of a statutory public health instrument (SI 83, 2020). Among other restrictions, the government banned gatherings, restricted movements and closed all business operations except for supermarkets, which were open for limited hours per day. Everyone except essential workers (in health, service stations and retail) was ordered to stay home: *"every individual is confined to his or her home and may not leave there from except temporarily for the following purposes, buying medicine and food, seeking medical assistance within a 5 km radius"* (Government of Zimbabwe, 2020: 443). Travelling between cities was completely banned, and travel within cities was exempted only to the public offering essential services. All gathering on public spaces were banned, including *"flea markets, vegetable markets and bazaars (except such as are designated by the chief enforcement officer in any local authority for the sale of food and other basic necessities, and provided the persons gathered thereat do not exceed fifty (50) persons at a time and also comply with the social distancing rule)"* (Government of Zimbabwe, 2020: 443). Although it appears as if agricultural markets had permission to operate, this was not easy to operationalise, particularly maintaining the 50 persons at a time. Subsequently, no public markets were opened but home-based/ private markets emerged –a practical norm responding to the circumscribed agricultural produce markets. In addition, the participation of rural farmers in such agricultural markets is dependent on their access to public transport, which was not operational (see also Berbés-Blázquez et al., 2022). It appears that the lockdown regulations were made with the urban population in mind and not considering the specific circumstances of the rural population. For instance, the lockdown coincided with the middle of an irrigation season in the Rufaro Irrigation Scheme; while farmers are essential for food production–they were not considered as providing essential services. Farmers had their leafy vegetables, tomatoes, and carrots ready for the market and the preparations for planting wheat for the winter season were also at their initial stages. The statutory instrument had, at very short notice, effectively stopped farmers from doing their jobs.

As expected in instantaneous reactions to the pandemic and – as was done in several other countries – the government of Zimbabwe amended Statutory Instrument 83 of 2020 three days later to widen the essential services to include the *"the conduct of agricultural activities on*

farms, including in particular the planting of any winter season crops, the harvesting of crops and land preparations in connection with agricultural activities" (Government of Zimbabwe, 2020: 459). Although this amendment addressed rural concerns more, it only addressed farm level activities, but the other aspects of the production chain, like access to the markets, were not addressed. This situation left farmers stranded with their produce but still working to produce more on their plots. To go to the official markets, the farmers would require exemption letters to pass through the many roadblocks mounted on roads leading into the cities and towns and required public transportation as many do not own vehicles. Also, the rural farmers did not know where to get these exemption letters. This unclear situation left the movement of rural farmers at the discretion and exploitation of those manning the roadblocks, i.e. opening spaces for acts of corruption. For example, the Chairperson, Secretary and the Treasurer of the Rufaro Irrigation Scheme were turned back for not having an exemption letter when they were going to collect inputs for winter wheat farming.

Subsequent lockdowns were implemented including one of nearly nine months duration (from January–September 2021) in response to the 'second wave' of Covid-19 infections. There was fragmentation between the urban and rural areas as the lockdown enforcing agents were more present in the urban areas and less so in the rural areas. Instead, the rural population was mainly left to regulate themselves and interpret the regulations in practice. In this absence of the state there was room for the everyday state to emerge and practical norms to manifest, in attempts to cope with the situation.

EVERYDAY STATE, PRACTICAL NORMS AND LEGITIMACY

In this section we use the empirical evidence to highlight how the practical norms were instituted and legitimised and the emergence of the everyday state as the people organised to cope with Covid-19. This involved inventing new ways of cooperating amongst people and drawing on different sources of authority and legitimacy including the Covid-19 itself, law and social relations of power to shape water governance arrangements. Here we focus on the everyday adjustments to arrangements and relationship around water. These happened concurrently with negotiations between the irrigation scheme and the state – for presentational purposes we deal with these in the following section.

LEGITIMACY FROM COVID-19: PLURALISING WATER- AND INFRASTRUCTURE-USE DURING COVID-19

In the Rufaro area, separate infrastructures and management arrangements exist to provide water for irrigation and domestic use. Nevertheless, the infrastructures for both purposes draw (ground)water from the same aquifer at a similar depth of 60 metres. The Rufaro irrigation cooperative owns, manages, maintains and repairs the irrigation infrastructure. This infrastructure consists of seven boreholes equipped with submersible pumps that are powered by electricity, a concrete night storage tank, underground pipes connected to hydrants and reinforced steel pipes used for irrigating the plots. The Rufaro cooperative was established in 1983 and is run by an elected seven-member committee. The majority of the committee members are male the and chair position has been occupied by men since its establishment (see Chitata et al., 2021). This is a legacy of the early years of the cooperative when only men were allowed to become members of the cooperative. On the other hand, infrastructure for domestic water supply – a Zimbabwean bush pump[7]- is managed by a committee of four people, three women and one man. These people were elected by the community; however, they are not guided by any by-laws on the election process and frequency, so the same people have been in the committee since 2010. They are responsible for coordinating the use, repair and maintenance of the hand pump.

The management of these infrastructures is separate, partly because not all households in the Rufaro community are members of the irrigation scheme. While rights like access to irrigation water, plots in the irrigation scheme and irrigation infrastructure are reserved for members of the cooperative, access to the bush pump that supplies water for domestic use is communal. The number of people queueing for domestic water is always high, and Covid-19 increased this further as the people practised one of the recommended measures "*wash hands with soap and water or use hand sanitiser*". Hand sanitisers and masks were hardly available in the rural areas, particularly in the early months of the pandemic, so people could only protect themselves by using more water for washing their hands and the things they touched during the day.

With the lockdown measures and vague guidelines in place, the Rufaro community took heed and attempted to observe the national lockdown regulations. Two weeks into the lockdown, it became apparent that it was difficult to maintain social distancing and avoid shared spaces and items – like the hand pump handle – with high potential for transmitting the virus. The rural population was increasingly

becoming more vulnerable as people from areas of high infection like South Africa were coming back home after lockdowns or loss of jobs due to lockdowns. Government guidelines were for people returning to Zimbabwe to quarantine for two weeks at government facilities and get tested before they could go to their respective homes. However, substantial number of people particularly those coming from South Africa without formal travel documents did not use the official routes back into the country. Thus, they evaded the quarantine facilities and mandatory testing. Also, the city dwellers who could secure travel exemption letters or travel –by other unofficial means- were relocating to the rural areas as they felt safe away from densely populated cities. This in turn enhanced new or revived networks of support between the rural and urban areas (Berbés-Blázquez et al., 2022) However, these exodus from cities caused anxiety amongst the Rufaro people.[8]

The fear of shared spaces increased, including around the communal hand-pump for domestic use, and some of the irrigators avoided these spaces by instituting practical norms. In doing this they drew on the exceptional circumstances of the Covid-19 pandemic as well as their membership of the cooperative as a source of legitimacy to their practice. The farmers would bring buckets to their irrigation turns, and after their irrigation, they would carry water home for domestic use. This became a familiar and logical practice among the irrigators even though it was against the standing rules of the irrigation scheme. As stated by the chairperson in charge of the cooperative in the first year of the pandemic:

> *"This infrastructure and water is specifically for irrigation and is only accessible to the irrigation/ cooperative members. Everyone can access the hand pump, but when broken, they will have to look for water for domestic uses somewhere, not in the irrigation scheme. If we allow that, our irrigation infrastructure will be destroyed, especially by non-members of the irrigation scheme."*[9]

Soon non-members of the scheme joined in fetching water from the irrigation scheme, and these were also drawing their legitimacy from the pandemic to justify going against the official rules of the irrigation cooperative. This was particularly so for two women who apparently were not 'permanent residents' of the Rufaro Community but were a domestic worker and a storekeeper who jointly stated that: *"There is Covid-19, we do not want to be exposed as much as the members of the irrigation scheme and besides the hand pump is far to us than the irrigation scheme"*. These 'obstinate' actions by the non-members and members of the irrigation scheme were, in the light of the pandemic, justified and tolerated, yet also informed by pragmatic choices of fetching water at the nearest source.

By not penalizing these new practices, the Irrigation Management Committee seemed 'agreeable' to the practice of fetching water from the Irrigation Scheme. Faced with a dilemma of balancing authority, instituted practical norms and the realities of Covid-19, the Irrigation Management Committee called for a community meeting to brainstorm the way forward. The meeting was attended by members of the irrigation scheme and non-members. The non-members to the irrigation scheme are mostly relatives and or children of the 55 registered members of the Rufaro Cooperative who have grown and have established their own families. This group of people do not have legal [constitutional] rights to both the irrigation and the land under the Rufaro Cooperative. The livelihood of the non-members depends on dryland farming and sharing produce from the irrigation scheme with their relatives. Although more than 50 people attended the meeting – more than the lockdown guidelines allowed- the people kept safe distances during the meeting.

At the meeting, people agreed to have the irrigation infrastructure also used to supply domestic water. The infrastructure in the irrigation scheme –hydrants spaced at 25-metre intervals – were now to serve a bricolaged purpose of irrigating the plots and as points from which people could fetch water for domestic purposes. This arrangement was meant to decongest people from the hand pump, facilitate the maintenance of social distance and reduce the potential for transmission of Covid-19 virus, as the Chairperson in charge of the cooperative in the first year of the pandemic puts it:

> *"These are crisis times, and we have to respond by doing the unthinkable, to allow irrigation water to be used for domestic purposes as a way of protecting the community and complying with lockdown regulations. I appeal to every one of us not to abuse the arrangement; no water from here [irrigation scheme] will be used for brick-making and I encourage people not to continue to congest at the hand pump."*[10]

Although there were now more water points for domestic use, not every member of the community had equal access to all the water points. Access to the irrigation infrastructure by non-members of the irrigation scheme was contingent on paying a nominal monthly fee of ZIM$50, which was, at the time, approximately equivalent to US$5 at the official bank rate. The fee covered electricity for pumping the water to the irrigation scheme. However, the same pumping times were maintained suggesting this change did not

result in more water being pumped but more income to the irrigation scheme. The members of the irrigation scheme did not need to pay the fee as they would have paid a monthly fee of US$5 for electricity to pump irrigation water. By making water in the irrigation scheme accessible for domestic purposes, the community increased the water points and access to water for domestic use. This had an effect of decongesting the pressure at the hand pump as one villager retorted:

> "*I prefer the water from the hand (bush) pump than from the irrigation scheme because I am just used to it. Also, these days there are no more queues and congestion at the bush pump, so I can as well water my cattle and goats without pressure from the other villagers*."[11]

The adapted use of irrigation infrastructure for irrigation and domestic purposes remained in place. However, the situation changed when the bush pump broke down as discussed in the next section.

THE EVERYDAY STATE, SOCIAL RELATIONS AND HUMAN RIGHT TO WATER

In the winter of 2020, in the midst of a lockdown, the bush pump, which is mainly used by women, broke down. The irrigation scheme became the only public source of water for domestic use and irrigation. The bush pump committee was finding it difficult to explore the usual government channels for the repair and maintenance of the bush pump. As the female Chairperson of the committee in charge of maintaining the bush pump highlighted:

> "*With the lockdown in place, we are stuck. It is difficult for us to call someone from the District Development Fund to come and repair the borehole and we are not allowed to do repairs without their knowledge. The broken part needs to be welded on, and we do not have the equipment for that. It is only found in town, and the other day I was turned back from getting into town because I did not have a letter to exempt me from the restrictions on movement into town*".[12]

There was no provision for the chairperson to get exemption letters without getting into town and her work was not considered essential within the lockdown policies even though she provided essential services to her community. Also, being a woman without money and less bargain power, her way past the roadblock into town made her efforts to facilitate access to water nearly impossible.

The consequences of a broken-down bush pump were unevenly felt. Non-members of the irrigation scheme who had not paid a fee for electricity were left stranded and without access to safe water. Also, the burden for acquiring water under such circumstances remained on women. They could not get water from the irrigation scheme, particularly the first two days after the bush pump had broken down. However, after a few days, the water reserves at home were depleted, and people started finding other ways of securing their access to water, as one of the non-members explained:

> *"I did not pay because I felt it was not necessary with the bush pump functioning. Now I get water through my in-laws [influential in the irrigation scheme], they fetch on our behalf [from the irrigation hydrants], and we collect from their home."*[13]

Although some non-members chose not to pay and could afford this as they relied on kinship relations, others did not have the money to pay nor such relations. These socially embedded[14] yet partial water deals founded on kinship soon became a subject for discussion in the cooperative. An ad-hoc meeting to discuss the new water situation was called. At the meeting, it was agreed that those who had not paid for the electricity would temporarily get access to water and pay up their dues. This was arrived at after a heated debate between members of the irrigation scheme without relatives outside the cooperative and those with relatives who were not members of the irrigation scheme. One of the women responsible for water allocation in the irrigation scheme and with relatives who were not members of the irrigation scheme advocated for a human right to water, saying that:

> "*Everyone is entitled to water, and if the government gets to know you are denying other people access to water for domestic use, you will be jailed.*"[15]

It is noteworthy that this view to human rights to water carried the day to institute equitable access to water during the Covid-19 period. However, the woman did not refer to the article specifically as it is written in the National Constitution of Zimbabwe, Section 77: *Every person has the right to (a) safe, clean and potable water*. Therefore, she draws the legitimacy of her claim on the imagined state, because even though the right to water is in the constitution, it has never been acted upon by the government despite the insistence of the civil society groups. This shows how the everyday state emerges through this reference to other state-like sources, real and

imagined. Also, most of the committee members agreed with her because she referred to the government, which is almost synonymous with the ruling party. The ruling party has been very forceful and coercive in other aspects of life including agricultural and water programs – or periods of time around elections – and therefore very powerful source of legitimacy, even if imagined (Shonhe, 2018, 2022). The legitimacy of claims of water as a human right may be multifaceted; used as a political weapon by the state and a tool for resistance by the community members (see also Cleaver, 1995).

At the end of the meeting, a resolution was reached to expedite the repair of the hand pump for domestic water use. In absence of personnel from the District Development Fund to carry out the repairs, the work had to be done through the cooperation between the irrigation committee, hand pump committee and village heads. In the arrangement, the village heads were to collect money from villagers for the spare parts needed for the repairs, the irrigation committee was to mobilise people trained in borehole repair to do the repairs, and the hand pump committee provided other tools and food for those doing the repair work. These committees previously operated separately with only minimum interaction. However, they came together to draw on their collective resources and various authorities to pragmatically deal with the issue they faced (see also Cleaver, Whaley, & Mwathunga, 2021). As one of the farmers involved in the repair works explained: *"We only need one day to fabricate the broken part, and I will need eight people to work with me on repairing the borehole for free. We have to help each other through this crisis."*[16] These joint efforts and new alliances show how the farmers became bricoleurs, not only in terms of blurring the boundaries of once separate institutional arrangements but also in terms tinkering with the materiality of the infrastructure: they had to piece together the worn-out metal parts with other scrap rods left from previous repairs. The farmers even had to negotiate and utilise artisanal gold miners who were doing their illegal mining activities in the area. The artisanal miners had the machines and the appropriate rods to fabricate the broken parts. It took two days for the hand pump to function again.

However, these collective efforts were not without consequences. By seeking help from the artisanal miners, the water use was also extended for mining purposes. Before this marriage of convenience, the artisanal miners were not allowed to use water from the hand pump as the community did not want potential contamination of the domestic water source by mercury – a highly toxic heavy metal – used for the densification of gold. The artisanal miners now had a claim to the use of the hand pump for their mining activities, creating property rights based on their investments in repairing it. The absence of the District Development Fund during the Covid-19 opened up other avenues for solving water challenges, yet also further exposing the community to other challenges, in this case potential pollution of their aquifer.

These examples show how the fragmentation of the state, in this case increased by the pandemic, opens up spaces for unusual alliances to emerge and creates room for unexpected actors to intervene, yet also for new problems to arise for the rural communities. Whether these arrangements of cooperation between different groups of people will continue beyond Covid-19 is yet to be seen. A year after the irrigation infrastructure started to be used for domestic purposes as well, resistance against this shared system became stronger. One farmer, who used to be a committee member, complained:

> *"The hydrants are broken down, and the opening handles are being stolen from the irrigation scheme, and those who are not members of the irrigation scheme are responsible because they do not care for the irrigation scheme and they have nothing to lose."*[17]

At that point, the current Chairperson of the irrigation scheme hinted that the multiple uses of the water infrastructure should end in order to protect the irrigation scheme from the irresponsible use by non-members. He also argued the multiple users of the water made it difficult to monitor and control wastage of water as some – especially children – occasionally leave the water running out of the hydrants. During a meeting he stated that:

> *"We thought this pandemic was going to be a temporary situation, and it is the new normal, and we cannot continue in a crisis mode; let us accept this is the situation and continue like it [covid-19] is not here."*[18]

In early 2022, the use of the irrigation infrastructure for domestic purposes has indeed been banished. Where before everyone could enter the command area of the irrigation scheme freely, now three gates to the irrigation scheme have been closed and only two entrances are open. According to the irrigation committee this was necessary to monitor and control entrance into the irrigation scheme to stifle fetching irrigation water for domestic purposes.

CHANGE IN TURBULENT TIMES AND THE INTERPRETATION OF RULES

In some literature it has been argued that crisis periods are fertile grounds for institutional reform and change (Boin & Hart, 2003). However, our empirical evidence does not suggest a simple linear relationship or predictable outcome, but rather shows a complex interplay of unlikely actors, authority and legitimacy, including the absent state.

CHANGE FOR CONVENIENCE

The management of the Rufaro Irrigation Scheme has been a contentious issue that pre-dates this research (2019). At the beginning of this research, the elections to the seven-member committee were overdue by five years. This was because *"the committee did not have money to hire an auditor to carry out an audit; a prerequisite for the elections"*.[19] The government, which historically provided such services, has no capacity and resources to offer them, which was the reason the last attempts to hold the elections failed. The irrigation committee continued at the helm of the cooperative with some commenting positively *"that despite being overdue, the committee was still responsive to the needs and progression of the cooperative. They are still accountable and to a certain extent transparent"*.[20] The secretary of the cooperative also insinuated that they represent the social beliefs of the people and uphold the socially embedded arrangements for effective management of the irrigation cooperative (Chitata et al., 2022). However, there are a few who, at some moments, felt the committee was unfair and labelled the committee as 'robbers' due to partial application of rules around debt payment (Chitata et al., 2021). Amongst the disgruntled members of the cooperative were some of the younger generation who felt the old were supposed to pave the way for the young to lead in the cooperative committee.

With the lockdowns in place, the likelihood of holding elections for a new irrigation committee was barely possible for two main reasons: first, arranging for the audit was still a challenge and second, the administrators of the elections (Ministry of Women Affairs, Community, Small and Medium Enterprises) could not put themselves and farmers at the risk of infection or spreading Covid-19. Furthermore, the election administrators felt *"the irrigation committee was still legitimate and their leadership accepted by the majority"*.[21]

This view was in sharp contrast to the view of the agricultural extension officer responsible for Rufaro irrigation scheme. She felt the irrigation committee had overstayed, was rigid and not serving the interests of government in irrigated winter wheat production. The winter wheat programme was a priority for the government as indicated by the framing of the Covid-19 exemptions that allowed "*the conduct of agricultural activities on farms, including in particular the planting of any winter season crops….*" (SI 86 of 2020: 459). A case in point was when the irrigation committee resisted the push to increase the area under wheat under the Government-sponsored Command Agriculture Programme. The refusal by the irrigation committee meant the extension officer could not reach her assigned targets for the area under wheat irrigation.

In November 2020, after the winter wheat season, the agricultural extension officer responsible for the Rufaro Irrigation Scheme called for an elective meeting. She teamed up with two other agricultural extension officers working in the nearby areas to administer the election of the new executive. At the election meeting, the extension officers announced that the then irrigation committee was duly dissolved and none of the members of the committee would be eligible for re-election. This was despite the by-laws allowing for re-elections of the incumbents. The presence of the other agricultural extension workers was used as validation of the election and legitimacy of the elected committee. The Covid-19 pandemic facilitated the opportunity, space and conditions for the agricultural extension officers to 'usurp' the authority to administer elections for the irrigation committee as well as effecting a change in the leadership of the irrigation scheme. It can be argued that the elections and the leadership change would have eventually taken place at some point even without Covid-19. However, it should be noted that the bureaucratic procedures and the responsible actors were eliminated from the process, due to Covid-19. This facilitated change which otherwise might not have happened-at least at that time. The source of authority and legitimacy for such actions were drawn from the fact that they were working for the government and thus, had the right to intervene in a government registered cooperative.

This shows how in times of crisis pockets of spaces emerge for different actors to assume and usurp authority or extend their mandates beyond their official duties as result of fragmentation. The committee which was forced to step down adamantly claim they were removed against procedures as the former secretary narrated:

> *"The elections were overdue, but were eventually going to hold them after the annual general meeting. The majority of the irrigators did not attend save for those who knew outside the official communication channels. Also, they are not the ones who administer our elections but we could not do anything since they are from government. We were surprised when the*

local extension officer came with other extension officers from the neighbouring wards to conduct elections without notice. In the recent past, we had irreparable differences with the extension officer, which partly explains why she was actively involved in removing us".[22]

In the absence of the legitimate election administrators and under disguise of Covid-19, a new committee composed of people who easily collaborate with the extension worker – was elected. The new committee is composed of five men and two women. Amongst the members, there is one pioneer of the cooperative; an 80-year-old man. Having a pioneer in the committee seemingly gives the committee a certain level of legitimacy and acceptability among the Rufaro Cooperative members. This practical norm co-exists with the democratic provisions in the by-laws. Two of the members, the chairperson and treasurer, are middle-aged males employed by the government, one with a senior position in government and the other working in the military, respectively. These two are only weekend residents of the Rufaro community as they work in the city yet they hold positions in the irrigation committee that would require more permanent presence to understand the everyday struggles of the irrigators. Generally, the committee is composed of the younger generation who have attained middle to high education levels. This is in stark contrast to the removed irrigation committee which was composed of five pioneers of the irrigation scheme and two non-pioneers. All the previous committee members were not employed elsewhere, attained no to low education level and were full residents[23] of the Rufaro area. However, the two committees maintained the gender imbalance. This shows that Covid-19 provided an additional arena in which unequal power relationships manifested themselves and were perpetuated (see also Leonardelli et al., 2021; Mukherjee & Pahan, 2021). Also, this was a reflection of the historical gender imbalance dating back from the establishment of the cooperative (Chitata et al., 2021) as crystallised in the by-laws.[24]

This change in the irrigation committee can be viewed as a successful practice of democratic tenets of the irrigation scheme. However, the change to the irrigation committee was more in the interest of the agricultural extension officer than to the irrigation members. In particular, having fellow government workers holding influential positions in the irrigation committee was good for the extension officer as they would supposedly have a shared understanding on government demands. The change was also associated with mixed outcomes and changes in the operations and management of the irrigation scheme as discussed in the next section.

OPEN SPACE FOR INTERPRETATION AND SUBJECTIVITY

From the beginning of the Covid-19 pandemic up to November 2020, the then irrigation committee continued to hold monthly meetings. When the new committee took over in the midst of the pandemic they momentarily continued with the precedent set by the former committee by holding monthly general and ad-hoc meetings. However, in most cases, these meetings were held during weekends. This was to accommodate the two working members to be able to attend and chair the meetings. After four months the monthly and ad-hoc meetings stopped being organised. After five months without a single meeting to report on the finances and planning, the cooperative members were agitating for a meeting without success. They then arranged a meeting themselves and alerted the committee on the date and time. In response, the chairperson of the committee, with the help of the police and siting Covid-19 regulations, dispersed the gathered members of the cooperative as narrated by a disgruntled cooperative member:

"This was our attempt to force them [committee members] to come, but they have talked to the police to disperse us, citing we are not supposed to congregate; it is against the lockdown guidelines. We do not know what is happening with this committee. Actually, there is no committee; only two people are running this committee, and the other four have resigned and the old man has been sick for some time now. We know one of the committee members resigned because he was transferred to work far from the irrigation scheme. Since the pandemic started, we have continued meeting, and we are not sure what is different now. We also wanted to have answers as to why elected members are resigning 'en masse' and why they are making decisions without consultations."[25]

Not having meetings any longer caused anxiety of what was going on as the cooperative members had a history of being fleeced of their money whenever 'educated' people were leading the cooperative (Chitata et al., 2021). On the other hand, the chairperson and vice-chairperson creatively interpreted the Covid-19 regulations. They argued that in the absence of a clearance from government all meetings were banned and/or restricted to two people. Also, they argued that the exemption for agricultural activities was explicitly given to government-employed workers and not extended to the farmers. This meant that the farmers could only meet if the government-employed extension officer wanted to address them and not meet on their own as

farmers. In the absence of the meetings, the chairperson and the vice-chairperson unilaterally refilled the treasurer's position without the knowledge and approval of the cooperative members. The elected treasurer, a serving member of the military, had resigned after he was transferred to a remote workstation which made weekend visits nearly impossible. The new chairperson highlighted that *"I am acting within the Covid-19 lockdown guidelines and appointing a new treasurer to* allow *the committee to continue functioning under the current crisis should not be criminalised*".[26]

In the absence of the monthly and ad-hoc meetings, those remaining in the irrigation committee also made other unilateral decisions, which affected the cooperative members. Amongst others, this led to poor planning for the winter wheat season. Under 'normal' circumstances – that is, without Covid-19- the farmers would have saved up from the sale of tomatoes, vegetables and wheat from the previous season. However, this was not possible because of the closed markets. With such a financial burden, farmers were hoping to get assistance through the Command Agriculture Programme;[27] yet the usual meetings to decide the hectarage and other modalities was not held. The majority of farmers were of the opinion to increase the area under wheat so that they could store it without much problem compared to horticultural crops which rotted on the field the previous season. Also, the government, although not paying enough or in time, provided a ready market for the wheat through the Grain Marketing Board. As one of the farmers raised: *"In this Covid-19 period it is pointless to grow horticultural crops, we hoped to have the whole area under wheat which we can store for longer periods without any loss, but the committee had their own ideas*".[28]

The 'committee' based their decision on the high interest rate charged by the Bank to which they had to pay off their loan for the agricultural inputs they would receive. However, the farmers and members of the former committee argued it was not any different from the previous years. Also, there was no longer pressure from the extension officer because the command winter wheat programme had changed from being entirely administered by the government to being administered by the Commercial Bank of Zimbabwe.

As a result of change in the leadership and subsequent autocratic administration of the cooperative, some farmers either failed to plant the wheat or planted too late into the season. This was more pronounced amongst the poorly resourced farmers who could not make alternative arrangements. Some farmers had to use seeds retained from the previous season's harvest – which is not ideal if not planned ahead because the seeds require careful selection. One young farmer had this to say about the situation;

> *"I did not plant wheat this winter because I did not have the seed, and had not reserved wheat from the last harvest. We had hoped the committee would call the people to decide and map the way forward, but they just let everyone down, just like that*".[29]

The impact of the disrupted wheat season extended to the intricate social relations and dependencies. As farmers who had borrowed wheat from their neighbours, kith and kin on the promise of returning the wheat the following season found themselves in a difficult position. As highlighted by one of the affected female farmers, they could not honour their pledge to return the wheat they had borrowed from their neighbours and relatives:

> *"I borrowed two buckets of wheat (40 kgs) from last season with the agreement to return it after this winter season but I did not plant so because I did not have the [other] inputs. Thus, there is no harvest and nothing to return to my good neighbour who only managed to plant half of what she planted last season."*[30]

Although not being able to plant or crop failure happens more often due to other reasons (e.g. drought, pump failure, pests), in this case, it is a result of institutional decay in the fragmented pockets that emerged during the Covid-19 pandemic. Compared to the last winter season – the first winter of Covid-19- the command area under wheat crop had reduced from fifteen to nine hectares.

CONCLUSIONS

In this article, we mobilise the concept of fragmented authoritarianism, the everyday state and practical norms to show just how processes of bricolage shape institutional functioning during a complex, multifaceted and prolonged crisis, the Covid-19 pandemic. The concepts have helped us think with our empirical data to understand what happens to localised resource governance arrangements in times of crisis. Our empirical evidence shows that in these circumstances institutions change in fuzzy and ambiguous ways, with mixed and non-linear outcomes. People draw on different sources of authority and legitimacy in shaping and adapting governance arrangements. The evidence drawn from the Rufaro case shows how fragmentation creates space for bricolaged arrangements and for different actors and alliances to step up. The case also shows how practical norms become an important resource for bricolage that facilitates creative ways to cope with a crisis. Based on this analysis, we conclude that the crisis generates institutional

transformations including institutional degeneration with implications for access to groundwater and other primary resources for production, and for representation**.** This nuance illuminates the working of institutions in crisis periods beyond the near 'romantic' notion of resilience and popular assumption that a crisis offers a window of opportunity for (progressive) change (Boin & Hart, 2003). The Rufaro case troubles the notion that institutions are adapted in linear ways to meet the challenges, and generates the insight that such adaptations may create even bigger challenges for the farmers who already struggled to get ends meet.

Our analysis in this paper is informed by a unique field experience in which the first author could continue data collection at the peak of the pandemic. Unlike many researchers whose access to field sites was often curtailed by Covid-19 lockdown and travel restrictions, this research is informed by data collected ethnographically before and during the pandemic. This allowed us to see the institutional changes and arrangements that may not be visible to researchers who engage with the before- and after-dynamics. The lengthy immersion in a community during a crisis raises two fundamental questions. The first is an ethical question of what does it mean for understanding and recognising opportunities for change. The second is a methodological question about how to study crises, indeed how to stay ''with the trouble'' (Haraway, 2016) –especially when it is associated with health risks- in order to shed more light on the processes at stake that are not (easily) captured in studies done pre- and post- the crisis.

Based on the one particular case of the Rufaro Irrigation Scheme in Zimbabwe, we have shown the complexity and the many ways of adapting and not adapting to the crisis. The notion of institutional resilience in times of crisis simply does not align with empirical observations in this particular case. These findings have significant implications for understanding the functioning of institutions governing groundwater and other common pool resources. Therefore, we end this paper by making a plea for more empirical research that engages with critical institutional theory to understand governance processes during crises.

NOTES

1 Transform(ation) in this paper refers to institutional changes that are deemed positive/desirable to the operation and functioning of institutions.

2 see Cleaver and Whaley 2018 for an account of how critical institutionalism has evolved (and diverged from) commons scholarship.

3 Membership to the cooperative at recruitment was exclusively for men who were above eighteen years of age. Women were only allowed to be members through nomination by a male member who was incapacitated to work or deceased.

4 The government and the ruling party of ZANU-PF, cannot be easily separated in the context of Zimbabwe as they act and operate fluidly and the democratic basis for the ruling party to be in charge of the government can be questioned (Chipato, Wang, Zuo, & Mudimu, 2020).

5 The veterans of the liberation war were paid a gratuity of ZWD50 000 each and a monthly allowance of USD 2 000 (Maclean, 2002).

6 The war in the Democratic Republic of Congo is reported to have costed the government of Zimbabwe to a tune of USD 6 billion (Mhlanga & Ndhlovu, 2021).

7 For more detail on the Zimbabwe bush pump see de Laet and Mol (2000).

8 At least forty people relocated to Rufaro during the Covid-19 period and also at least three dead bodies were brought from the cities and or South Africa for burial after Covid-19 related complications.

9 F25.

10 F25.

11 F34.

12 F27.

13 F36.

14 These deals are common amongst Zimbabweans, for they have learned to live by and utilise their socially embedded networks in the more than 20 years of economic and political crises (see also Scoones, 2020).

15 F22.

16 F3.

17 F1.

18 F36.

19 F25.

20 F14.

21 GO1.

22 F1.

23 Full residents refers to having a home in the Rufaro area as the only place of, and permanent, residency.

24 The bylaws of the Rufaro cooperative do not mention gender equality or gender at all.

25 F1.

26 F39.

27 Command Agriculture Programme is an input facility scheme from the government which is now administered by the Commercial Bank of Zimbabwe, where farmers are provided with inputs like seed, fertilisers and chemicals on the understanding that they will pay back by delivering to the Grain Marketing Board their wheat of equivalent value to the supplied inputs.

28 F32.

29 F6.

30 F34.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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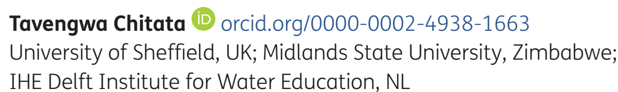

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