



Urban Governance and Climate Resilience: A Comparative Study of Water Management Policies in Bengaluru and Cape Town

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Abstract

This paper looks at water management and climate safety in two cities, Bengaluru in India and Cape Town in South Africa. As we all know, water problem is becoming serious in many cities. These two places show different stories. In our country, Bengaluru is facing water trouble for a long time. Fast city growth, broken systems, and poor planning are big reasons. Cape Town, on the other side, faced a sudden water crisis because of heavy drought. This study uses a simple system idea to understand how people, government, nature, and technology work together in both cities. The findings are interesting. In Bengaluru, weak government systems have pushed citizens to take action on their own. This is commonly seen in Indian people, where local groups try to solve problems when systems fail. In Cape Town, the government acted fast and avoided a complete water shutdown, but some policies affected poor people more. Even though the problems were different, one common point comes out clearly. When governments focus only on technical solutions or emergency steps and ignore fairness, long-term water safety becomes weak. This paper tries to give simple lessons for better and fair water planning in cities like ours.

Keywords; Urban Governance, Climate Resilience, Water Scarcity, Bengaluru, Cape Town, Policy Comparison

Introduction

As we all know, the 21st century is facing many big problems together. Fast city growth, climate change, and pressure on limited natural resources are happening at the same time. One major issue coming out of this is water management in cities. In our country and also across the world, cities are struggling to balance water supply and water need. Population is increasing, rainfall pattern is changing, and droughts are becoming more common. Studies are saying that by 2050, city water demand may increase a lot, almost double. This means many people living in cities may face regular water shortage. Because of this, it becomes very important to understand how city

governments plan and manage water in a changing climate. This paper talks about two cities, Bengaluru in India and Cape Town in South Africa, which faced serious water problems in recent times. Bengaluru is often mentioned globally as a city at high risk of running out of water, next only to Cape Town. Still, both cities faced different kinds of crisis. Bengaluru's water problem is slow and long-term. It is mainly due to unplanned city growth, poor water systems, and damage to lakes and environment over many years. Cape Town's problem was sudden. It faced a strong drought for many years and came close to "Day Zero", when taps could have stopped completely. So even though both cities suffered, the reasons were not the same. Because the

problems were different, the government response was also different. Bengaluru's long water crisis shows weak coordination between many authorities, money problems in water supply bodies, and poor control over environment rules. This is commonly seen in Indian cities where many departments work separately. Cape Town's crisis showed another weakness. The city depended too much on one type of water source and was not ready for extreme climate change. But the fear of Day Zero pushed the government to take strict and fast decisions from the top. This type of control may not work in Bengaluru's situation. This study mainly tries to understand how different styles of city governance affect water safety and fairness. By comparing these two cities, this paper hopes to share simple lessons for other cities that are facing uncertain water future.

Literature Review

As we all know, urban water problems are not simple and they touch many areas at the same time. This topic sits between city governance, climate change issues, and system thinking. In this study, ideas from all these areas are brought together to understand water problems in cities like Bengaluru and Cape Town. Water governance has become very important because climate change and rising demand are creating water stress everywhere. It is not only about what the government does. It also includes how many actors work together, like state bodies, private companies, and common people. In our country, this mix is very commonly seen. Water governance also involves rules, power relations, and decision methods. When governance works well, it helps turn technical systems into fair and steady water supply. One key idea here is the right to water. It means every person should get safe and affordable water, and the state has a duty to ensure this. Another important idea used in this study is resilience. Resilience helps us understand how cities handle risk and uncertainty. Climate change has made

this more serious. According to global climate reports, resilience means the ability of social, economic, and environmental systems to face shocks and still continue. Earlier, resilience only meant going back to normal after a problem. Later, it also included the ability to absorb shocks. Now, the focus is more on learning and changing over time. This study follows that idea. It looks at how cities slowly adjust and improve when problems keep coming. A big part of this is adaptive capacity. This means how well institutions and people can change their plans when new problems or information comes. Some city frameworks help cities check their water strength step by step, from understanding the system to improving it over time. To explain water problems better, this study treats city water systems as connected social, natural, and technical systems. All three are linked. People, water sources, and pipes cannot be seen separately. This is very true in cities in our country. Different groups see water issues in different ways, and their actions affect each other. Because of this, solutions like nature-based methods are not always easy to apply. They need proper coordination. Finally, this study focuses on two main governance ideas. One is working at many levels together, from top government to local communities. The other is social fairness. Water policies affect people differently, especially weaker groups. By looking at Bengaluru and Cape Town, this study tries to show how gaps in governance can reduce long-term water safety and fairness in cities.

Methodology

As we all know, studying city water problems needs a deep and careful way of looking. In this study, a qualitative and comparative case study method is used to understand water governance and climate issues in Bengaluru and Cape Town. This method helps to see real situations clearly and in detail. It is useful when social problems are complex and not the same everywhere.

Bengaluru in India and Cape Town in South Africa are chosen because both are big cities in the Global South and both faced serious water problems in recent times. These crises were also widely discussed in public. But the type of problem was not the same. Bengaluru has been facing water trouble for many years. It is slow and ongoing, mostly because of unplanned growth and weak systems, which is commonly seen in Indian cities. Cape Town faced a sudden shock. It was due to a very severe drought and came quickly. This clear difference helps to compare how different governments and systems react when water stress comes in different forms.

A Framework for Analyzing Urban Water Resilience

As we all know, when we compare two cities, we need a clear way to look at things. In this paper, a simple multi-side framework is used to compare Bengaluru and Cape Town. It is based on ideas of city governance, climate strength, and the SETS view. In easy words, it looks at how water is managed, how cities handle climate problems, and how people, nature, and systems are connected. Water governance here does not mean only government work. In our country, it is commonly seen that many people are involved, like state offices, private companies, and local groups. All of them play some role in water use, pipes, supply, and daily service. When this coordination is weak, problems increase. Climate resilience means how a city adjusts when shocks come, like drought or water shortage. This study focuses more on learning and changing over time, not just going back to old ways. Cities need to adapt slowly, based on new situations and feedback from people. The SETS idea helps to see water not just as a technical issue, but as something linked with society, environment, and infrastructure. This is important because engineers, officials, and common people all see water in different ways. Two main points are stressed here. One is multi-level governance, where top decisions and local voices

must work together. The other is social equity. Policies affect people differently, which is commonly seen in Indian people also. Sometimes, strong technical solutions can harm poorer groups more. Cape Town shows this clearly. The city saved itself from Day Zero, but higher water charges and removal of free water affected low-income families badly. At the same time, rich households made private arrangements, which weakens the public system. So finally, a city may look strong, but weaker people suffer more. True resilience should always ask one question. Resilient for whom?

Divergent Crises, Converging Challenges

As we all know, when we compare water problems in Bengaluru and Cape Town, we can clearly see how different starting situations create very different responses. One city is facing a slow and long problem, while the other faced a sudden shock. Still, both cities show similar issues in the end, like inequality, public involvement, and the limits of only technical solutions. Bengaluru's water problem did not come in one day. It is a long story of poor planning and weak control over city growth, which is commonly seen in many Indian cities. Because of this, the response is also scattered. Government projects run on one side, and on the other side citizens step in, trying to manage lakes, water use, and awareness, many times arguing with officials. Cape Town's case is very different. There, the danger of "Day Zero" was very close, so the government acted fast and strongly. Rules were strict, and people followed because the fear was real. Such action would be very hard to imagine in Bengaluru. Policy focus also shows this difference. Bengaluru talks about rainwater harvesting and lake revival, but still depends a lot on faraway water sources and private tankers. Cape Town first reduced water use strongly, and later moved towards costly new water sources like desalination. Public role also changes in both places. In Bengaluru, people are active and

involved daily. In Cape Town, people reacted only when the crisis message came from the top. Still, one common issue remains. Equity. In Bengaluru, poor and outer areas struggle every day for water and pay more for less. In Cape Town, policies during the crisis made life harder for low-income groups, while richer people moved to private options. So finally, both cities show that water crisis is not only about water, but also about fairness and people.

Discussion and Policy Implications for the Global South

As we all know, when we look at Bengaluru and Cape Town together, many useful lessons come out for other cities in the Global South. Both cities show that only building pipes, dams, or big projects is not enough. Governance matters a lot. People participation, fairness, and flexible planning are equally important. Cape Town handled the emergency well, but did not fully think about poor people, which created problems later. Bengaluru has very active citizens, which is commonly seen in Indian people, but the system does not properly support or recognise their work. In both cases, this gap in governance weakens long-term water safety. These two cities also help us understand the debate between reducing water use and increasing water supply. Cape Town showed that strict control on water use can work very fast in a crisis. But after the crisis, the focus again moved to costly supply projects, which governments often prefer. Bengaluru shows the other side. It talks a lot about rainwater harvesting and lake revival, but big issues like water loss, leakages, and fast city growth are still not solved. So results remain limited. A strong water plan should mix both ideas. Use water wisely, and also plan new sources carefully. In the end, both cities are standing at an important point. Crisis has opened a chance for real change. For Cape Town, the challenge now is to fix its water pricing and funding in a way that is fair for everyone, not only affordable for the rich. For

Bengaluru, the change must come by working closely with citizens, not against them. Local groups should be given proper support, and agencies must be held responsible for service and money management. In both cities, the crisis made hidden problems visible. Now the real test is whether this awareness turns into lasting change or not.

Conclusion

As we all know, when we compare Bengaluru and Cape Town, it becomes clear that water crises can start for different reasons. One grows slowly because of development pressure, and the other comes suddenly due to climate change. But in both cases, the way the city is governed plays a very big role. Bengaluru shows how strong citizen action can be, especially when the government system is weak or divided, which is commonly seen in Indian cities. Cape Town shows how fast decisions and strict control can save a city during a big emergency, but it also brought problems for common people. The main point of this study is simple. Only focusing on technology or emergency rules is not enough. Water systems are connected to society, nature, and infrastructure all together. If one part is ignored, problems come later. For example, high water charges in Cape Town helped save water, but it affected poor people badly. In Bengaluru, damaged lakes and groundwater issues are clearly linked to planning and political failures. This study also adds to the wider discussion on climate change and city planning. It shows that for cities in the Global South, including in our country, resilience is not only about money or machines. It is also about power, decisions, and fairness. Good governance must include people, learn from mistakes, and care about social justice. That is the real lesson. There is still much to study in the future. Cape Town's new water plans need to be observed over time to see if they are fair and useful for all. In Bengaluru, more research is needed on the private water

business and how citizen groups and government can work together in a better way. As many cities may face water shortages in coming years, the experiences of Bengaluru and Cape Town give important learning for building a safer water future.

References

- Enqvist, Johan, and Gina Ziervogel. "Multilevel Governance for Urban Water Resilience in Bengaluru and Cape Town." *Water Resilience: Management and Governance in Times of Change*, edited by Julia Baird and Ryan Plummer, Springer Nature, 2021.
- Hill-Lewis, Geordin. "Cape Town: Lessons from Managing Water Scarcity." *Brookings Institution*, 21 Nov. 2022, www.brookings.edu/articles/cape-town-lessons-from-managing-water-scarcity/.
- Kakos, Alycia. "Cape Town, South Africa." *Sustainable Development Law & Policy*, vol. 18, no. 2, 2018.
- Millington, Nate, and Suraya Scheba. "Day Zero and The Infrastructures of Climate Change: Water Governance, Inequality, and Infrastructural Politics in Cape Town's Water Crisis." *International Journal of Urban and Regional Research*, vol. 45, no. 1, 2021.
- Mukherjee, Subhankar, et al. "Digitalization in Urban Water Governance: A Case Study of Bengaluru and Singapore." *Frontiers in Environmental Science*, vol. 10, 2022.
- Narain, Sunita. "Cities Need Wisdom for Water." *Down To Earth*, 15 Mar. 2018.
- Nhamo, Godwell, and David Chikodzi. "Institutional Complexities Surrounding 'Day Zero' in the City of Cape Town." *Water SA*, vol. 45, no. 3, 2019.
- Prakash, Anjal, et al. "Building Bengaluru's Water Future: Identifying Challenges and a Strategic Blueprint for Sustainable Management." *Water Policy*, vol. 27, no. 9, 2025.
- Raj, Krishna. "Economic Inefficiency and Governance Issues of Urban Water Supply: A Case of Bangalore City." *ISEC Working Paper 307*, Institute for Social and Economic Change, 2013, www.isec.ac.in/wp-content/uploads/2023/07/WP-307-Krishna-Raj.pdf.
- Ramachandra, T.V., and Vinay S. "Decline in Wetlands and Lakes in Bangalore." *National Centre for Good Governance*, 2022.
- Rodina, Lucy. "Urban Water Governance and Resilience in Cape Town." *African Centre for Cities*, University of Cape Town, 2021.
- Savelli, E., et al. "Social Equity in Water Policy: Cape Town's 'Day Zero'." *Frontiers in Water*, vol. 4, 2022.
- Schreiber, Leon. "Keeping the Taps Running: How Cape Town Averted 'Day Zero,' 2017-2018." *Innovations for Successful Societies*, Princeton University, 2019.
- Tyler, Elizabeth, et al. "A Framework for Urban Climate Resilience." *Climate and Development*, vol. 6, no. 4, 2014.
- Visser, Martine, et al. "Private Adaptation and the Regressive Incidence of Public Water Supply." *NBER Working Paper 33468*, National Bureau of Economic Research, 2024.
- Zhang, Xiang, and Bin Pan. "A Resilient City Governance Framework for Urban Disaster Resilience." *Sustainability*, vol. 15, no. 3, 2023.
- Ziervogel, Gina. "Unpacking the Cape Town Drought: Lessons Learned." *African Centre for Cities*, University of Cape Town, 2019.