



**RESEARCH PAPER**

**Leveraging Democratic Innovations to Overcome Sustainability Challenges**

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**ABSTRACT**

In this paper, an attempt has been made to dig out how democratic innovations can be leveraged to overcome sustainability challenges. In contemporary world, Liberal democracies of global north have failed to address the sustainability challenges with the urgency and commitment required for such a mammoth challenge. On the one hand, democratic engagements are important for collective actions, yet on the other hand, many critics state that existing democratic engagements struggle to effectively respond to the sustainability threats. Particularly, this paper focuses on how democratic innovations can address three sustainability challenges including the tendency towards Path Dependent Gradualism, the dynamics of Technocratic Political Dialectic and the restrictions levied by the Cognitive Governance Constraints. We have given examples of participatory budgeting, material participation and deliberative mini-publics to show that these democratic innovations have the capacity to go beyond facilitating the political discussions. These democratic innovations can help reduce polarization, turn sustainability objectives into reality by adopting them in daily practices, and enable the society to forecast alternative future pathways. In addition, we present critical assessment of these democratic innovations. This research recommends that democracy and sustainability can be reconciled by transcending beyond purely technological fixes of sustainability issues and actively placing citizens at the core of every political debate. We have also given various avenues for future research to dive deeper in participatory forms of sustainability governance.

**KEYWORDS** Democratic Innovations, Sustainability Governance, Sustainability Challenges  
**Introduction**

The crises of climate change and biodiversity loss stand in stark contrast to the world's failure to implement effective action. While IPCC 2023 data confirm the severity of our socio-ecological trajectory, liberal democracies are frequently accused of being structurally incapable of responding in a timely manner. Critics point to the inherent sluggishness of administrative and deliberative processes (Lindvall, 2023), leading some to question whether authoritarian power might be necessary to enforce survival (Mittiga, 2021). Empirical data further complicates the issue, as recent studies reveal no clear correlation between types of democratic governance and successful reductions in greenhouse gas emissions (Lindvall & Karlsson, 2023).

A deadlock persists over global environmental challenges especially in present economic conditions. Moreover, there is a rise in populist movements around the world that have shown lack of trust on current Western institutions. Schäfer & Zürn have argued that the currently established democratic norms are not meeting the expectations of the people especially on environmental protection front. Apropos in view, the democratic model needs to address the sustainability challenges as well as the current governance demands of the people.

Philosopher John Dewey said that, "the solution to the ills of democracy is more democracy." Therefore, we suggest that the cure of above-mentioned sustainability challenges is more democracy or in academic terms, democratic innovations. democratic

innovations can be defined as the activities that involve the will of people beyond their involvement in traditional elections (Alexandre-Collier, 2020).

The remaining of this article is designed in such a way as to fill-in the theoretical gap between democratic innovations and sustainability challenges. At first, three structural issues regarding sustainability governance are identified, viz. Path-Dependent Gradualism, The Technocratic-Political Dialectic, and Cognitive Governance Constraints. Second, we examined whether the democratic innovations can resolve the identified sustainability governance challenges. Thirdly, we draw the lessons learnt from our examination, which is whether the democratic innovations can address the sustainability governance challenges, if so, how they can be addressed. Lastly, we discussed the avenues available for future research on this subject.

## Literature Review

Telfer defined sustainability not merely as environmental preservation, but as a commitment to meeting current needs without compromising the ability of future generations to meet theirs (Telfer, 2012). However, currently the humans have placed a lot of stress on the resources of Earth which has resulted in a type of Earth which is operating outside safe space for humanity (Rockström et al., 2009). The health of our planet is fast deteriorating despite all the efforts to save or restore it. (Jänicke & Jörgens, 2023). Apropos in view, we have adopted a definition of sustainability transformation that demands systemic refurbishment. This requires a paradigm shift in technological, social and economic factors (IPBES, 2019). In this paper, we use example of decarbonization but the same analogy applies equally to biodiversity, food systems, and ecosystem governance.

Within this context, we are going to build this paper to argue that the relationship between democracy and sustainability is currently strained by three structural issues: Path Dependent Gradualism, The Technocratic-Political Dialectic, and Cognitive Governance Constraints.

**Path-Dependent Gradualism** Many researchers who are critical of liberal democracies argue that liberal democracies are inherently sluggish. Various researchers including Lindvall (2021) and Marquardt and Lederer (2022) observed that democratic machinery is too slow to match with the urgency required to tackle climate change (Marquardt & Lederer, 2022). Modern democracies generally struggle to deal with issues that require a longer-term solution. They fail to take the required disruptive transformation to deal with sustainability issues and fall in the trap of Path-Dependent Gradualism. Path-Dependent Gradualism means the tendency to adopt / implement reforms gradually in small carefully balanced steps in order to avoid any disruptive transformation of social conflict. Resultantly, the status quo is maintained. Path-Dependent Gradualism is driven by various factors:

- **Mindset of Voters:** Voters are generally not much concerned about distant sustainability issues which are complex as well as impersonal to them (Jacobs & Matthews, 2012).
- **Influence of Powerful Players:** Various powerful actors within various institutions can impact policy decisions including causing delay or haphazardly implementing a policy.
- **Vested Interests:** Various groups have vested interest in implementations of specific policies such as the policy related to fossil-fuel has not been allowed to change due to lobbying by politically strong groups (McCright & Dunlap, 2011).

Hausknost has described this as a "glass ceiling of transformation" that means the democracies which has the capacity of efficiency gains but even then they are incapable of structural shifts (Hausknost & Hammond, 2020). Some critics call for authoritarianism to solve this problem of democracy (Mittiga 2022). However, others argue that the solution lies *deepening* of democracy through better participation (Dryzek & Pickering, 2017).

**The Technocratic-Political Dialectic.** The second challenge is called The Technocratic-Political Dialectic which means the management of sustainability as a technical problem versus taking it as a political problem. Those who take sustainability as a technical problem try to hand over the problem to experts to find its solution through technology/ scientific means. They try to build consensus by treating climate change as a scientific problem. Proponents of taking sustainability as a technical problem opine that it avoids conflict between politicians and a technical solution can be applied to solve sustainability issues (Sovacool, Newell, Carley, & Fanzo, 2022). Contrarily, there is another perspective called the critical debate perspective. It wants that all issues should be politicised so that everyone can give opinion on it as in democracy opinion of majority matters instead of opinion of only experts. Proponents of this perspective say that the sustainability issues such as climate change must be brought into the arena of democratic conflict so that opinion of majority can be taken on it (Machin, 2023). However there is a risk of populism when second perspective is used because some populist narrative building leaders may reject sustainability issues such as climate change problem and can call it an elite project (Fiorino, 2022). Navigating this Technocratic-Political Dialectic a critical governance challenge.

**Cognitive Governance Constraints.** Liberal democracies often pay more attention and importance to existing systems and ignore any policy or future plan which is beyond the current socio-economic order. It is called Cognitive Governance Constraints. Cognitive Governance Constraints can be defined as the failure to foresee a reformist future beyond the current governance system. Currently, the liberal democratic system is dominated by ecomodernist mindset which believes that technology driven green growth and free markets access can solve the sustainability issues without the need to change existing system of society. Our existing political system is locked into giving preference to capitalist logic with carbon-intensive industries; the capacity of our liberal democratic system to imagine a different future is restricted. Solutions of sustainability issues are almost exclusively pondered upon within the bounds of existing system/ status quo. Hence, the political leaders which offer out of the box solution and try to give radically different solutions are marginalized (Marquardt & Nasiritousi, 2022).

## Material and Methods

Democratic innovations mean new innovative methods by which political power is distributed and decisions are taken by the majority of voters. These new innovative means include deliberative mini-publics and participatory budgeting (Smith, 2009). In these interactions various issues are debated and groups with competing / divergent views debate with each other.

Research has shown that these democratic innovative means have the capability to reinvigorate democratic representative system but their ability to strengthen the voices of marginalized and suppressed groups remains contested (Webb, 2013). In terms of sustainability issues, the issue is divided between state-centric and autonomous approaches (Eckersley, 2020).

In this article, three democratic innovations are being focused viz. Deliberative Mini-Publics, Participatory Budgeting, and Material Participation. Their capacity to address the three governance hurdles identified earlier viz. Path-Dependent Gradualism, The Technocratic-Political Dialectic, and Cognitive Governance Constraints is analysed.

### Deliberative Mini-Publics (DMPs)

Deliberative Mini-Publics (DMPs) are a democratic innovative process wherein a group of heterogeneous people is randomly selected to work together on a project and come-up with recommendations or ideas to solve a specific problem including sustainability problem. DMPs allow people to use experts/ evidences and integrate it with their own experiences / knowledge to formulate policy (Smith & Setälä, 2018). The Two most relevant examples of DMPs are the Climate Citizens' Assemblies of Ireland and Denmark, and the

DMPs for setting and finalizing the research projects in Science Co-production such as the Ariadne project in Germany.

- **Addressing Path-Dependent Gradualism:** DMPs can help break the ice and kick start the process of transformation because in a DMP participants are not influenced by the electoral advertisement and lobbying. Resultantly, they produce the recommendations that are ambitious as well practical compared to the existing policy (Lage et al., 2023). Biesenthal Forest project can be quoted as an example wherein researchers and a local DMP collaborated to led the city council to change its timber management policy to a climate-resilient forest strategy. It may be noted that while DMPs can counter the Path-Dependent Gradualism, yet the implementation of the recommendations is dependant on political will.
- **Navigating The Technocratic-Political Dialectic:** DMPs can cover the distance between expert dominance and populist rejection by facilitating engagement with scientists. In the Ariadne project, participants introduced a social criterion into technical energy models; hence, politicized the discussion. Research has shown that DMPs help reduce polarization and increase political knowledge (Grönlund, Herne, & Setälä, 2015).
- **Overcoming Cognitive Governance Constraints:** DMPs can increase the political imagination by proposing radical changes in existing systems/ concepts. For example, in Scotland participants of DMPs recommended foresight methodologies to envision net-zero futures that bureaucratic planning had missed.

### Participatory Budgeting (PB)

Participatory Budgeting (PB) was originated in Porto Alegre, Brazil. PB means a method wherein ordinary public decide how to spend their public money. PB creates a graph (buffer zone) where desirable outcome and the feasible outcome intersect each other. (Sintomer, Herzberg, & Röcke, 2008).

- **Addressing Path-Dependent Gradualism:** PB is free from lobbying of the elite or the vested interest group and usually challenges the status quo by redistributing resources. In Porto Alegre, PB resulted in shifting of budget allocation from rich districts to the poorest districts (Spada & Ryan, 2017).
- **Navigating The Technocratic-Political Dialectic:** In PB, participants have to face the true face of reality and technical details, opportunity costs and trade-offs are discussed before finalizing the allocation of public resources. Participants have to justify their goals vis-a-vis the demanded budget; resultantly, populist rhetoric is often diffused during threadbare critical analysis. It forces the participants to engage with technical details while critically analysing the priorities.
- **Overcoming Cognitive Governance Constraints:** When participants take part in PB, It allows them to bypass the technical engineering solutions and come up with an out of the box, context-specific solution (Cabannes, 2021).

### Material Participation

Material participation (MP) means a movement whereby participants change the society's material flows and production system. This is a democratic innovative approach that focus on redesigning the material flows (food or energy) of everyday life (Schlosberg & Coles, 2016).

- **Addressing Path-Dependent Gradualism:** In MP, participants, frustrated with stalled legislative process, and believe in bringing change with their own hands. MP offers a path to the participants to start using or practicing what they want or believe in. In longer run, the MP will be able to address the issue of Path-Dependent Gradualism as the movement scales outward breaking the clutches of vested interests.

- **Navigating The Technocratic-Political Dialectic:** Practitioners of MP believe that the MP results in re-politicization of the economy (Washick et al. 2015). By taking control of food system of energy production, communities challenge the status quo and corporations with vested interests.
- **Overcoming Cognitive Governance Constraints:** MP nurtures participants to think beyond the grounded imaginations. MP creates concrete visions of the future, moving beyond abstract utopianism. However, grassroots innovation is not inherently progressive, as seen in cases like Germany's far-right settlers using ecological practices for ethno-nationalist goals (Dannemann, 2023). Foregoing in view, it can be stated that not all grassroots innovation is inherently democratic

### Boons and banes of Sustainability Governance

Leveraging democratic innovations in a positive manner can result in a sustainable future. DI can be leveraged to drive sustainability governance transformation at all scales, from lower level to global climate change policy. The analysis of this paper recommends that the panacea to political inertia is more democratic innovations.

These innovations act against the current closed political systems and try to address the sustainability issues by integrating local experience and knowledge with that of those in power. Hence, DIs ensure focus on sustainability governance issues and creates a partnership between the scientist, the public and the policymakers.

- **The Inequality of Participation:** However, the primary risk remains in unequal participation. Co-development is a complex and intensive process that can lead to frustration and exhaustion. Further, issues such as poverty, health related problems, and early parenthood are well-documented impediments to political engagement (Brekke, Fjelstul, Hermansen, & Naurin, 2023). Any Dis which do not address these inequalities tend to exacerbate the exclusions of those whom they try to overcome. Since the environmental crises result in widening of socioeconomic gaps and weakening of political trust, the successful DI must address the underlying structures. Example of French Citizens' Convention on Climate's can be quoted as a DI that established linkage between ecological and social equity(Lindvall, 2023).
- **The Risk of Co-optation:** Co-optation is one of the major risks in success of implementation of Dis. The co-optation can be from the indifference of existing power holders or from the participants of DIs who voting to maintain comforts which is unsustainable in longer run (Marquardt & Lederer, 2022). However, these DIs can still provide much needed democratic space to those excluded from the democratic process. On the other hand, DIs open new avenues for participation. For instance, DMPs engage those who are disaffected and / or with fewer resources; hence, opposing the influence of elitism (Pilet, Bol, Vittori, & Paulis, 2023)

### Results and Discussion

The liberal democracies struggle to address sustainability challenges due to Path-Dependent Gradualism, the Technocratic-Political Dialectic, and Cognitive Governance Constraints. In this context, some scholars only give a bleak trade-off between authoritarian environmentalism or a democratic unsustainable politics. This paper proposes a third way forward, i.e., strengthening engagement *within* the imperfect system (Blühdorn, 2020).

**Table 1**  
**Democratic Innovations and Governance Challenges**

	Deliberative Mini-Publics (DMPs)	Participatory Budgeting (PB)	Material Participation (MP)
Innovative Approach	Democratizes expertise by including citizens in legislative/scientific	Direct participation in the	Collective action on everyday material flows (food, energy);

	processes; exposes value assumptions in climate discourse.	allocation of financial resources.	redesigning systems as a political act.
Addressing Path-Dependent Gradualism	Informed citizens use democratic legitimacy to pressure "veto players," bypassing institutional inertia.	Breaks existing power structures by allowing direct population involvement in budgetary reforms.	Accelerates change by bypassing vested interests; creates tangible "blueprints" for local adaptation.
Navigating The Technocratic-Political Dialectic	Re-politicizes the moral arguments of science-making; addresses populist misunderstandings of expertise.	Balances technical constraints with democratic justification through transparent budget planning.	Politicizes "everyday" material flows, widening the perception of what counts as "political."
Overcoming Cognitive Governance Constraints	Citizens stretch the scope of inquiry to analyse radical/just scenarios, breaking disciplinary silos.	Inclusion of marginalized voices and extensive deliberation forces a breakthrough in what is considered "feasible."	Situates transformative imaginaries in physical practice; hands-on approaches inspire new visions of change.
Limitations	Unclear if experts genuinely learn from citizens; difficult to embed in formal decision-making; contested public legitimacy.	Risk of capture by resourceful groups; potential for reaching unsustainable decisions.	Opposition from vested interests can severely hinder meaningful impact.

### From Experiments to Systemic Integration

DI's have been opted only at small-scale with limited impact in liberal democracies. To be more effective, DI's must be shifted from the sidelines of the current political system to the made either **complementary** or **integrated** component of liberal democracies.

- **Complementary roles:** Complementary roles are avenues for demonstrative power, expanding the borders of political imagination and changing how formal political institutions function.
- **Integrated roles:** An example of high integrated role was the role of Irish Citizens' Assembly that broke legislative gridlock to liberalize abortion rights (Elkink, Farrell, Marien, Reidy, & Suiter, 2020). However, such integration requires an active mandate from the powerful political system as these processes cannot effectively function in a vacuum.

### The Question of Scale

This paper indicates that DI's are currently most effective at localized level which aligns with polycentric governance theories (Boyd & Juhola, 2015). Local experience enables the participants to apply this experience to specific ecological and material contexts. Although national assemblies are optimal for shaping the broader policy, yet the successful implementation is dependent on local flexibility. Agrawal (2001) has rightly argued that local innovations must be effectively nested into larger structures to prevent higher authorities from undermining community-level solutions.

### Institutional Design and Broader Democracy

The design features in a DI like sortition (random selection of participants) prevent elitist group capture. The risks still exist such as "innovation facades" that restrict participation to a restricted pre-defined topic.

- **Corporatism:** Collaborative multi-stakeholder models such as "Fossil-Free Sweden initiative" is an example of a participatory multi-stakeholder approach which is designed to synchronize efforts of different societal groups to achieve a common goal, i.e., Fossil-Free Sweden. Nevertheless, the multi-stakeholder coordination struggles to

bring radical transformation due to the dominance of industrial incumbents (Nasiritousi & Grimm, 2020).

- **Economic Democracy:** Economic democracy which seek to address systemic economic inequalities requires a fundamental shift toward models like "property-owning democracy." This involves redistributing economic power and control, potentially through cooperative models or participatory budgeting

## Conclusion

This research began by acknowledging the established limitations of liberal democracies in addressing ecological crises, as highlighted by various researchers including Giddens (2009) and Lindvall (2023). This research then proposed that the problems posed by Path-Dependent Gradualism, Technocratic-Political Dialectic, and Cognitive Governance Constraints are not uncontrollable. These problems can be mitigated carefully designing democratic innovations. This research then conclude that democracy and sustainability can be reconciled by transcending beyond purely technological fixes of sustainability issues and actively placing citizens at the core of every political debate/ DIs. DIs must push for wider structural changes that democratize economic control. According to Steinberger (2024), there is a need to reorientate the focus from "profit and growth" to "well-being within planetary boundaries." Climate change is altering the material conditions of political mobilization. This creates a volatile environment that can be utilized either by far-right populists aiming to preserve unsustainable economic systems or by social movements fighting for sustainable governance and economic justice. DIs present offer mechanism to validate the second approach, offering an alternate of authoritarian technocracy and crude populism. However, without a firm commitment to integrating voices of participants of DIs into the into formal economic and political decision-making structures, the potential risk of inefficacy cannot be avoided.

## Recommendations

- a. **The Implementation Gap - Theory vs. Reality.** While numerous democratic innovations offer theoretical solutions to governance failures, their practical application presents significant dilemmas. Therefore, a critical avenue for future research is to move beyond procedural success and rigorously evaluate the material impacts of these innovations, questioning whether these innovations yield substantive outcomes or merely democratize discourse.
- b. **The Ambivalence of Conflict.** Scholars must also re-examine the role of conflict. Contrary to viewing polarization solely as an obstacle in sustainability governance, re-politicization the conflict through DIs can empower marginalized groups by challenging established technocratic consensus. However, this potential is constrained by a global climate of populism and decreasing of trust on institutions. Future research must explore the resilience of democratic innovations in the context of democratic backsliding, asking whether they can function effectively in contexts of rising authoritarianism and deep societal divisions (Hammond, Dryzek, & Pickering, 2020).
- c. **Bursting the Experimental Bubble.** Currently, most DIs are being operated within confines of experimental settings, disconnected from formal state authority. The struggle to institutionalize these practices remains undertheorized. Future research must expand its scope from analysing the aggregation of citizen views to examining systemic interactions with elites, civil servants, and the broader deliberative ecosystem (Lindvall & Karlsson, 2024).

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