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Youth Engagement in Local Sustainable Energy Transition in the Western Balkans: Lessons from the Visegrad Countries

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Abstract

Background: The sustainable energy transition is one of the most complex long-term transformations required to achieve climate neutrality in Europe by 2050. In the Western Balkans, this transition is shaped by coal dependence, weak institutional capacity, high levels of public distrust, youth emigration and uneven environmental awareness. Young people will be among the generations most affected by the long-term outcomes of transition policies, yet their participation in local decision-making processes remains limited, fragmented and often insufficiently institutionalized. This article examines how youth engagement in the local sustainable energy transition can be strengthened in the Western Balkans, drawing on relevant lessons from the Visegrad countries and wider European practices.

Methods: The article applies a policy-oriented critical narrative review and a best-practice analysis. It synthesizes academic literature, policy documents and institutional sources on youth participation, the sustainable energy transition, just transition, local governance and climate awareness in the Western Balkans and the Visegrad countries. The analysis is organized around four themes: institutional mechanisms for youth participation; climate and energy literacy; trust, legitimacy and public acceptance; and socio-economic conditions, including youth emigration and green employment.

Results: The review identifies a systemic participation gap. Young people are expected to support and contribute to the sustainable energy transition, but the institutional, educational and socio-economic conditions for meaningful participation remain weak. Barriers include limited access to information, weak or symbolic youth participation mechanisms, low trust in institutions, insufficient practical skills, economic insecurity, social exclusion and the limited visibility of youth-led initiatives. Visegrad and selected European practices suggest that local-level coordination, participatory mechanisms, civic education, cross-sectoral cooperation and transparent governance can strengthen youth involvement.

Conclusions: Meaningful youth engagement should be treated as a core element of a just and locally legitimate energy transition, not merely as an awareness-raising activity. Local

governments, youth offices, educational institutions, civil society organizations and private-sector actors should develop structured mechanisms for youth participation, link the energy transition to green skills and employment, and create transparent platforms through which young people can influence local sustainability policies. Further country-specific and municipality-level research is needed to better capture youth perspectives and design context-sensitive policy instruments for the Western Balkans.

Keywords: sustainable energy transition; youth participation; local governance; just transition; Western Balkans; Visegrad countries

1. Background

The decarbonization of Europe by 2050 is a strategic objective of the European Union (EU) and represents one of the most far-reaching transformations in global economic and social systems. The initiative was formally articulated in the European Green Deal in 2019 [1], although efforts to reduce environmental pollution within the EU have been ongoing since the early 2000s. As fossil-fuel combustion remains the main source of carbon dioxide emissions, eliminating such emissions by 2050 requires systemic changes in energy production and consumption with significant implications for the economy and society.

The sustainable energy transition has been endorsed by all EU member states and is also expected of candidate countries. Although disagreements persist regarding financing, monitoring, and even the conceptual clarity of the Green Deal [2], the EU maintained its commitment through the COVID-19 pandemic [3]. The energy policy context further evolved during the Russia–Ukraine crisis [4,5] and other complex geopolitical developments [6]. Still, the EU reaffirmed its pathway toward decarbonization through its largest-ever budget for 2021–2027, which prioritizes climate neutrality [7].

Despite this political commitment, the attitudes of individual member states – and particularly those of their citizens – vary widely, raising questions about long-term effectiveness. While the global Sustainable Development Goals have been clearly defined since 2015, citizens remain insufficiently informed about how the transition will affect their daily lives [8]. A lack of public awareness continues to hinder sustainable development efforts across both developed and developing countries [9]. Local communities often reject renewable energy projects due to insufficient information or distrust of the proposed benefits [10]. Fears of job loss in carbon-intensive sectors further intensify resistance [11,12].

Consequently, citizen participation must be continuously strengthened across the EU and candidate countries [13]. Effective policy-making requires consensus among all stakeholders, particularly regarding implementation methods, costs, and financing. Citizens are key actors in multiple roles: (1) as consumers, who are expected to change their energy behaviour; (2) as community members, who are expected to support changes in their local environments; and (3) as employees who are affected by economic restructuring. They expect fairness and positive social outcomes from a transition that will unfold over decades and affect multiple generations [14].

Given its long-term horizon, the sustainable energy transition will primarily affect today's children and young people. For the purposes of this article, youth are understood in line with the dominant European youth-policy framework as persons aged 15–30. The article also acknowledges a broader intergenerational dimension: individuals who were children, adolescents or young adults at the time when the European Green Deal was adopted will spend much of their educational, professional and family lives under the consequences of transition policies adopted today. This distinction allows the article to use a consistent working definition of youth while recognizing the wider intergenerational relevance of the 2050 climate-neutrality objective.

The EU identifies youth as central actors in achieving sustainable development and includes them in many strategic initiatives. Youth engagement is a right guaranteed to EU citizens, yet it remains underutilized [16]. Research shows mixed results regarding youth acceptance of climate and energy policies. A large 2019 survey involving 27,655 EU citizens found that younger individuals express stronger concern about climate change and a greater willingness to adopt pro-climate behaviours than older adults [17]. However, a 2022 survey showed that climate-related awareness among youth in EU candidate states is substantially lower than among their peers in member states [18]. Youth who are better informed tend to support climate-related political agendas and vote accordingly [19]. At the same time, high emigration rates from less developed regions often deprive those areas of young people who could lead the transition locally [20].

This article is designed as a policy-oriented critical narrative review and best-practice analysis. Its main aim is to examine how youth engagement can be strengthened in local sustainable energy transition processes in the Western Balkans, drawing on relevant lessons from the Visegrad countries and wider European experiences. The paper does not provide new primary empirical data; rather, it synthesizes existing academic and policy literature in order to identify key barriers

to youth participation and formulate evidence-informed recommendations for local governments, youth organizations and other stakeholders.

The article is guided by three research questions:

RQ1: What are the main institutional, socio-economic and knowledge-related barriers to meaningful youth engagement in local sustainable energy transition processes in the Western Balkans?

RQ2: Which lessons from Visegrad and selected European practices are relevant and potentially transferable to the Western Balkan context?

RQ3: What policy measures can local governments, youth organizations and civil society actors adopt to strengthen meaningful youth participation in sustainable energy transition governance?

1.1 Conceptual framework: youth engagement, just transition and local sustainable energy governance

Youth engagement in the sustainable energy transition should not be understood solely as consultation or awareness-raising. In policy and governance terms, meaningful youth engagement implies the capacity of young people to access information, deliberate on policy choices, influence decision-making, and participate in the implementation and monitoring of transition-related measures. This distinction is important because participation may remain symbolic or tokenistic when young people are formally invited into consultative processes without having a real influence over policy outcomes. Classic participation theory distinguishes between non-participation, tokenism and citizen power, while youth participation literature emphasizes that meaningful participation requires space, voice, audience and influence [21–23]

This distinction is particularly important in energy-transition governance. Recent research shows that young people are often framed primarily as recipients of energy education rather than as legitimate energy citizens with influence in energy governance, local planning and renewable-energy decision-making [24]. Therefore, youth engagement in the sustainable energy transition should be treated not merely as an educational or awareness-raising task, but as a question of participation, legitimacy and democratic governance.

In the context of the energy transition, youth engagement is closely connected to the concepts of a just transition, energy justice and intergenerational justice. A just transition requires that the social costs and benefits of decarbonization are distributed fairly, particularly in regions dependent on fossil-fuel industries. Energy justice emphasizes not only access to clean and affordable energy, but also distributional justice, recognition justice and procedural justice: the right of affected communities to be included in decisions that shape their energy future [25,26]. Intergenerational justice adds another dimension, since the consequences of current energy and climate policies will be experienced most directly by younger generations.

For policy-oriented participation, meaningful engagement also requires institutionalized pathways through which citizens' inputs can travel across the policy cycle, together with accountability mechanisms showing whether and how those inputs influenced decisions [27]. This is especially relevant at the local level, where youth offices, participatory budgeting, public consultations and digital platforms may remain symbolic unless they are connected to actual planning, budgeting and monitoring processes.

Local sustainable energy governance is therefore not only a technical matter of replacing fossil fuels with renewable sources. It also requires legitimacy, trust, participation and social acceptance. Local communities may resist renewable or low-carbon projects when they perceive them as imposed from above, non-transparent, unfairly distributed or disconnected from local needs. In the Western Balkans, where trust in institutions is often weak and environmental decisions are frequently politicized, the question is not only whether young people support the energy transition in general, but whether they trust the institutions and processes through which specific transition projects are designed and implemented.

This framework allows the article to distinguish between several forms of youth involvement: passive information, consultation, participation in public debate, the co-design of local policies, the monitoring of implementation and contentious forms of engagement such as protest. Such a distinction is particularly relevant for the Western Balkans, where young people may simultaneously support environmental protection and oppose specific projects presented as part of the green transition if they perceive them as extractive, non-transparent, environmentally harmful or socially unjust.

2. Methodology

This study applies a policy-oriented critical narrative review combined with a best-practice analysis. This approach was selected because the available literature on youth engagement in the sustainable energy transition in the Western Balkans is fragmented, uneven across countries and often located at the intersection of academic research, policy reports, institutional documents and grey literature. The objective was therefore not to conduct a systematic review in the strict sense, but to synthesize the most relevant available evidence and translate it into policy-relevant recommendations.

The review focused on three bodies of literature. The first included academic and policy sources on the sustainable energy transition, just transition, citizen participation and public acceptance of renewable energy in Europe. The second focused on the Visegrad countries, with particular attention to local-level governance, regional transition practices, youth attitudes, participatory mechanisms and energy-sector transformation. The third focused on the Western Balkans, with an emphasis on energy dependence, environmental governance, youth participation, climate awareness, institutional trust and barriers to civic engagement.

Sources were identified through academic databases and search engines, including Scopus, Web of Science, Google Scholar and relevant publisher platforms, as well as through institutional and policy repositories of the European Union, the European Parliament, national and regional institutions, and international organizations active in the field of energy transition and youth

policy. The search combined terms such as “youth engagement”, “youth participation”, “energy transition”, “sustainable energy”, “just transition”, “local governance”, “Western Balkans”, “Visegrad countries”, “renewable energy”, “climate awareness”, “participatory governance”, “energy democracy” and “energy justice”.

The review prioritized sources published between 2019 and 2026, reflecting the period following the adoption of the European Green Deal and the acceleration of European climate-neutrality policies. Earlier sources were included where they provided foundational conceptual definitions or relevant regional background. Sources were selected according to the following criteria: relevance to youth participation, the sustainable energy transition or local governance; relevance to the Western Balkan or Visegrad context; credibility of the publication outlet or institution; and usefulness for identifying barriers, transferable practices or policy recommendations.

The best-practice component focused on identifying examples that met at least three criteria: demonstrated relevance to youth or citizen participation; a connection to sustainable energy, climate or local sustainability governance; evidence of institutional anchoring or policy applicability; and potential transferability to Western Balkan local contexts. The Visegrad countries were selected as a comparative reference point because they share certain post-socialist legacies, transition experiences and energy-sector challenges with the Western Balkans, while also offering lessons from earlier European Union membership and longer exposure to European climate and cohesion-policy frameworks. However, the analysis also acknowledges important differences between the two contexts, including European Union membership status, administrative capacity, access to funding, institutional trust and policy implementation capacity.

The analysis was conducted deductively and thematically. The reviewed sources were organized around four analytical categories: (1) institutional mechanisms for youth participation; (2) knowledge, education and climate literacy; (3) trust, legitimacy and public acceptance; and (4) socio-economic conditions, including youth emigration, employment and just-transition concerns. These categories informed the identification of key barriers in the Western Balkan context and the formulation of recommendations for local governments, youth organizations and civil society actors.

The article focuses primarily on five Western Balkan countries covered by the reviewed literature: Albania, Bosnia and Herzegovina, Montenegro, Serbia and North Macedonia. Kosovo is not treated as a separate case due to the limited availability of comparable reviewed material on youth participation and the sustainable energy transition within the scope of this article. This is acknowledged as a limitation, particularly because many European and regional policy frameworks use the WB6 format.

3. Results

3.1 European and Visegrad practices: lessons for youth engagement

This section does not treat European and Visegrad examples as directly transferable models, but as reference points from which context-sensitive lessons may be drawn. The European examples illustrate different mechanisms of youth and citizen participation in sustainability governance, while the Visegrad countries are used as a more proximate comparative framework due to their

post-socialist legacies, experience of European Union accession, fossil-fuel dependence and uneven transition pathways. The analysis therefore focuses not only on what practices exist, but also on the institutional conditions that make them relevant or difficult to transfer to the Western Balkan context.

Green transition processes are shaped by environmental, social, and economic drivers [28]. Across Europe, substantial research has examined the importance of stakeholder engagement in promoting successful sustainability transformation. Several countries have implemented structured mechanisms for involving youth and broader communities in climate and energy-related decision-making.

In Austria, tools such as youth forums, transformation labs, and structured participatory processes have been used to integrate young people into regional sustainability planning. These practices improve climate literacy, enhance social learning, and strengthen youth ownership of sustainability initiatives [29].

In Norway, participatory modelling frameworks have been developed to involve youth directly in designing future energy scenarios. This approach helps young people understand technological trade-offs and increases the inclusivity of national transition processes [30].

In Spain, research demonstrates that youth acceptance of energy transition policies is shaped by both rational considerations (policy effectiveness, cost distribution) and emotional/value-based factors (trust, environmental concern). Understanding these patterns is essential for designing communication and engagement strategies tailored to younger generations [31].

These examples, however, come from countries that differ significantly from the Western Balkans in terms of institutional maturity, civic culture, and economic stability. Therefore, the practices of the Visegrad (V4) countries – which share post-socialist legacies, EU integration pressures, and fossil-fuel dependence – are more directly applicable.

Studies show that sustainability trends in the V4 region gained momentum particularly after the COVID-19 pandemic, with increased emphasis on resilience, technological modernization, and energy security [32,33]. The role of regions and municipalities has proven crucial, with sub-national actors often serving as intermediaries between EU regulations and local implementation [34].

A systematic review of V4 energy-sector research highlights shared decarbonization goals but different national pathways due to varying energy mixes, political priorities, and institutional

constraints [35,36]. Moreover, political coordination within the V4 has weakened since 2014, especially regarding EU enlargement policy, illustrating that transition progress depends heavily on national rather than bloc-level factors [37].

At the country level:

- Hungary has developed transition strategies in industrial centres such as Székesfehérvár, demonstrating the importance of local-level coordination and cooperation among businesses, municipalities, and educational institutions [38].
- Slovakia and Hungary have shown that public policy and sub-national institutions play key roles in ensuring social fairness in just transition processes [39].
- Polish students exhibit an awareness of zero-emission goals, though their support depends on policy transparency and institutional trust [40].
- Across the V4 region, circular economy initiatives and green innovation have contributed to reducing emissions, particularly when supported by strong governance frameworks [41].
- Analyses of sustainable competitiveness reveal that V4 countries with more developed innovation ecosystems achieve better transition outcomes [42].

Finally, although not part of the Visegrad Group, Croatia – a culturally and economically comparable EU member – provides relevant insights. A 2024 survey found that 62% of young people in Croatia do not connect their personal behaviour with climate impacts and are unprepared to adopt sustainable practices [43]. This finding highlights a broader regional challenge.

Taken together, these examples provide useful but not automatically transferable lessons. Their relevance for the Western Balkans depends on local institutional capacity, available funding, trust in public authorities, the strength of youth organizations and the ability of local governments to adapt participatory mechanisms to socio-economic realities on the ground.

3.2 Sustainable energy transition and youth participation in the Western Balkans

The Western Balkans region comprises five countries (Albania, Bosnia and Herzegovina, Montenegro, the Republic of Serbia, and North Macedonia) with a combined population of roughly 17 million. As EU membership candidates, all five are required to adopt and implement extensive reforms across multiple sectors [44]. Among these, the energy sector and environmental quality represent two of the most demanding and interlinked areas of reform [45].

Although the Western Balkan framework is useful for identifying shared regional challenges, the countries covered by this article should not be treated as a homogeneous group. Serbia, Bosnia and Herzegovina and North Macedonia face particularly strong challenges related to coal dependence and just transition in carbon-intensive regions. Montenegro and Albania have different renewable-

energy potentials and different patterns of public debate around energy development. Institutional structures also vary considerably, especially in relation to decentralization, youth policy, environmental governance and the role of civil society. For this reason, this article uses the Western Balkan framework as a regional analytical lens, while recognizing that policy recommendations must be adapted to country-specific and local contexts.

Although a formal regulatory framework has largely been established, implementation remains slow, inconsistent, and insufficiently monitored [46]. Energy systems across the region continue to rely on outdated technologies, and the risk of natural disasters poses additional threats to already fragile infrastructures [47]. Ensuring the security of the energy supply – especially electricity – is widely regarded as a core social concern [48,49]. At the same time, the transition of the energy sector raises the prospect of substantial workforce reductions, particularly in coal-dependent regions.

Paradoxically, the Western Balkans possess substantial energy resources and renewable-energy potential, as well as critical minerals essential for the EU's decarbonization strategy [50]. The region's geographical position also makes it a strategic transit corridor for supplying the EU with non-Russian energy, primarily natural gas [51]. This increases its geopolitical significance and exposure to external political pressures [52]. Figure 1 shows the energy mix of the Western Balkan countries and the EU27 as of 2025, illustrating the most important differences between the two groups.

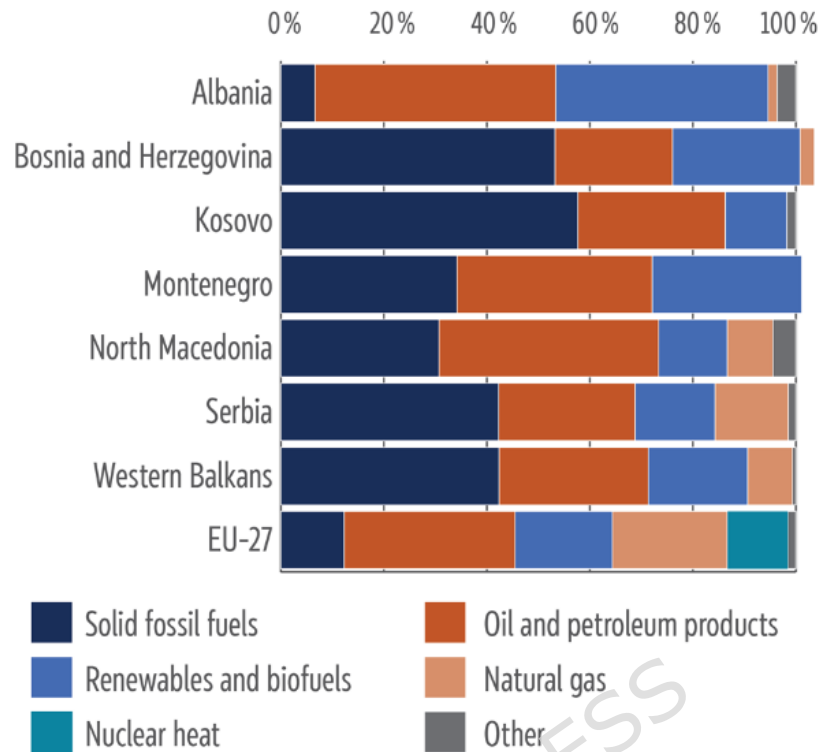


Figure 1. Energy mix of the Western Balkan countries and the EU27

Source: [53] (p.2)

Evidence shows that aligning national strategies with regional and local needs is highly effective in advancing sustainable transition outcomes [54]. Nevertheless, this multi-level approach has not yet been systematically implemented in practice.

Given these structural realities, the Western Balkans stand on the threshold of profound changes. These changes must be socially acceptable and responsive to citizens' expectations—especially those of the youth, who are anticipated to play a leading role in advancing the region's sustainability agenda. Understanding youth attitudes toward climate change, environmental awareness, and the energy transition is therefore a crucial first step in designing effective policies and interventions.

Existing research reveals that only a limited number of studies focus specifically on youth needs and perspectives, and even fewer offer concrete, actionable recommendations.

Youth perspectives vary significantly across the region. A 2023 study involving youth from Serbia, Bosnia and Herzegovina, and North Macedonia showed that participants primarily expressed concern about three Sustainable Development Goals: hunger, healthcare, and poverty; indicating a stronger focus on social issues rather than environmental ones [55].

In Albania, a 2024 study found high levels of youth scepticism regarding the EU accession process and the reforms it entails, including those related to the energy sector. Albanian youth expressed substantial concern about anticipated energy-sector changes [56]. While citizens are aware of the impacts of climate change, they generally lack knowledge about how to influence policymaking [57].

A 2023 survey in Bosnia and Herzegovina reported that one-quarter of young respondents were unfamiliar with the concept of sustainability [58]. A 2022 analysis found that youth hesitated to engage in environmental policy-making due to a lack of information and widespread perceptions of corruption in public institutions [59]. Earlier research from 2021 showed low levels of knowledge regarding energy efficiency and renewable energy, combined with limited interest in environmental participation [60].

In Montenegro, the renewable energy potential is significant, yet implementation has been minimal due to legislative gaps, weak incentive mechanisms, and corruption [61]. Although a 2020 national study indicated strong public support for renewables, real progress has been limited [62]. A 2023 assessment found high levels of climate scepticism among citizens [63].

In Serbia, a 2023 survey revealed a considerable gap between youth awareness of climate change and their willingness to act [64]. While Serbia remains heavily dependent on coal, public opposition to environmentally harmful energy projects has increased [65]. Widespread protests over the construction of small hydropower plants in protected areas illustrate rising public engagement [66].

Lithium extraction – central to EU decarbonization efforts – has become a major controversy in Serbia, triggering large-scale protests [67]. Despite public pressure, Serbian and EU officials continue to promote exploitation in densely populated, agriculturally valuable areas containing significant freshwater reserves [68].

In North Macedonia, a 2024 survey found that students are poorly informed about climate change, or that the available information is inaccurate or insufficient [69]. Persistent institutional limitations, investment uncertainty, and weak initiative among authorities continue to impede climate action [70,71]. Recent research on public perception and youth involvement in the transition is largely absent.

3.3 Main barriers to meaningful youth engagement in local sustainable energy transition

Youth in the Western Balkans represent an important social group for long-term sustainable development, yet available evidence suggests that their involvement in local decision-making processes related to the sustainable energy transition remains limited, fragmented and often more formal than substantive. Although national strategies and local initiatives frequently acknowledge the importance of youth participation, practical implementation continues to face multiple obstacles. These include insufficient institutional support, limited access to relevant information and education, restricted opportunities to influence policy-making, economic insecurity, low trust in institutions, social inequalities and the limited recognition of youth potential in areas such as the sustainable energy transition and the circular economy.

Political engagement among youth is constrained largely by low trust in institutions and the prevailing perception that their voices do not influence public decisions. These challenges are even more pronounced for young people in rural areas and marginalized communities, who face additional barriers such as geographic isolation from decision-making centres, weak digital literacy, and insufficient infrastructure. Moreover, many local governments lack clear frameworks for involving youth in policy development related to climate change, energy, and waste management.

Several structural obstacles make it difficult for youth to participate meaningfully in decision-making, particularly in matters concerning sustainable development. Addressing these obstacles requires careful analysis and prioritization.

Lack of institutional support.

Available evidence from the region suggests that many local youth councils and youth offices either do not function regularly or lack sufficient resources, clear mandates and political influence. Even when such bodies formally exist, they may play a symbolic rather than substantive role in local decision-making. This is particularly problematic in sustainability-related fields, where youth could contribute to local strategies for energy efficiency, waste management, renewable energy and environmental protection.

Insufficient information and education.

Young people frequently lack access to relevant information about public decision-making processes and opportunities for engagement. This problem is particularly acute in rural areas, where internet access and the quality of education are often limited. Furthermore, sustainable development and the sustainable energy transition are not systematically included in formal school

curricula. While non-governmental organizations offer informal educational activities, their outreach remains limited, and their programs often lack institutional support or long-term continuity.

Economic insecurity.

High youth unemployment and unstable working conditions make it difficult for young people to prioritize civic engagement. When their basic economic needs are not met, participation in public or environmental initiatives is often viewed as a secondary concern. This challenge affects youth involvement in areas such as recycling, agricultural innovation, and green entrepreneurship, where meaningful engagement requires time, resources, and capacity.

Low trust in institutions.

A widespread perception of inefficiency, non-transparency, and corruption further reduces youth motivation to engage in public decision-making. This disillusionment is particularly strong in policy areas that require intersectoral coordination, substantial investments, and long-term planning, such as energy and environmental policy. Many young people doubt that their suggestions will be considered or that institutional processes are open to change.

Lack of practical skills for participation.

Although seminars and workshops on sustainability are occasionally organized by civil society actors, these initiatives do not reach all youth and typically lack the depth and continuity necessary for developing practical skills. Project management, teamwork, leadership, and advocacy skills are essential for meaningful engagement in complex policy processes, yet many young people lack opportunities to develop them.

Social inequalities and exclusion.

Youth from disadvantaged backgrounds – including those with disabilities, rural youth, and members of minority groups – face additional challenges. Their needs are often underrepresented in public debates and policy processes, leading to deeper social and political marginalization.

Insufficient support for youth-led initiatives.

Youth organizations and informal groups working on sustainability and circular economy initiatives often lack access to funding, administrative assistance, and visibility platforms. This limits their ability to design, implement, and scale impactful projects.

Limited media visibility.

Media outlets seldom highlight youth initiatives related to the sustainable energy transition. As a result, youth efforts remain largely unnoticed by the broader public, which diminishes their perceived relevance and further weakens motivation for engagement.

Addressing these barriers requires coordinated efforts across institutional, educational, and social domains. Strengthening institutional structures, improving information channels, expanding educational opportunities, and fostering social inclusion are essential steps for empowering youth to take a more active role in shaping the sustainable energy future of the Western Balkans.

4 Discussion

4.1 Participation gap, trust and legitimacy in local energy transition

The sustainable energy transition in the Western Balkans must be understood within a broader European context that links decarbonization to long-term socio-economic development and intergenerational justice. The literature reviewed in Sections 1 and 2 highlights both the structural commitment of the European Union (EU) to climate neutrality and the significant variation across regions in terms of institutional capacity, public engagement, and societal readiness for transformation. These differences are especially pronounced when comparing Western European countries – where participatory governance models and strong environmental awareness are more established – with post-socialist regions such as the Visegrad (V4) and Western Balkan countries, which face persistent structural challenges. The comparison between V4 experiences and Western Balkan realities provides a valuable lens for understanding the prerequisites for a successful energy transition and for designing appropriate strategies for youth engagement.

A central theme emerging from the literature is that public acceptance and citizen engagement – particularly youth engagement – are not peripheral but foundational to the energy transition. Numerous studies from EU member states show that transitions are more effective and socially legitimate when decision-making processes include diverse stakeholders early and consistently. Austria's structured participatory mechanisms, Norway's co-creation modelling for youth, and Spain's multidimensional analyses of youth acceptance illustrate different models for integrating young people into sustainability governance. These examples point to a European trend: youth are increasingly recognized not only as beneficiaries of transition policies but as active contributors to shaping them.

Against this backdrop, the V4 region offers a particularly relevant comparative case. Countries such as Hungary, Poland, Slovakia, and the Czech Republic share historical and political characteristics with the Western Balkans, including post-socialist governance structures, delayed democratization, and a reliance on fossil-fuel industries. The literature indicates that while the V4 countries follow different pathways, their experiences demonstrate the importance of regional governance, municipal capacity, and cross-sectoral coordination as preconditions for a successful transition. Importantly, V4 research underscores that youth attitudes toward environmental policy are shaped not only by knowledge but also by trust in institutions, the perceived fairness of policies, and socio-economic conditions – a pattern that closely mirrors youth perceptions in the Western Balkans.

The findings from Section 3 indicate that the Western Balkans face a dual challenge: significant structural barriers in the energy sector and insufficient youth engagement in sustainability issues. The region's energy systems continue to rely heavily on coal, outdated technologies, and centralized governance models. In addition, the geopolitical role of the Western Balkans as an energy transit corridor introduces further complexity, as political pressures and external dependencies influence energy-sector priorities. This structural scenario heightens the urgency of aligning national strategies with EU expectations, yet it simultaneously exposes the limitations of existing institutional frameworks.

Youth perceptions documented across Albania, Bosnia and Herzegovina, Montenegro, North Macedonia, and Serbia reveal a pattern of low environmental literacy, limited decision-making influence, and widespread disillusionment with political institutions. This reflects broader regional challenges such as corruption, weak public administration, and low trust in government – factors also observed in V4 coal regions during their early transition phases. A recurring finding is that youth often identify urgent social issues (e.g., poverty, healthcare and employment) as higher priorities than environmental concerns, suggesting that climate policy must be integrated into broader socio-economic development narratives to resonate with young populations.

Section 4 provides deeper insight into the structural obstacles facing youth participation. These obstacles align closely with international research on youth civic engagement, including limited institutional support, insufficient information access, a lack of practical skills and economic

insecurity. The Western Balkans are characterized by relatively high youth unemployment and emigration rates, which weaken the local capacity to mobilize and sustain youth involvement in long-term processes such as the energy transition. Institutional weaknesses, including the symbolic functioning of youth councils and the absence of clear participatory mechanisms, further exacerbate exclusion.

Taken together, the literature and empirical findings suggest a systemic participation gap: young people are expected to play a leading role in the sustainable energy transition, yet the institutional and socio-economic conditions necessary for their participation are largely absent. This disconnect has critical implications. First, without meaningful youth engagement, transition policies risk lacking public legitimacy and may face social resistance. Second, excluding youth limits innovation potential, as young people are more likely to adopt new technologies, support circular economy initiatives, and drive social change when adequately supported. Finally, in regions experiencing demographic decline and outward migration, the absence of youth engagement threatens long-term sustainability.

A key implication of the reviewed evidence is that youth engagement cannot be reduced to information campaigns or formal consultation. In the Western Balkan context, participation is closely linked to trust, legitimacy and perceived fairness. Young people and local communities may support environmental protection in principle while opposing specific projects if they perceive them as imposed, non-transparent, environmentally harmful or socially unjust. This is visible in contentious environmental mobilizations in Serbia, including protests against small hydropower plants and controversies over lithium extraction. These cases show that civic engagement may take both cooperative and contentious forms. Therefore, youth participation should be understood not only as support for official transition policies, but also as the capacity to question, monitor and influence the direction of local energy development.

Youth emigration adds an additional layer to this participation gap. In many local communities, especially those facing economic decline, depopulation and limited employment opportunities, young people may not see a future for themselves in the places where transition policies are being implemented. Under such conditions, youth engagement in the sustainable energy transition cannot be based only on education and consultation. It must also be linked to green employment, local economic development, skills formation, youth retention and just-transition policies in coal-dependent and economically vulnerable areas. Without such a connection, participation mechanisms risk remaining detached from the everyday priorities of young people.

The recommendations presented in this article reflect these challenges and align well with international best practices. Strengthening youth offices, implementing participatory budgeting, integrating sustainability into curricula, supporting youth organizations, and fostering digital participation all represent feasible and impactful strategies. These measures correspond to practices already tested in V4 regions, where municipal-level initiatives, civic education programs,

and cross-sectoral partnerships have proven effective. Importantly, these recommendations emphasize the need for multi-level governance reform, with local governments occupying a central role in operationalizing youth engagement.

The recommendations for youth and youth-focused civil society organizations complement the institutional focus by emphasizing capacity-building, networking, inclusivity, and collaboration with the private sector. These strategies acknowledge that youth engagement is not solely a matter of institutional supply but also of youth agency and empowerment. Building capacities in leadership, project development, and policy literacy can help young people participate more effectively and advocate for more transparent and accountable governance.

In this sense, the discussion reveals a path forward: a successful energy transition in the Western Balkans requires simultaneous institutional strengthening and youth empowerment, grounded in long-term planning, policy coherence, and cross-sectoral cooperation. Drawing on V4 experiences, Western Balkan governments should invest in developing participatory structures that do not merely exist on paper but function as legitimate, resourced, and accessible mechanisms for youth engagement. At the same time, youth themselves must be supported with educational tools, networks, and financial opportunities to become proactive contributors to the transition.

Ultimately, the sustainable energy transition in the Western Balkans is as much a social and generational transformation as it is a technological one. Ensuring meaningful youth participation will not only improve policy effectiveness but also contribute to building more democratic, resilient, and future-oriented societies.

To make the link between the reviewed evidence and the proposed recommendations explicit, Table 1 summarizes the main barriers identified in the Western Balkan context, relevant lessons from Visegrad and European practices, and corresponding policy directions

Identified barrier	Evidence from the Western Balkan context	Relevant Visegrad/European lesson	Policy recommendation	Main responsible actors	Expected outcome
Weak institutional mechanisms for youth participation	Youth councils and youth offices often lack resources, clear mandates or real influence in local policy-making.	Visegrad and European practices show the importance of institutional anchoring and municipal-level coordination.	Strengthen youth offices and create dedicated green-transition functions within local youth structures.	Local governments, youth offices, youth councils.	More structured and continuous youth participation.
Low climate and energy literacy	Available studies indicate uneven awareness of sustainability, climate change and the energy transition among youth.	Austria, Norway and other European examples show the value of structured learning, participatory modelling and climate-literacy tools.	Integrate the sustainable energy transition into formal and non-formal education.	Schools, universities, municipalities, civil society organizations.	Improved knowledge and informed participation.
Low trust in institutions	Youth often perceive decision-making as closed, corrupt or unresponsive.	Visegrad experiences show that transparency and institutional trust influence support for transition policies.	Introduce participatory budgeting, public reporting and transparent monitoring of youth-related transition initiatives.	Local governments, youth bodies, civil society organizations.	Increased legitimacy and accountability.
Economic insecurity and youth emigration	Unemployment, precarious work and emigration reduce young people's capacity and motivation to engage locally.	Just-transition approaches link decarbonization to employment, regional development and social fairness.	Connect youth engagement with green jobs, internships, green start-ups and local development measures.	Local governments, private sector, employment services, educational institutions.	Stronger youth retention and green-skills development.
Limited visibility and weak support for	Youth environmental initiatives often lack	European and Visegrad practices point to the value of youth networks,	Support youth-led projects through micro-grants, public	Municipalities, civil society organizations,	Stronger youth agency and public recognition.

Identified barrier	Evidence from the Western Balkan context	Relevant Visegrad/European lesson	Policy recommendation	Main responsible actors	Expected outcome
youth-led initiatives	funding, media visibility and administrative support.	platforms and cross-sectoral partnerships.	spaces, media visibility and digital platforms.	media, private sector.	
Social exclusion and unequal access to participation	Rural youth, youth with disabilities, minority youth and economically disadvantaged youth face additional participation barriers.	Inclusive participation models require targeted outreach and adapted mechanisms.	Design accessible participation tools and targeted programmes for marginalized youth groups.	Local governments, schools, youth organizations, social services.	More inclusive transition governance.

Table 1. Linking identified barriers, comparative lessons and policy recommendations

4.2 Recommendations for local government decision-makers in the Balkan region

Based on the reviewed evidence, local governments are central actors in transforming youth participation from a formal requirement into a meaningful component of local sustainable energy governance. The following recommendations are intended as adaptable policy directions rather than one-size-fits-all solutions. Their implementation depends on local institutional capacity, available funding, the strength of youth organizations and the specific socio-economic context of each municipality.

1. Creation and development of youth offices focused on the sustainable energy transition

Youth offices should serve as central institutions connecting young people with local authorities, civil society organizations, and the business sector.

Recommendations:

- Implement mandatory training programs for youth office staff, focusing on sustainability, participatory methods, and communication skills.

- Establish specialized units within youth offices dedicated specifically to green initiatives and youth engagement in energy transition planning.
- Ensure a stable local budget allocated to youth-led sustainability projects.

2. Development of participatory budget initiatives

Local self-governments should integrate youth into budget allocation processes, particularly in areas related to sustainability.

Recommendations:

- Organize public forums and workshops where youth can propose transition-related projects.
- Involve youth representatives in evaluating and monitoring participatory budgeting outcomes.

3. Implementation of educational initiatives for the sustainable energy transition

Both formal and informal education systems must equip young people with knowledge and skills relevant to the green transformation.

Recommendations:

- Integrate sustainability and energy-transition topics into primary and secondary school curricula.
- Develop specialized programs or modules in partnership with universities, vocational schools, and research institutions, focusing on green technologies and sustainable business models.
- Offer professional seminars and non-formal training sessions for youth beyond traditional schooling.

4. Providing support to youth organizations and informal collectives

Youth organizations can act as strong partners in implementing green initiatives when adequately supported.

Recommendations:

- Allocate municipal funds to youth-led sustainability and circular economy projects.
- Provide administrative and logistical support for youth initiatives, including access to public spaces and municipal services.
- Conduct joint awareness-raising campaigns with youth organizations on the sustainable energy transition.

5. Encouraging intersectoral cooperation

Local governments should foster collaboration between youth, civil society, academia, and private companies.

Recommendations:

- Establish multi-stakeholder working groups that include youth representatives in policy design processes.
- Organize fairs, exhibitions, and conferences where young innovators can present ideas to potential investors and local authorities.

6. Creating digital platforms for youth engagement

Digital tools can help overcome barriers related to information gaps and geographic distance.

Recommendations:

- Develop interactive digital platforms where youth can submit ideas, receive feedback, and track policy updates.
- Introduce online tools that enable transparent monitoring of sustainability projects implemented by municipalities.

7. Promoting exemplary practices from the European Union and neighboring regions

Local governments should systematically learn from and adapt successful youth engagement models used elsewhere.

Recommendations:

- Organize study visits and exchange programs enabling youth to observe participatory practices in EU countries.
- Adapt relevant European frameworks to local conditions while ensuring cultural and socioeconomic relevance.

8. Supporting green start-ups and innovations

Youth entrepreneurship in green sectors can accelerate both economic development and sustainability efforts.

Recommendations:

- Provide financial incentives and grant programs for youth-led green start-ups.
- Organize innovation competitions focused on topics such as the circular economy, renewable energy, and energy efficiency, with funding for winning projects.

9. Introducing compulsory reports on youth engagement

Local self-government units should systematically document youth participation.

Recommendations:

- Publish annual reports on youth involvement in climate, energy, and environmental decision-making.
- Include evaluations of completed youth-related initiatives and outline plans for improving engagement in the coming year.

These recommendations aim to strengthen youth participation, promote inclusiveness, and empower young people as key partners in shaping a sustainable energy future for the Western Balkans. Systematic implementation of these measures can help local governments build more resilient, youth-responsive, and forward-looking development strategies.

4.3 Recommendations for youth and youth-focused civil society organizations in the Balkan region

Youth and youth-focused civil society organizations are not only beneficiaries of transition policies but potential co-creators, monitors and advocates of local sustainable energy governance. However, their capacity to participate depends on access to knowledge, organizational resources, networks, funding and institutional openness. The following recommendations therefore focus on strengthening youth agency while recognizing the structural limits that young people face in many local contexts.

1. Enhancing the capabilities of youth for engagement

- Organize regular workshops and training sessions on sustainable development, structured by thematic areas (e.g., energy efficiency, climate change and the circular economy). These programs should be tailored to different levels of prior knowledge and experience to ensure broad participation.
- Develop online learning platforms offering access to materials, tutorials, toolkits, and examples of national and international best practices.
- Establish mentoring programs connecting youth with experienced professionals, activists, and researchers to help them develop essential competencies such as leadership, project management, policy analysis, and advocacy.

2. Enhancing visibility and networking opportunities for youth organizations

- Support the establishment of youth organization networks at local, national, and regional levels to enhance cooperation, share resources, and facilitate joint initiatives.
- Organize annual conferences, forums, and festivals where youth organizations can present their projects, proposals, and ideas for community development.
- Increase media visibility—especially on social media—to raise broader public awareness about the activities and impact of youth organizations.

3. Encouraging youth activism and engagement

- Develop volunteer-based initiatives focused on sustainability and the circular economy, enabling youth to participate directly in their communities.
- Conduct awareness campaigns emphasizing the importance of youth involvement in decision-making, with special attention to vulnerable groups such as rural youth, minority communities, and youth with disabilities.
- Support programs that promote environmental protection, social justice, and green innovation, ensuring that youth have access to hands-on engagement opportunities.

4. Enhancing access to resources and financial assistance

- Create local and national funding mechanisms to support youth-led sustainability initiatives, including micro-grants for smaller community projects.
- Provide training in project-proposal writing, financial planning, and fundraising to help youth apply independently for domestic and international funding opportunities.
- Simplify administrative procedures for youth project applications to reduce bureaucratic barriers that often discourage participation.

5. Advocating for inclusivity and diversity

- Promote the inclusion of youth from diverse socioeconomic, ethnic, and demographic backgrounds in all youth-organization activities and decision-making structures.
- Empower girls and young women through leadership programs, training sessions, and targeted initiatives that encourage their involvement in public policy and sustainability efforts.
- Adapt programs, physical spaces, and digital tools to ensure full accessibility for youth with disabilities.

6. Connecting with the private sector

- Build partnerships between youth organizations and private companies committed to sustainability and corporate social responsibility. Such partnerships can help implement joint projects that benefit local communities.
- Expand opportunities for internships, apprenticeships, study visits, and collaborative research projects that allow youth to gain practical experience in green industries and sustainability-related professions.

7. Developing dedicated spaces for young people

- Establish youth centres and other dedicated spaces where young people can gather, collaborate, and implement their projects. These facilities should include modern equipment, internet access, and meeting rooms.
- Encourage the creative use of existing public spaces—such as libraries, community halls, and cultural centres—for youth meetings, workshops, and events.

8. Monitoring and evaluating youth engagement

- Develop monitoring tools and indicators for assessing youth involvement in local and national decision-making processes.
- Conduct regular consultations with youth to collect feedback on their engagement experiences and identify areas for improvement. The findings should be systematically incorporated into future policies and activities.

Table 2 provides a summary of the authors' recommendations for local governments, youth, and youth-focused CSOs in the Western Balkans.

Recommendation Area	Key Actions / Measures
Stakeholder Group: Local Governments	
1. Strengthen Youth Offices	- Mandatory staff training - Specialized units for green transition projects - Dedicated, stable funding for youth-led initiatives
2. Participatory Budgeting	- Public forums for youth project proposals - Youth participation in evaluation and monitoring of funded projects
3. Educational Initiatives	- Integrate sustainability topics into school curricula - Develop modules on green technologies and sustainable business - Offer professional seminars and non-formal training

Recommendation Area	Key Actions / Measures
4. Support for Youth Organizations	- Provide financial, administrative, and logistical resources - Facilitate access to public venues and communication channels - Joint awareness campaigns
5. Intersectoral Cooperation	- Create multi-stakeholder working groups including youth - Organize fairs, exhibitions, and conferences for youth innovators
6. Digital Engagement Tools	- Interactive platforms for youth proposals and feedback - Digital systems for transparent project monitoring
7. Learning from EU Best Practices	- Study visits and exchange programs - Adaptation of EU participation models to local contexts
8. Support for Green Startups	- Funding schemes for youth-led green entrepreneurship - Innovation competitions with financial awards
9. Annual Youth-Engagement Reporting	- Publish annual reports on youth participation - Include performance indicators and plans for improvement
Stakeholder group: Youth & Youth-Focused CSOs	
1. Capacity Development	- Workshops and training on sustainability and civic engagement - Online learning platforms - Mentoring programs with experts
2. Visibility & Networking	- Networks of youth organizations at multiple levels - Annual conferences and forums - Increased media presence, especially on social media
3. Encouraging Youth Activism	- Volunteer activities in sustainability sectors - Awareness campaigns targeting vulnerable youth groups - Programs promoting environmental justice and green innovation
4. Access to Funding & Resources	- Local/national grant schemes for youth projects - Training in project writing and fundraising - Simplified administrative procedures

Recommendation Area	Key Actions / Measures
5. Inclusivity & Diversity	- Ensure participation of marginalized groups - Empower girls and young women in decision-making - Adapt programs for youth with disabilities
6. Cooperation with Private Sector	- Partnerships with sustainability-focused companies - Internships, apprenticeships, and joint projects
7. Youth-Dedicated Spaces	- Establish youth centres with modern equipment - Utilize existing public spaces for meetings and events
8. Monitoring & Evaluation	- Tools to measure youth engagement - Regular consultations with youth and feedback integration

Table 2. Summary of the authors' recommendations for local governments, youth, and youth-focused CSOs in the Western Balkans

Source: authors' own work

These measures aim to strengthen youth capacity, visibility, and participation, while reinforcing the role of youth and youth-focused civil society organizations as meaningful contributors to public decision-making. Effective implementation requires strong cooperation among local authorities, educational institutions, civil society organizations, the private sector, and youth themselves – ensuring the long-term sustainability and impact of these initiatives.

4.4 Limitations

This study has several limitations that should be considered when interpreting the findings. First, no primary data collection was conducted. The analysis is based exclusively on existing academic literature, policy documents, institutional sources and available secondary data. Future research would benefit from primary quantitative and qualitative data, including surveys, interviews and focus groups with young people, youth organizations, local governments and other stakeholders.

Second, the article applies a critical narrative review rather than a systematic review. Although the reviewed sources were selected according to relevance, credibility and policy usefulness, the study does not claim to provide an exhaustive mapping of all available literature. This limitation reflects the fragmented and uneven nature of research on youth engagement in the sustainable energy transition in the Western Balkans.

Third, the article focuses primarily on five Western Balkan countries covered by the reviewed literature: Albania, Bosnia and Herzegovina, Montenegro, Serbia and North Macedonia. Kosovo is not included as a separate case due to the uneven availability of comparable literature and data

within the scope of this review. This limits the regional completeness of the analysis, particularly because many European and regional policy frameworks use the WB6 format.

Fourth, generalization across the Western Balkan context may obscure important country-specific and local differences. The countries covered by this article share some historical, economic and institutional challenges, but they differ in energy mix, administrative capacity, youth-policy frameworks, civil society strength, dependence on coal, renewable-energy potential and levels of public trust. Future research should therefore develop country-specific and municipality-level analyses.

Finally, youth engagement varies significantly by age, education, employment status, place of residence, gender, disability, ethnicity and socio-economic background. Engaging teenagers still in education is different from engaging young adults entering the labour market or considering emigration. Future studies should therefore apply a more differentiated approach to youth as a heterogeneous social category.

5 Conclusions

This article examined youth engagement in the local sustainable energy transition in the Western Balkans, drawing on lessons from the Visegrad countries and wider European practices. The review shows that young people are expected to play a central role in long-term transition processes, but the institutional, educational and socio-economic conditions for meaningful participation remain weak. This produces a systemic participation gap: youth are formally recognized as important actors, yet often lack real opportunities to influence local decision-making.

The analysis highlights several interconnected barriers: weak or symbolic participation mechanisms, limited climate and energy literacy, low trust in institutions, economic insecurity, youth emigration, social exclusion and insufficient support for youth-led initiatives. These barriers are not merely technical. They reflect broader challenges of legitimacy, fairness and democratic governance in the energy transition. For this reason, youth engagement should be understood as part of a just transition and local energy democracy, rather than as a narrow awareness-raising activity.

The findings also show that the Western Balkan context requires a differentiated approach. Although the countries of the region share post-socialist legacies, European Union accession pressures, environmental vulnerabilities and limited institutional capacities, they differ in their energy mixes, dependence on coal, renewable energy potential, civil society strength, local governance structures and levels of public trust. Policy recommendations therefore cannot be applied uniformly across the region. They should be adapted to national and local conditions, especially in coal-dependent communities and municipalities affected by depopulation, economic insecurity and youth emigration.

Lessons from the Visegrad countries and selected European experiences suggest that meaningful youth participation requires institutional anchoring, transparent decision-making, civic education, cross-sectoral cooperation and locally adapted participatory mechanisms. These lessons are useful

for the Western Balkans, but they cannot be transferred mechanically. The Visegrad experience is relevant because of shared post-socialist legacies and transition challenges, but it also demonstrates that successful implementation depends on administrative capacity, access to funding, municipal-level coordination and trust in institutions.

The article therefore recommends strengthening youth offices, participatory budgeting, green education, digital participation platforms, youth-led initiatives, inclusive engagement mechanisms and links between the energy transition, green skills and local employment. These measures can help transform youth from passive recipients of transition policies into active co-creators, monitors and advocates of local sustainable energy development. Their implementation requires coordinated action by local and national authorities, educational institutions, civil society organizations, the private sector and young people themselves, supported by a long-term vision and interdisciplinary cooperation [72].

Ultimately, the sustainable energy transition in the Western Balkans is not only a technological and economic process, but also a social, democratic and generational transformation. If young people are excluded from shaping this process, transition policies risk losing legitimacy, local relevance and long-term public support. If they are meaningfully included, youth can contribute to more transparent, innovative and socially just pathways of local sustainable energy development. Further research is needed to provide more detailed country-specific and municipality-level evidence on youth attitudes, barriers and participation practices. Primary research with young people, youth organizations, local governments and affected communities would be particularly valuable for designing context-sensitive policies capable of supporting a just and democratic energy transition in the Western Balkans.

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Declarations

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Not applicable.

Consent for publication

Not applicable.

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Authors' contributions

ZSN, AJ and AM prepared a draft of the study. AJ participated in literature search. All authors read and approved the final manuscript.

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