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From Local to Global: How Community-Based Climate Action Shapes International Environmental Diplomacy

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Abstract: The global climate governance is also characterized by an intention-action gap accompanied by North-South equity issues and technology-transfer tensions. This study explores the way community-based climate action may fill that gap. Adopting an interpretivist, qualitative design, three cases of MENA (Jordanian water conservation, Moroccan reforestation, Saudi urban flood resilience) were examined through document analysis, semi-structured interviews, and secondary climate data using thematic analysis. The data and national references were updated and analyzed according to the Fourth National Communication (2023), Second Biennial Update Report (2021) and Updated Nationally Determined Contribution (2021) of Jordan, in accordance with the policy of the National Climate Change 20202050 and the National Adaptation Plan (2021). Findings indicate that grassroots efforts percolate up through the effects of demonstrations, signifying national policy tools and contributing to the viability and credibility of the NDCs; and also, they serve as diplomatic capital that actualizes equity, enhances North-South collaboration and improves trustworthiness in submissions to the UNFCCC. Recommendations include the institutionalization of local-global knowledge platforms, the focus of finance on community-led adaptation, and the involvement of community actors in the process of delegation negotiation. The paper also highlights the increasing importance of community-based climate diplomacy as an example of the Al-Munther Al-Monakhi Initiative that was initiated by the author at COP29. The initiative shows how the involvement of the bottom-up can support national policies and fill the gap between global pledges and local action through translation of the principles of the Paris Agreement and the Updated NDCs of Jordan into activities and opportunities that are accessible and community-based. Implications reposition environmental diplomacy as multi-scalar, enhancing the ambition, fairness and implementation.

Keywords: Community-based climate action; environmental diplomacy; Nationally Determined Contributions (NDCs); North–South cooperation; Jordan.

1. Introduction

Over the past few decades, global warming has become one of the most serious problems of the human race that does not respect boundaries, cultures, or political regimes. The problem of the environment that was initially viewed as a particular issue is today regarded as a highly intertwined social, economic and diplomatic problem. The climate crisis not only affects local groups but also upsets the economies of countries, as well as changes the world order. Community-based projects have become central in climate action, offering a new, grassroots response which not only helps address local risks but also spills over to influence the national

policy agendas and international diplomacy. Although reforestation initiatives in rural villages have been held back by some of the rural inhabitants and renewable energy cooperatives in urban neighborhoods have been driven by local actors, these acts show the ability of local actors to shape broader climate governance systems. These developments raise a key question: how can the localized activities to combat climate change be molded into meaningful input to the global environmental diplomacy?

Climate change has demonstrated the severe differences between the Global North and the Global South in terms of their duties, capacity, and vulnerability. Despite the ideas about the way to global cooperation that were offered by the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, there were also tensions that could not be neglected. The developed countries are perceived as historical emitters of greenhouse gases, whereas the developing countries require their right to develop as well as financial and technical assistance (Sengupta & Friedman, 2019). The International Energy Agency (IEA) estimates that almost two-thirds of the global primary energy demand and over 60%of the CO_2 emissions growth between 2000 and 2030 will arise in the developing countries (Urevig, 2019). This imbalance brings out the urgency of introducing fairer structures to international collaboration, in which the grassroots activity can act as a conduit between the requirements of the local community and the ones of global diplomacy.

Meanwhile, climate politics have been reinvented in line with the continued existence of ecological debt and global inequities. Although the developing countries have not had binding obligations traditionally because of their development requirements, the newly emerging economies like China, India, Brazil, and South Africa emit higher greenhouse gas emissions than most of the developed economies (Delgado, 2019). This change creates urgent concerns regarding the questions of fairness, responsibility, and reciprocity when governing the climate. The IPCC (2023) warned that a global warming of over 1.5°C would expose hundreds of millions of individuals to climate-induced disasters, especially in the most vulnerable regions of the Global South, and inequalities should not be solved only through diplomatic discussions between countries but should also include local actors, whose personal experience may present morally and practically based structures of international cooperation.

The community-based climate action provides a special perspective in this situation. Grassroots campaigns often have an element of sustainability, inclusivity and resiliency that governments at the national level find it hard to place into policy. To illustrate, networks at the city level have been at the forefront in the diplomacy of climate by advocating carbon reduction policies, multilateral relations, and climate justice models (van der Pluijm & Melissen, 2007). According to Liapi (2010), the issue of subnational actors being empowered, especially that of cities, is an indication that diplomacy has undergone a post-Westphalian shift, with local actors contributing significantly to the overall development of global agreements. These dynamics are an example of how community efforts, be they urban or rural, can serve as the laboratories of innovation, establishing practices that are subsequently expanded to national or international scales.

The need to have community-based activity is augmented by the empirical data that connects activities in the grassroots with the overall policy implications. As an example, the Sustainable Development Goals Report (2019) records how climate-related calamities have undone progress in reducing poverty, droughts and hurricanes, taking millions of people back to abject poverty. These shocks have been mitigated by local resilience plans, which include water conservation plans, community-based disaster preparedness, and local renewable energy production (UN SDSN, 2019). The localized experiences can be used to enlighten global negotiations because equity considerations would not be an abstract doctrine, but the factual realities that human livelihoods give to. In such a manner, the community-based climate action can not only be a moral obligation but also a diplomatic asset, enhancing the validity and comprehensiveness of the international agreements.

However, the disparity between the international commitments and the local realities also exists. Even with global treaties, there are worries as to whether the world is making any serious efforts to ensure that greenhouse gas emissions are being kept down (Neufeld, 2019). Researchers emphasize that the UNFCCC and Paris Agreement offer normative guidelines, but the road between the will and the deed is full of obstacles (Harvey, 2019). This gap shows the stalemate of the state actors and the constraints of the top-down diplomacy and justifies the imperative to explore the role of local actions in creating bottom-up pressure and accountability. In this respect, environmental diplomacy cannot be viewed only as the sphere of state representatives, but it is an evolving and multi-layered process in which local communities, civil society and transnational networks intersect (Rahman-Jones, 2019).

Jordan provides a useful case study to describe this interaction between domestic operations and the international obligations. Jordan is a country that is highly susceptible to the impacts of climate change, especially the lack of water and desertification; therefore, with its Nationally Determined Contribution (NDC), Jordan has enhanced its ambition in the Updated Nationally Determined Contribution (2021), committing to reduce greenhouse gas emissions by **31% by 2030** relative to business-as-usual, conditional on international support (Jordan NDC, 2021). However, these promises cannot be handed over without the direct involvement of the communities, municipalities, and local organizations. Locally-based programs to conserve water, waste management, and renewable energy not only make Jordan resilient but also enhance its credibility in the global arena. Through this, the example of Jordan proves how community efforts are internalized in national policies, which subsequently influences the diplomatic stance of a country in climate negotiations. Jordan's Fourth National Communication (2023) and First Transparency Report (2024) provide updated emission inventories and adaptation progress indicators aligned with the Paris Agreement's enhanced transparency framework

This study seeks to explore the avenues by which grassroots initiatives have an impact on the wider climate governance. It answers two research questions:

1. How do community-based climate initiatives at the local level influence national environmental policies and their alignment with international environmental agreements?
2. In what ways can community-led climate action catalyze international environmental diplomacy, particularly in fostering North–South cooperation and addressing equity concerns in climate negotiations?

By linking the local realities and global negotiations, this work fills a major gap in the literature that, in most instances, has neglected the transformational nature of the grassroots actors in international climate negotiations. Value added is that the idea of environmental diplomacy has been re-understood to be a multi-scalar process in which local communities will cease to exist as an object of global policies, but be active makers of a more inclusive, equitable and efficient climate regime.

1.1 Statement of the Problem

Although the UNFCCC and the Paris Agreement have created common norms, converting pledges into quantifiable emission reductions has been unequal, partisan, and full of issues of North-South equity, technology-transfer, and ecological debts (Rahman-Jones, 2019; Neufeld, 2019; Sengupta & Friedman, 2019). Top-down diplomacy in itself has not been able to balance the past with the sudden growth of emissions by emerging economies, resulting in an intention action gap that persists (Harvey, 2019; IPCC, 2020). However, the evidence indicates that the subnational actors, such as cities, municipalities, and community networks, are taking an increased part in climate governance architectures and agendas (van der Pluijm & Melissen, 2007; Liapi, 2010).

Current literature is full of theoretical investigations into how interstate climate bargaining is possible, yet lacks the empirical inquiry of how the existence of community-based climate action would be transmitted up the system to readjust national policy and, subsequently, redefine the

positions in international negotiations, particularly on the areas of equity, finance, and loss-and-damage (Federal Foreign Office of Germany, 2018; United Nations, 2018). This study fills that gap by following the path of bottom-up efforts to design NDCs, particularly policy piloting, socialization of norms, and coalition-building, where local efforts inform NDC design and enhance diplomatic credibility (Detges, 2017; Jordan NDC, 2016). The study provides a multi-scalar sports model of climate diplomacy by empirically connecting local practice with national alignment and multilateral results to incorporate community evidence into the national stand in order to enhance the strength of ambition, fairness and feasibility of implementation (Oberthür & Groen, 2017).

2. Literature Review

2.1 Community-Based Action in a Multi-Scalar Climate Governance Landscape

Community-based climate programs have shifted away to the periphery of the environmental policy arena to being at the center of modern climate governance discussions. These initiatives, including municipal waste management and water saving programs and the renewable energy and stewardship of ecosystems in neighborhoods, bridge lived vulnerability and actionable solutions, which make them plausible locations of experimentation and social learning. The community action, based on mitigation and adaptation in the daily practice, creates locally viable norms and tools that can be enlarged, institutionalized, and adapted into the national policy and, ultimately, into multilateral commitments (Liste, 2017; Robertua, 2016). In this polycentric reality, local actors contribute to operationalizing abstract international objectives, aligning the needs of development with climate demands and amplifying distributional issues that the diplomats have to resolve (Bulkeley, 2015; Horton et al., 2016).

The most recent findings of the Fourth National Communication (2023) and the Second Biennial Update Report (2021) of Jordan indicate that the national priorities in adaptation, water security, agriculture, and renewable energy are becoming more dominated by community-based pilot projects that connect local experience with international climate-related requirements.

2.2 From Local Experiments to National Policy and NDC Alignment

A recurrent finding in available literature suggests that projects with local origins in place lead to demonstration effects that can then infiltrate the upper layers of authority by engaging in policy emulation, coalition formation, and socialization of norms (Detges, 2017). By implementing small-scale projects that are economical in reducing waste, like waste diversion or distributed renewable energy, or that create high-impact adaptation, such as urban heat management or community water management, municipalities generate empirical findings which are useful to the line ministries in future policy making and budget formulations. This bottom-up knowledge may support Nationally Determined Contributions (NDCs) as it may make targets more attainable, quantifiable, and more grindable in the public (Oberthür & Groen, 2017). The examples of national pledges of Jordan demonstrate the rationale, according to which the national credibility and the international status are based on the ability to organize communities, municipalities, and local organizations in order to realize the 2030 pathway (Jordan NDC 2016). In this context, the community action is not merely in support of the national policy, but constitutes the policy co-producers: make the instruments sharper, the implementation cleaner, and the intention-action continuity that has traditionally been the hallmark of climate governance thinner (Harvey, 2019; Neufeld, 2019). Diffusion pathways would be as shown in Figures 1 and 2 below:

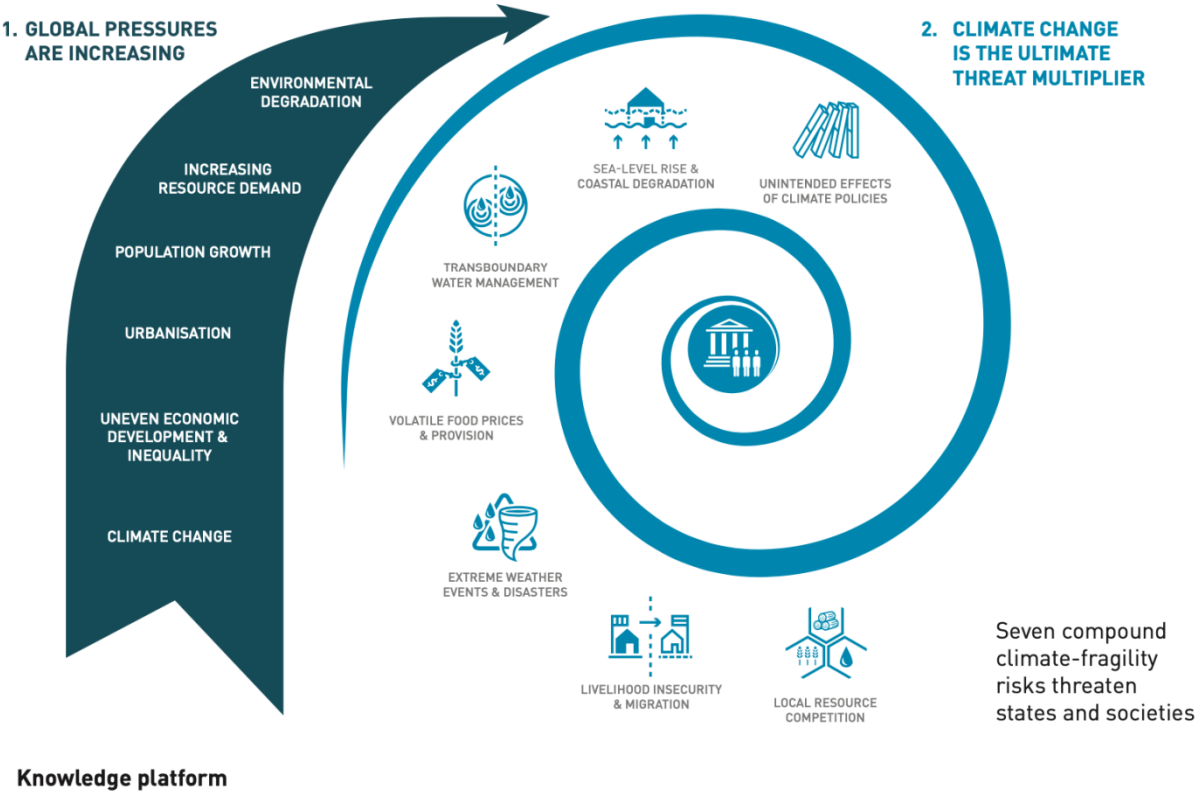


Figure 1: Knowledge platform

Source: (Detges, 2017)

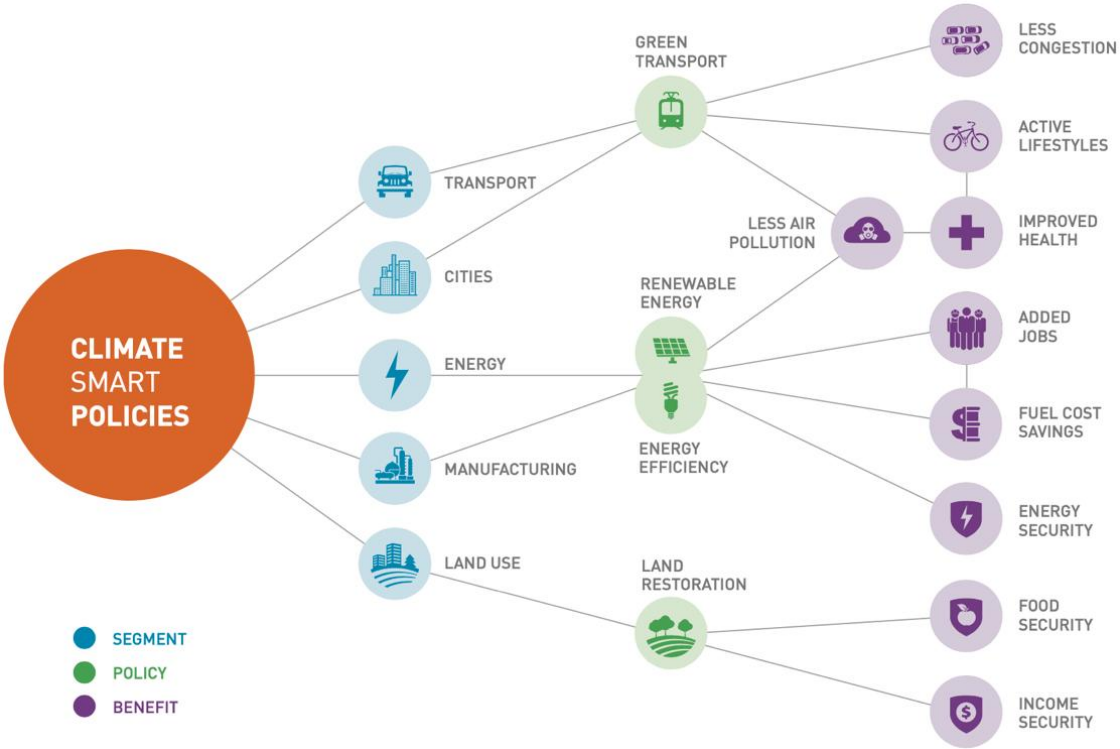


Figure 2: The cascading benefits of climate action

Source: (Detges, 2017)

The interface between science, risk, policy, and diplomacy presented in Figure (1) is the explanation of how localized information and practice contribute to foreign-policy agendas (Detges, 2017). Figure (2) shows the co-benefits in terms of resilience, stability, and prosperity

starting with such a community project and then applied diplomatically as a talking point of ambition and finance (Detges, 2017).

2.3 Community Action as a Diplomatic Resource: Equity and North–South Cooperation

Since the Paris Agreement, international environmental diplomacy has been designed according to the requirements of equity, responsibility, finance and capability (Rajamani, 2016; UNFCCC, 2016). Learning in the community, especially in vulnerable geographies, is how equity claims are crystallized empirically, helping to demonstrate how climate impacts intersect with poverty, food security, and health (UNDP, 2019). In the case of Jordan, this approach is reflected in the National Climate Change Policy 2020–2050, which institutionalizes equity by integrating gender and community participation into national adaptation and mitigation priorities. Equally, the National Adaptation Plan (2021) projects local resilience interventions, especially in water, agriculture, and health, into organized national actions which enhance equity, transparency, and inclusion at various governance levels. These structures depict how the bottom-up community experience can inform the top-down equity policy that would strengthen the credibility of Jordan in diplomacy whenever international negotiations on the transfer of technology, finance, and loss and damage are being undertaken. This correspondence between local practice and political structures places such an attitude of Jordan in a larger pattern of South-South and North-South collaboration, in which the capacity of community-based adjustment offers a plausible basis for fair relationships.

Consequently, it has made it possible to have practical North-South partnerships, which are structured around the local delivery (Sengupta & Friedman, 2019; Delgado, 2019). They reveal differences within the "South, as well, when the rise of emissions in new economies complicates the structural frameworks based on historical accountability and increases the cost of open, community-related channels of mitigation and adaptation (Cladi & Locatelli, 2016; Krampe et al., 2018). By locating in bilateral and multilateral arenas, the community-oriented results have the potential to de-polarize negotiations by re-imagining distributive conflict in terms of co-produced solutions and verifiable outcomes (Council of the EU, 2020; Climate Diplomacy, 2020).

2.4 Climate Security and the Local Peace Dividend

A growing body of literature considers climate change as a threat multiplier that has the potential to accelerate resource competition, internally driven displacement, and geopolitical tension (Werrell & Femia, 2019). Nonetheless, the same literature reveals that the local solution to risks, including water-sharing agreements, community-level forest management, and micro-grids, enhances social capital (Christidis & Stott, 2015; Kheyrian, 2019). More diplomats have come to define such local dividends of peace: the priorities of climate diplomacy of the European Union after COP21 make direct connections between community resilience, low-emission development, and stability (Council of the EU, 2020). Through foregrounding community results in the toolkits of the foreign policymakers, the states are able to convert the local risk reduction to the international diplomatic credibility and bargaining advantages; hence, the second research question of the study is the ability of the community action to stimulate the international response.

2.5 Theoretical Lenses: From Neorealism to Constructivism and Critical Approaches

The classical and neorealist approaches focus on the influence of anarchic traits of the system and state capacities in shaping behavior (Antunes & Camisao, 2018; Kheyrian, 2019). Within this framework, community action is considered consequential in the sense that it can affect state interests, like energy security, social stability or the competitive edge of low-carbon sectors. The liberal-institutionalist literature underlines the extent to which the institutional regimes and normative standards, such as the GHG Protocols, reduce transaction costs and encourage preference consistency, whereas local experimentation alleviates uncertainty and enables institutional learning (Parrock & Lory, 2020; The Federal Foreign Office, 2020). Constructivist

and critical approaches presume the formation of norms in the future and highlight the framing of power and justice, which states that practices in the community reassemble the ideas of fairness, responsibility, and development, thus redefining the identities of the state and the corresponding discursive scripts (Zaree et al., 2016). In all these theoretical traditions, an overlapping understanding emerges: a community-based level of agency becomes structurally meaningful when it is congealed in policy discourses, performance indicators or diplomatic discourses.

2.6 Fragmented Governance, Competing Venues, and the Role of Non-State Actors

Global environmental governance remains in a fragmented state, being characterized by overlapping jurisdictions, a lack of even distribution of leadership, and competition between institutions (Sharma, 2021). Representation of a limited mandate of the United Nations Environment Program and expansion of the treaty secretariats have generated huge gaps and duplicates (Bulkeley, 2015). In this regard, communities and cities, in combination with translocal networks, are acts of connective tissue in that they standardize practices and diffuse norms across the venues (van der Pluijm & Melissen, 2007). Their involvement extends compliance constituency and allows venue shopping through the use of evidence that is based on local pilots in diplomatic forums to enlist funding, impose standards, or amend nationally-defined contributions (O'Neill, 2017). Although veto alliances and power imbalances exist (Bodansky, 2016; Panke, 2019), communities of practice can be used to alleviate deadlock by reframing feasibility based on the proven praxis.

The available literature confirms the fact that community-based action is not just a form of post-implementation aftercare to treaties but forms the core of the problem-solving ability of climate diplomacy. However, there are still two gaps. To start with, the actual mapping of the way in which local efforts affect the national policy design, budgetary planning, and revisions in its NDCs is underdeveloped in comparison to studies of interstate bargaining (Rajamani, 2016; UNFCCC, 2016). Second, the diplomatic interpretation of community consequences to North-South cooperation, specifically in relation to fairness, finance, and technology, requires systemic exploration that relates community metrics, including emissions turmoil and robustness benefits, with negotiating places and bargaining contracts (United Nations, 2018; Federal Foreign Office of Germany, 2018). Direct responses to these gaps directly answer the research questions of the study: (1) by mapping the routes of diffusion between local communities towards national adaptation to international agreements, and (2) by showing how empirically realized co-benefits and weaknesses may enable fair international bargains.

3. Methodology

3.1 Research Design

This study employs a qualitative research design based on the exploratory and interpretive research methods. The design is suitable considering the objectives of the study: to determine how the community-based climate programs impact national policies and the ways they comply with the international environmental treaties, and how the community-based initiatives drive the international environmental diplomacy. Through qualitative design, it is possible to take an in-depth analysis of case studies, policy documents, and international treaties and locate local activities within the overall framework of global governance (Bodansky, 2016; Addaney, 2019).

3.2 Research Philosophy

This study is philosophically driven by interpretivism, which is based on the assumption that social reality is created in contacts, negotiations, and meanings. Climate programs are socially based practices, and are constructed within cultural, political and ecological realms by communities. These initiatives are not analyzed as isolated measures, but as impetuses of the global negotiation and North-South cooperation systems, which are offered by Interpretivism (McCharthy, 2015; Climate Diplomacy, 2020).

3.3 Sample of the Study

The sample includes three cases of community-based climate initiatives within the MENA region and how they have been recorded to interact with national and international frameworks. This can be water conservation in Jordan, grassroots reforestation in Morocco and urban flood resilience in Saudi Arabia. Purposive sampling was used to select these cases in order to achieve diversity in geographic location, ecological focus, and diplomatic relevance (Arab News, 2020; World Bank, 2016).

3.4 Instruments of the Study

The primary data collection instruments are

- Documentary analysis of international agreements (e.g., Paris Agreement, Kyoto Protocol), domestic policy documents, and reports of community initiatives.
- Updated national climate documents were also reviewed, including Jordan's Fourth National Communication (2023), Second Biennial Update Report (2021), Updated Nationally Determined Contribution (2021), and National Adaptation Plan (2021).
- The semi-structured interviews with the stakeholders of grassroots organizations, policy makers and international negotiators.
- Climate models (PRECIS) and regional assessments (Luterbacher & Sprinz, 2011) are the sources of secondary data.

3.4.1 Validity of the Instrument

Validity was determined by triangulation comparing the results of different instruments (documents, interviews and secondary datasets). The theoretical validity was enhanced by basing the analysis on the existing literature in the sphere of the international relations and climate diplomacy (Ed & Gustavo, 2016; King, 2015).

3.4.2 Reliability of the Instrument

Audit trails were used to improve reliability; a transparent report of coding procedures, selection criterion of documents, and interview procedures. Coding was done twice, and two experts who were not involved in the research of the article were invited to review the coding results in order to maintain consistency (Rudel, 2016).

3.5 Data Collection

Data were collected in three phases:

1. **Phase One**: Compilation of community-based initiative reports and local climate action case studies.
2. **Phase Two**: Policy mapping of national-level climate commitments and their references to community initiatives.
3. **Phase Three**: Examination of international diplomatic records (UNFCCC negotiations, COP meetings) where community-led actions were cited as models or bargaining tools (NOAA, 2019).

Figure (3) illustrates localized extreme climate impacts in Jordan, showing the 2018 Dead Sea flash floods that exposed the urgent need for community-level adaptation and strengthened Jordan's national and international climate governance priorities.

Figure 3: Death toll from the flash floods that swept students on a school trip in the Dead Sea area, Jordan (2018)

Source: (The Jordan Times, 2018)

This number indicates the fatal Dead Sea flash floods that happened in 2018, one of the most drastic climate-related catastrophes in recent history in Jordan. The vehemence of the muddy river water reflects the occurrence of a sudden rainfall, which floods valleys and ravines, putting communities at risk. These local climate effects demonstrate the need to have better community-based early warning mechanisms, disaster preparedness and the awareness of the community at the grassroots of flooding risks. These country-specific experiences directly guide national priorities in adaptation in the National Adaptation Plan of Jordan (2021) and support the national narrative of equity in international climate change negotiations, particularly adaptation finance and loss and damage.

3.6 Data Analysis

Thematic analysis was adopted to find common themes, patterns, and stories at the three levels of analysis (local, national, and international). Codes were created inductively and based on two key research questions:

1. How do community-based climate initiatives influence national environmental policies and align with international agreements?
2. How do these initiatives catalyze international environmental diplomacy, especially in addressing equity and North–South cooperation?

Figure No. (4) below shows projections of summer and winter changes in temperatures in the MENA region as captured by PRECIS.

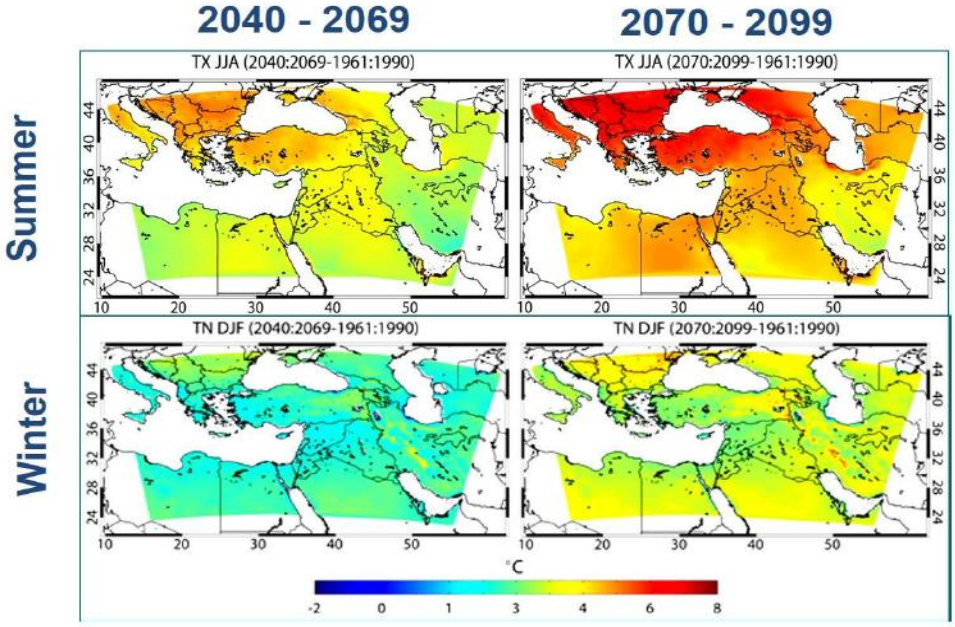


Figure 4: Summer and Winter temperature shift using the PRECIS model to collect data

Source: (Laura & Hayley, 2020)

Figure (4) above indicates that temperature changes in 2040–2069 and 2070–2099 have an increase of up to 3.7°C (Laura & Hayley, 2020). The analysis used this projection to place the data in interviews in context in order to understand how scientific forecasts are viewed both at the local level and internationally.

The next figure, No. (5) shows that COVID-19 affected the CO_2 emissions, with a record low of 2.6 billion metric tons being reached in 2020.

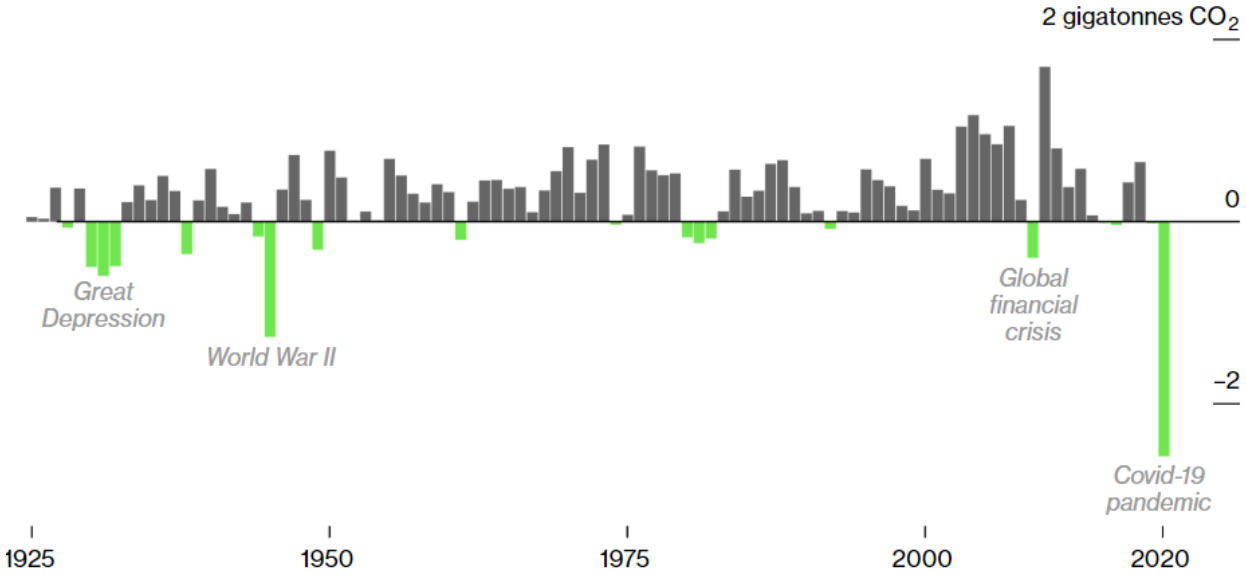


Figure 5: Annual Change in energy-related emissions, a total of 2.6 billion metric tons of CO2 that will never be emitted due to COVID-19

Source: (Laura & Hayley, 2020)

The figure above demonstrates how lockdowns have decreased energy-related emissions annually (Laura & Hayley, 2020). This number helps to analyze the idea of how abrupt, mass changes in behavior, even on the community level, can transform the international discourse on climate feasibility and urgency.

4. Findings

4.1 Findings Related to the First Research Question: How do community-based climate initiatives at the local level influence national environmental policies and their alignment with international environmental agreements?

Jordan Community-based climate programs have steadily come out as a crucial element in the development of environmental management, both in the national and international arenas. Although the government of Jordan has been prolific in its periodical reports to the UNFCCC and in formulating policy frameworks like the National Climate Change Policy (2020–2050), the input of the local communities has also been of equal importance. Projects of conservation of water, the adoption of renewable energy and awareness campaigns are pioneered by grassroots organizations, local NGOs, and community groups and directly correspond to the commitments of Jordan under its Nationally Determined Contributions (NDCs).

The water sector is one of the most powerful sectors that the locals have influence over, which is ranked as one of the most water-starved countries in the world. The community-based projects like rainwater collection, water recycles and joint management of irrigation schemes have offered viable solutions which were subsequently adopted in national adaptation strategies. These micro-level interventions have acted as a model of policy adoption on a large scale. As one example, the National Strategy and Action Plan to Combat Desertification (2015-2020) in Jordan was based on the insights of local people in dry areas, and it connected them to the international community, i.e., the UN Convention to Combat Desertification.

Such local initiatives are directly aligned with the National Adaptation Plan (NAP, 2021) of Jordan where the water sector is mentioned as one of the highest priorities of a country in terms of climate resiliency. The NAP strengthens the community-based practices including the rainwater harvesting, decentralized irrigation and drought-resilient agriculture. Jordan can sustain the integration of these community efforts in the national frameworks of adaptation by focusing on the relationships between the grassroots knowledge and sectoral planning in order to align the objectives with the international commitments in terms of adaptation under the Paris Agreement.

The other synergy problem is in renewable energy projects. Decentralized energy projects have been proven in practice with local pilot projects, especially solar energy systems in rural areas and in refugee camps. These activities aided in the process of informing the National Green Growth Plan (2017), which identifies renewable energy as a pillar of mitigation. The community actors succeeded by persuading the government to include renewable-energy targets in its **Updated NDC (2021)**, which raises national ambition to 31 % emission reduction by 2030 (Ministry of Environment, 2021).

The other way the environmental diplomacy of Jordan was influenced by community activism is via the transfer of knowledge. Data on emissions, water use, and loss of biodiversity were supplied by local advocacy groups, often in collaboration with universities, which were included in national reports, including the First Biennial Update Report (2017). This information sharing facilitated a bottom-up channel whereby the experience at the community level was placed into the international reporting system of Jordan, as illustrated in Figure (6) below:

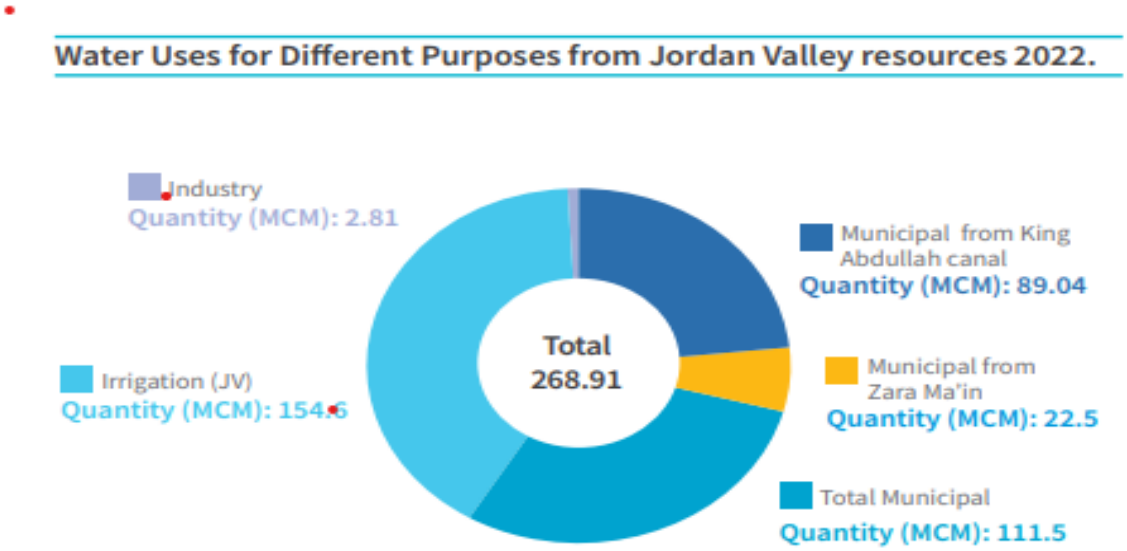


Figure 6: Water use by sector in Jordan (2022).

Source: Ministry of Water & Irrigation, Jordan Water Sector Facts & Figures 2022.

Figure 6 presents the 2022 distribution of water use by sector, which demonstrates that agriculture is the largest water consumer at around 52% next by municipal consumption (45%), and industrial consumption (3%), (MWI, 2022). These updated figures replace earlier 2015 data from the First BUR (2017) and demonstrate the continuing centrality of the agricultural sector in Jordan's adaptation and efficiency strategies

Overall, community-based programs have helped not only in shaping the policy but also in enhancing their credibility. Jordan has been able to balance both domestic policies and international treaties by incorporating the concerns of the grassroots into the body, such as the Environmental Protection Law (2017) and climate bylaws. Therefore, the fact demonstrates that there is an active reciprocal process: the local actions, as well as being influenced by the international commitments, strengthen the position of Jordan as a global climate diplomacy.

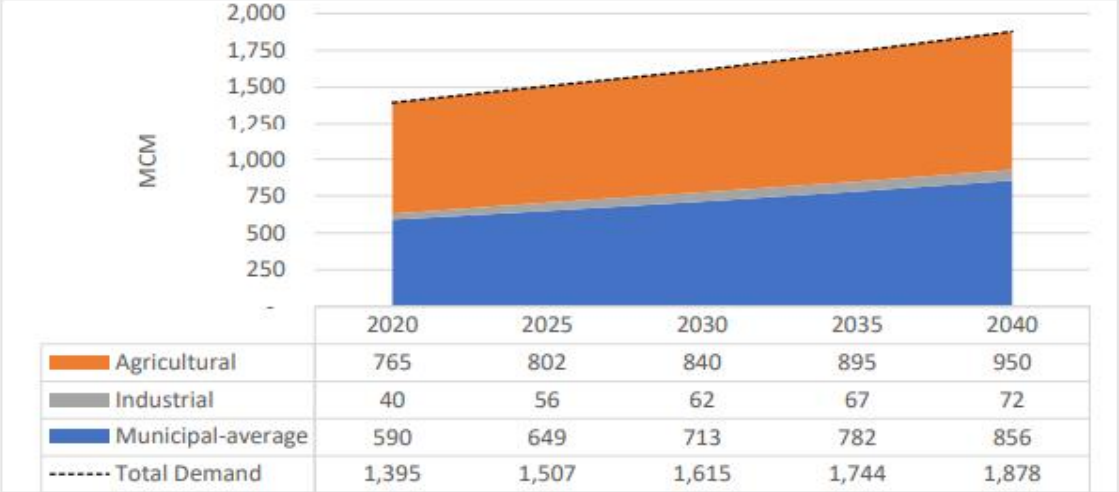
4.2 Findings Related to the Second Research Question: In what ways can community-led climate action serve as a catalyst for international environmental diplomacy, particularly in fostering North–South cooperation and addressing equity concerns in climate negotiations?

Climate programs initiated by the community in Jordan are both a source of impact to domestic policy and as a symbolic and real-world location of international interaction. Within the framework of the cooperation between the North and the South, Jordan has established itself as an example of how adaptation through communities can draw the attention and support of the international community in developing countries.

One such case was the reaction of Jordan to the population growth due to refugees, which put pressure on the already limited water and energy supply. The community-based organizations led the initiative of resource sharing and water management in regions where refugees were being hosted. Through these initiatives, the local resilience strategies demonstrated how the issue of equity could be tackled by making sure the vulnerable groups were not marginalized in climate adaptation actions. These practices became visible in international climate conferences and served to position Jordan as a victim of global carbon emissions and an aggressive participant in global solutions.

This local-to-global narrative has also been observed in the way Jordan has been engaging in regional structures, especially in the Middle East North Africa (MENA). Jordan also emphasized the importance of the grassroots actors in the transboundary water governance (e.g., agreements over the Yarmouk River) through collaboration with affiliated local cooperatives and nongovernmental organizations. According to the **Updated NDC (2021)**, Jordan reaffirmed these conditional targets under an expanded 31 % reduction commitment and emphasized community-led adaptation as a foundation for international cooperation. Attaching local demands to the equality debate at a worldwide scale, Jordan enhanced its bargaining strength during negotiations on climate change.

Another good source of local action resulting in global cooperation is through community-led renewable energy projects. Small-scale solar and wind projects, provided by cooperatives, with the aid of international donors like USAID, provided some evidence that bottom-up investment strategies can be expanded using financial and technical relationships between the North and South. These case studies added to the story of climate diplomacy in Jordan because they matched the local success stories with the demands of the global climate justice as depicted in Figure (7) below:



	2020	2025	2030	2035	2040
Agricultural	765	802	840	895	950
Industrial	40	56	62	67	72
Municipal-average	590	649	713	782	856
------- Total Demand	1,395	1,507	1,615	1,744	1,878

Figure 7: Projected Water Demand for All Sectors in Jordan (2020–2040).

Source: Ministry of Water and Irrigation (2023). Jordan National Water Strategy 2023–2040,

Figure 7 demonstrates the estimated water demand of agriculture, industry, and municipalities up to 2020 and 2040. The National Water Strategy (2023–2040) indicates that the total water demand is projected to go up by 1,395 million m^3 in 2020 to 1,878 million m^3 in 2040. The agricultural consumption still represents the highest consumption amount, followed by the municipal and industrial sectors.

It is this trend on the rise that underlines the continued strain on the Jordanian limited water resources and supports the urgency of community-based efforts, including rainwater harvesting, grey-water recycling and efficient irrigation systems, which underpins the National Adaptation Plan (2021) and the Updated NDC (2021). These initiatives ensure national resiliency, local vulnerability and enhance the role of Jordan in supporting equitable climate finance and collaboration at the global level. More so, community-based data gathering and vulnerability appraisals are now incorporated in official adaptation reporting in the latest national documents of Jordan, compared to previous use of the Third National Communication (2014) and reflect the increased use of local knowledge in the science-policy interface.

On the same note, the 2021 Updated NDP of Morocco has a reduction target of 45.5% in 2030, which is to be achieved by community-based reforestation and renewable energy projects. The

comparison of Jordan and Morocco shows how the adaptation of the grassroots strengthens the credibility of the countries in global negotiations on climate.

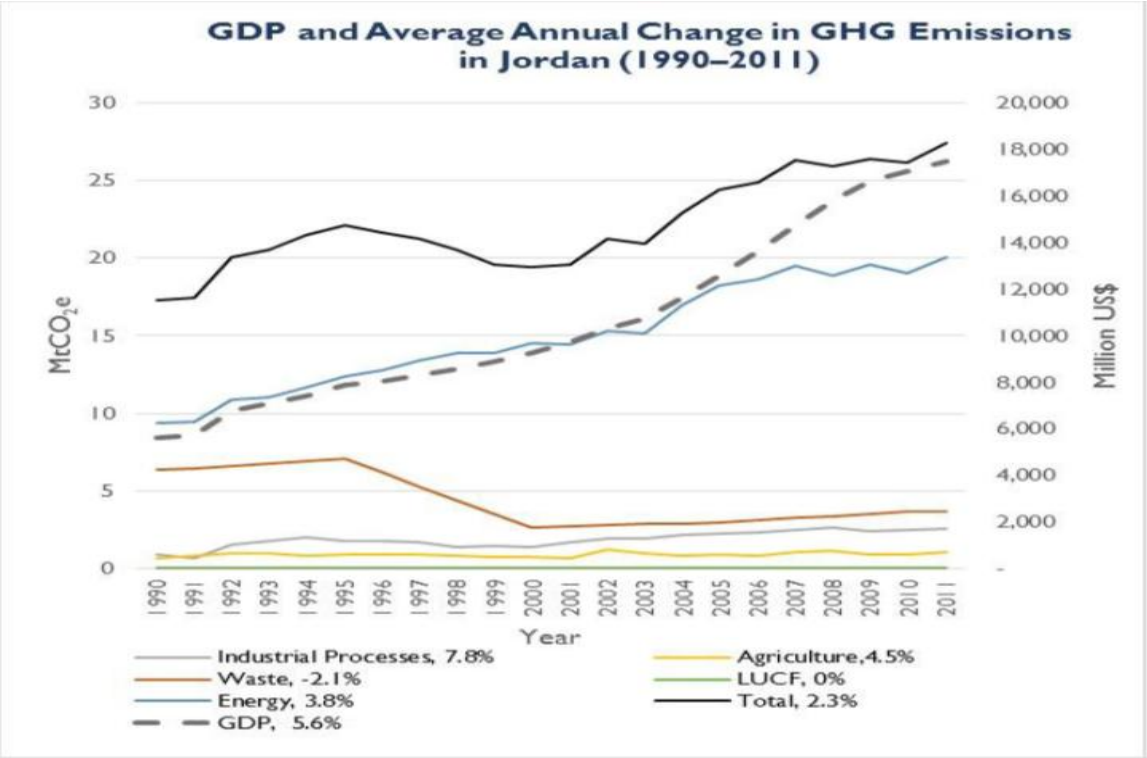


Figure 8: GDP and average annual change in GHG emissions in Jordan

Source: (TNC Report, 2014)

Old data from the Third National Communication (2014) is presented for comparison only; updated values are provided in BUR2 (2021).

The relationship between economic growth and the rise in emissions is given in figure (8). It is included in the findings, which highlights the equity dilemma in that communities in Jordan are characterized by high adjustment costs despite low per capita emissions, and international collaboration in climate diplomacy is essential.

Therefore, the evidence reveals that community-led programs serve as triggers of international diplomacy because they show resilience patterns, construct an equity narrative, and enhance the voice in negotiations of Jordan. Local practices in water conservation, renewable energy and integration of refugees are direct inputs in the North-South climate cooperation structures, and the same demonstrates how local efforts can help raise national stances on the international scene.

5. Discussion

5.1 Discussion Related to the First Research Question: How do community-based climate initiatives at the local level influence national environmental policies and their alignment with international environmental agreements?

The findings validate that the community-based projects in Jordan are not just supplements to the state-driven climate governance but work as the pivotal incubators of policy development. Real-world projects in local water conservation, including rainwater harvesting and cooperative irrigation, have created their examples, which were later institutionalized in the National Strategy and Action Plan to Combat Desertification (2015-2020) in Jordan. It is a diffusion pathway that aligns with the literature according to which community experiments are viewed as demonstration effects that can be extended to the level of the national system by means of policy emulation and norm socialization (Detges, 2017). The policies of Jordan, integrating the practices at the grassroots level into the national strategies, reflect the polycentric logic of

climate governance, which involves converging the multiple levels of authority in order to strengthen the follow-up of the international commitments (Bulkeley, 2015; Horton et al., 2016).

A striking example is the concept of decentralized renewable energy solutions tested in rural communities and refugee camps. These initiatives confirmed the economic and social viability of solar energy in marginalized settings and were informative to the National Green Growth Plan (2017). This result explains why Oberthür and Groen (2017) define co-production of NDCs as the bottom-up evidence strengthening the viability and validity of national commitments. This mechanism is supported by the theoretical framework: according to the constructivist approach, grassroots actors impact state behavior by introducing new rules of fairness, resilience, and inclusivity into the discourse of the climate in the country (Zaree et al., 2016). These local projects also minimize uncertainties and transaction costs since they offer trial models that ease an institutional learning process (Parrock & Lory, 2020).

Further, the contribution of the community-based organizations to the data provision on the level of emissions and resource utilization provides a good example of how the transfer of knowledge between the local and national levels makes Jordan more susceptible to international reporting requirements. Detges (2017) frames this as a knowledge platform, in which a localized science and risk analysis finds its way into the foreign-policy agendas, thus supporting the plausibility of the submissions of the UNFCCC by Jordan. This mechanism shows how the conceptual feedback between the top-down institutional requirements and the bottom-up legitimacy are demonstrably narrowing the resources of the intention-action gap that so far defines the climate governance system (Harvey, 2019; Neufeld, 2019).

Overall, the results indicate that community-based climate action in Jordan affects national environmental policies in three interdependent ways, namely, demonstration of plausible practices, credible data provision, and equity-oriented norm socialization. These mechanisms make national policies more in line with international agreements as they enhance feasibility, legitimacy, and inclusivity, which resonates with the multi-scalar climate governance that is demanded in the literature (van der Pluijm & Melissen, 2007; Liste, 2017). In this way, local intervention in Jordan not only informs the national strategy, but it is also a co-producer of the abilities of the state to fulfill its international obligations.

5.2 Discussion Related to the Second Research Question: In what ways can community-led climate action serve as a catalyst for international environmental diplomacy, particularly in fostering North–South cooperation and addressing equity concerns in climate negotiations?

It is also evident in the findings that the community-based efforts by Jordan can go beyond domestic policy by becoming a diplomatic resource in global climate talks. The case of local initiatives addressing the problem of water shortage in the refugee-hosting areas illustrates how the problem of equity is applied in the grassroots. The factor of vulnerability inclusion in the adaptation strategies by Jordan provides empirical data of equality; therefore, its voice becomes more meaningful in its demand of climate finance. This shows that equity is diplomatically convincing when it is based on real-life community experiences, as argued by Rajamani (2016). Sengupta and Friedman (2019) also confirm the results by observing that local narratives solidify debates of distributive justice between the Global North and South.

Renewable energy projects that were initiated by communities also strengthened Jordan in the context of North-South cooperation. The example of small-scale donor-funded solar and wind projects demonstrates that local actors could facilitate the establishment of financial and technical collaborations, which aligns with the idea that local results by Delgado (2019) could minimize global equity issues and rational collaboration. The examples of the cases discussed can be interpreted through the lens of constructivist approach in which community-based practices transform international diplomacy by incorporating new standards of justice and sustainability into the scripts of negotiations (Zaree et al., 2016). They also echo the liberal-institutionalist argument that common standards and proven outcomes of community pilots

facilitate cross-border collaboration by reducing the costs of transactions and lack of understanding (The Federal Foreign Office, 2020).

Moreover, community-based data gathering, part of the Third National Communication of Jordan (2014), illustrates how grassroots knowledge is processed into the science policy interface of international diplomacy. This is consistent with the paradigm of Detges (2017), where local evidence can be used to support credibility in foreign-policy domains, and with the Council of the EU (2020), which insists on communicating the fact that community resilience outcomes can provide a peace dividend, which consequently enhances the credibility of diplomacy. By doing so, local projects not only reduce the risks of climate change but also promote the idea of Jordan as a vulnerable state, yet as a proactive one to play the negotiation game with the North better (Cladi & Locatelli, 2016; Krampe et al., 2018).

On the one hand, neorealism would imply that Jordan uses the community outcomes as resources to recover resources and improve the national security (Antunes & Camisao, 2018), whereas on the other hand, constructivism would concern the changes in the same community outcomes as the norms of fair and responsible outcomes of those negotiations. The two sides agree on the effectiveness of their depictions regarding why the calls of USD 5.7 billion in external support by Jordan are reinforced with practices that are tested locally and answer equity issues with viable solutions.

The Al-Munther Al-Monakhi Initiative also demonstrates the way community-based engagement may work as a type of societal climate diplomacy that enhances national policy and global climate regulation. Published as a voluntary initiative by the author as a Jordanian climate activist at COP29, the project converts the principles of the Paris Agreement and updated NDCs of Jordan into culturally-based, human-oriented practices with the focus on inclusivity, climate justice, gender-responsible involvement, and nature-based solutions. It operates on the principle of complete volunteerism, and it shows that the action on climate starts with individuals and communities taking charge of the future generations. The initiative can change the existing technical scientific knowledge into accessible and actionable information through empowering young people, women, and media professionals to deliver information on climate change and influence its behavioral change in order to engage more people. Its adaptable and repeatable framework points out the role of bottom-up movement in filling in the gaps of national adaptation considerations and adding to a more human-focused global climate agenda.

In general, the findings reveal that community-based climate action triggers international diplomacy by: (1) making equity issues workable, (2) allowing the North to engage in cooperation with the South based on exemplary local action, and (3) building credibility in Jordanian negotiations through empirically supported narratives. This corroborates the perspective presented in the literature that action on a community level is not merely instrumental but forms part of the problem-solving ability of climate diplomacy (Council of the EU, 2020; Climate Diplomacy, 2020). Therefore, the grassroots climate program is an effective and symbolic asset that puts Jordan in the international climate regime.

6. Conclusion

This study aims to explore the processes by which grassroots efforts affect national environmental policy and how the policies are consistent with international environmental agreements, and the way in which the grassroots efforts come out to spur international diplomacy, especially in promoting North-South co-operation and equity discourse. The analysis was based on three qualitative research designs, guided by an interpretivist philosophy and a community-based approach to research and the analysis of three purposively selected community-based initiatives in the MENA region: water conservation in Jordan, grassroots reforestation in Morocco, and urban flood resilience in Saudi Arabia. Data were gathered by means of document analysis, semi-structured interviews and secondary climate reports and the reliability of the data was guaranteed by audit trails and triangulation.

The findings affirm that community-based climate action has a constitutive role in defining climate governance at the various levels. On a national level, the Jordanian grassroots water conservation projects affected the strategies of the country, including the National Strategy and Action Plan to Combat Desertification (2015-2020), by providing examples of how it may be done. Correspondingly, the pilot projects of decentralized renewable energy implemented in refugee camps and in rural communities informed the National Green Growth Plan of Jordan (2017) by confirming the viability of solar energy as a mitigation measure. These processes implement the so-called demonstration effect as mentioned in the literature when the local experimentation spreads upwards via the instigation of the policies and socialization of norms (Detges, 2017; Oberthür & Groen, 2017). In constructivist terms, the initiatives internalize norms of fairness, inclusiveness, and resiliency into state climate discourse (Zaree et al., 2016), whereas liberal-institutionalist theory highlights the impacts of bottom-up models of reducing uncertainty and advocacy of institutional learning (Parrock & Lory, 2020).

The study is consistent with the previous climate policy framework of Jordan, such as the Updated NDC (2021), the National Adaptation Plan (2021), and the Fourth National Communication (2023), which can all be described as an increased focus on integrated and community-based climate diplomacy.

At the international level, community-led practices turned into diplomatic resources, which enhanced the bargaining capacity of Jordan. The projects that dealt with water shortages in refugee-sheltering regions operationalized equity issues, which furnished arguments that supported the debates based on fairness and climate finance on the North-South lines. This dynamic correlates with the argument presented by Rajamani (2016) that the diplomatic leverage of equity becomes more successful when it is grounded in the concrete local reality. Similarly, small-scale renewable projects demonstrated the possibility of North-South collaborations, addressing global justice issues and establishing cooperation (Delgado, 2019). Community organizations were also contributing locally verified information to the Third National Communication in Jordan (2014), which led to the increase of the credibility of international submissions, which is the concept of the local knowledge platform as the framer of foreign-policy agendas expressed by Detges (2017).

The implications of these findings are significant. They propose that environmental diplomacy is to be envisioned as a multi-scalar process, with the community actors not being peripheral to the practice of environmental governance, but being at its core. Local programs offer legitimacy, viability, and equity platforms that enhance the credibility of NDCs, enhance bargaining resources and achieve international collaboration. This reiterates to policymakers the need to incorporate the grassroots players in the national reporting, budgetary allocations and negotiation plans.

However, there are limitations that have to be recognized. The qualitative nature of the study itself and the use of three purposely selected cases of the MENA limit generalizability. Furthermore, the community outcomes are usually diplomatically translated in an indirect manner and therefore, tracing the causal relationship becomes a complicated issue. The geographical range of study should be extended, and mixed-method techniques must be used in the future to measure the direct impact of community measures (e.g., the emissions decreased, the resilience obtained) on the outcomes of the negotiation process.

Recommendations include the institutionalization of local-to-global knowledge transfer platforms, a superior financial system that values community-led adaptation and international collaboration based on evidence of the community. Community actors should be incorporated not only in the national policy frameworks but also in formal diplomatic delegations, thus closing the gap that has always existed between grassroots practice and international negotiations.

This study is novel in its repositioning of environmental diplomacy as a top-down and bottom-up process, in which local players are active agents of climate governance but not passive

practitioners. The empirical connection between community efforts and national policy alignment and international bargaining power, the study contributes to a multi-scale model of climate diplomacy to predict the essential role of grassroots climate action in creating a more inclusive, equitable and effective global regime.

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