Executive Summary Report – Casablanca Workshop on Empowering Communities for Sustainable Energy Transitions

Joy Arkeh

Energy Transition in MENA: Local Challenges and Opportunities

Limitations in governance associated with capacity constraints, vulnerabilities in climate-impacted sectors, and inequal distribution of resources continue to strain national climate projects and the operability of local organizations. By prioritizing de-centralized and inclusive renewable energy solutions- such as social mapping of pre-existing climate vulnerabilities within marginalized communities- local authorities can empower CSOs to expand technical knowledge and labor capacity in the renewable energy sector. By adhering to global frameworks such as the Paris Climate Agreement, MENA subnational actors may promote green practices and attract international rhetorical and financial support as part of the renewable energy transition.

Morocco is notably ahead of neighboring countries in terms of capacity and regulatory infrastructure in relation to a green energy transition. Still, a lack of inter-agency cooperation and stagnation stemming from disagreements on water desalination and soil regeneration lead to waste and stymied development. Moroccan governmental authorities may benefit from a reworking of the development model by focusing on medium- and long-term timelines for energy transition projects, as well as low-carbon economic development. Framing energy transitions around short-term plans and expenses limits the cohesion of climate policy and negatively affects the adaptability of climate actors while threatening the returns of stakeholders and donors. Integration of civil society, the labor market, and global financiers remains a priority in manufacturing a bottom-up, inclusive approach to energy transition may reaffirm Morocco's regional strength. The Moroccan Low Carbon National Strategy (SNBC) provides an essential framework through its emphasis on synergies between sectors for the efficient implementation of such a transition. This national strategy prioritizes an "energetic sovereignty"- a diversification of energy supply to mitigate dependance on specific green technologies rather than cross-sectoral needs at-large.

In Lebanon, subnational governmental institutions are well equipped to support local needs due to their practical proximity to constituents. While this improves the experience of on-the-ground organizers, inadequate access to capital and technical expertise remains a barrier in the operations of non-governmental actors. Increased regional cooperation could facilitate a necessary transfer of specialized personnel and capital. Through working with organizations such as UN-ESCWA and MEETMED, local authorities may satisfy budgetary demands and greatly expand administrative capacity in the pursuance of a green transition. By integrating Sustainable Energy Access and Climate Action Plans (SEACAPs) into local governance climate vulnerabilities may be more accurately assessed, leading to the development of cohesive long-term projects. Integrating climate finance into the development and implementation of SEACAPs may allow for an immediate remedy for gaps in capital and climate-related data.

Renewable Energy and Local Resource Management: Lessons from the MENA Region

Egypt is successfully undergoing a renewable energy transition through the construction of large-scale national electrical projects. The Benban Solar Park- the largest of its kind in the MENA region- will eliminate an estimated 2 million tons of carbon emissions per year; similar electrical projects, such as the Leklan Power Project, are allowing Egypt to surpass their annual goal of producing 42% of its electricity from renewable sources- a target which they project to surpass by 28% in 2025. The relative success of Egypt's renewable energy transition may be attributed to such projects dedicated to increasing energy capacity- specifically through hydro, solar, and wind-based energy. Projects obtain funding through the careful inclusion of private-sector actors in the energy transition process. Initiatives such as Build-Own-Operate (BOO) and institutions such as the New and Renewable Energy Authority (NREA), as well as a progressive income tax, allow Egypt to incorporate capital and technical expertise from the private-sector into the development of large-scale and local renewable energy facilities.

Included in Egypt's national energy development project is the export of renewable energy to occupied Palestine. While Israeli forces control ~80% of the energy supply of West Bank and Gaza, Egypt plays a unique role as a facilitator of the renewable energy transition in a nation with limited access to energy production facilities. Within Palestine, renewable energy represents an affordable opportunity to achieve energy independence from occupying forces, a strategic necessity in the advancement of Palestinian sovereignty and the revival of the transport and private sectors. Palestine ranks among the most climate-affected countries, as persistent droughts and the destruction of irrigated land by occupying forces have significantly hindered the agricultural sector. Droughts attributed to climate change and land theft in the West Bank have significantly depleted the output of olive harvesters, for example. Energy transition in Palestine primarily involves the augmentation of photovoltaic panels, although political and legislative delays, as well as shortages of water and electrical power remain obstacles in the implementation of renewable energy technologies. In Palestine and Lebanon, participative and bottom-up approaches remain preferable due to their activation of civic engagement and the empowering involvement of women in innovating and developing renewable technology. The REGEND framework published by UN-ESCWA offers an ideal path towards de-centralized capacity building in this regard.

Climate Impacts- Local Vulnerabilities and Response Mechanisms

Climate policy must directly respond to and originate from the threats posed to the region's marginalized communities. Among such communities are residents of rural territories, who have endured perpetual underfunding and neglect from their governments despite the immediate risk to agricultural production and quality of life posed by climate change. Local actors, including local authorities, civil society organizations, and women in the rural sector, must be empowered in addressing gaps in state capacity. Diminishing crop yields and climatic migration threaten the stability and output of agricultural communities, which in turn threatens the economies and resource reserves of urban centers. In Morocco, for instance, women are disproportionally impacted by "rural exodus", a phenomenon involving men relocating to urban centers for employment opportunities, often leaving women to handle domestic and agricultural responsibilities.

A significant opportunity to develop local expertise and competence exists from the vacuum created by state insufficiencies. Throughout the Maghreb and Egypt, incomplete modernization projects have depleted the adaptive capacity of rural communities, leaving them vulnerable to natural disasters and

enabling mass climatic migration instead of resilient responses. Institutional neglect of the agricultural and fishery sectors - because of administrative biases towards industry - has stagnated development in these areas. As a result, agricultural communities are given tools to adapt without access to adequate education on sustainable and practical use, leading to inefficiencies and waste. A return to ancestral techniques may boost resiliency in certain cases, while investments in practical education by local authorities and sub-national organizations may fill knowledge gaps in other cases. A decentralized approach to the energy transition may enhance the capacity of local rural actors in their implementation of sustainable techniques, particularly in maximizing the role of women in the development of renewable energy technologies. Expanding access to specialized education would allow for women to more seamlessly integrate into the energy transition, bolstering communal capacity and representation in local climate policy by proxy.

In summary, strengthening human capital in rural areas is essential to achieving climate resilience. Short-term adaptation measures must take precedence, supported by long-term investments in education on sustainable development and disaster resilience. The effective use of available technologies depends on foundational knowledge, which remains uneven across regions. Traditional techniques—such as drought-resistant grain storage methods in the Souss region—can complement innovative solutions when properly leveraged. Additionally, public policies must be realigned under a unified vision that centers sustainability rather than fragmented economic priorities.

Governance Models in Energy Transitions - Enhancing Institutional Capacities and Balancing Local Autonomy with National Policy

Egypt and Morocco both foster a need for autonomy at the sub-national level to reach long-term transition targets. Egypt aims to source 30% of its energy from renewable sources by 2030, primarily through comprehensive designations of land for solar and wind energy facilities. While the Egyptian and Moroccan states play a significant role in funding and incentivizing the development of renewable energy, bureaucratic rule cripples the resilience and adaptability of local authorities, who depend on expansive local governing structures as well as national support to conduct efficient development projects. An ideal model would consist of a central state orchestrating long-term infrastructural plans- including land reform, incentive structures for private engagement in the energy transition, coordination of cross-sectoral matters, etc.- to eliminate regional fragmentation and over-specialization in one realm of energy production. The state should empower local authorities to address pressing and immediate issues in accordance with national aims for a sustainable energy transition, which may activate civilian participation and better align policy with specific regional needs.

In 2024 Oman ranked 11th globally in energy consumption per capita, with 99.6% of energy originating from non-renewable sources. Oman has set an ambitious production target of one million tons of renewable hydrogen by 2030. The process for creating green hydrogen energy requires freshwater, of which Oman is notably shorthanded. Oman must investigate how to better supply this source of energy at local and global (exportations) levels. For some projects, Oman has embraced a participatory governance approach involving civil society and private sector actors as well as women and youth. Alongside focusing on more “simple” or local level projects that strengthen local infrastructure, as seen with the implementation of solar power plans in Omani public schools, for instance, Oman must capitalize on

strategic projects in the energy sector in order to enhance “local added value” and the national labor market.

The energy transition has to adhere to natural limitations, not necessarily administrative boundaries. The climate crisis brings to the forefront tensions between regional and central governance and sectoral fragmentation, as climate is inherently cross-sectoral and affects both national and local policy. To ensure climate policy is both inclusive and effective, governance models must prioritize institutional capacity building at the local level, particularly in the energy transition. Local authorities require adequate human and financial resources to plan and implement sustainable development strategies that reflect the needs of their communities. Integrating national policies into municipal frameworks is essential to avoid sectoral fragmentation and foster coherence across governance levels. This coordination should extend to all phases of policymaking—including planning, implementation, monitoring, and reporting—with active participation from local actors and citizens. Strengthening transparency in climate finance and establishing independent evaluation mechanisms can improve accountability and public trust. In addition, cross-sectoral partnerships with civil society, scientific institutions, and the private sector should be incentivized to expand expertise, drive innovation, and enhance the effectiveness of local energy transitions.

The Role of Private Sector and Civil Society in Local Energy Transitions

The matter of resource security and sustainability is an utmost concern for the MENA region, particularly due to strained water resources. Because of a general lack of naturally occurring bodies of water, desalination is an omnipresent technique in the production of freshwater- over 60% of global desalinated water is produced in the MENA region. In Oman, desalination is an energy-intensive process, often tapping fossil fuel reserves to satisfy energy requirements; Oman’s policies need to better consider these long term effects. Because of these constraints, resources such as water depend on the use of sustainable practices at a national level, which requires general education on sustainable practices. Education is a primary sector requiring the expertise and labor capacity of civil society organizations in the environmental space.

Civil society aids in the development of adaptable infrastructure on a local level, such as the construction of solar irrigation for farms in the Beqaa Valley, Lebanon. Lebanon has reportedly already satisfied its emissions targets for 2030, largely due to the on-the-ground work of civil society organizations in the installation of solar panels and community education on sustainability, as well as international financial support from organizations like UN-ESCWA, international embassies, USAID, UNCHR, and UN habitat. Solar panels in Lebanon are cheaper than relying on private generators; as a result, a lot of them have been imported and job opportunities created.

The electrical grid of Palestine is strained primarily by an overreliance on imported energy from Egypt and unpredictable electricity cuts by occupying forces since October 7th in the Gaza Strip. The private sector is crippled by the destruction of electrical infrastructure and the widespread destruction of Israel’s bombing campaigns, and by Israeli military activity in the West Bank. A lack of available land for developmental purposes strains the capacity of Palestinian actors to install solar, geothermal, and wind energy farms, leading to a severe lack of renewable infrastructure. The private sector has been unable to bridge the capital lost by Israel’s aid blockade, crippling the potential for a sustainable energy transition. Almost all of Gaza’s water desalination facilities have become targets of war, leading to a major water

crisis. The ongoing genocide also hinders the ability of sub-national organizations to adequately coordinate environmental policy and oversee the implementation of long-term projects.

An effective approach to climate and renewable energy governance requires a clear understanding of the distinct roles played by civil society and the private sector, alongside a nuanced application of localization principles. Civil society primarily functions in service delivery and advocacy, representing community interests and bridging gaps in public outreach. The private sector contributes through financing, workforce engagement, and supply chain roles such as importing critical technologies. Localization involves prioritizing technical, human, financial, and natural resources at the local level to address region-specific challenges effectively. While renewable energy policy benefits from centralized frameworks to attract investments and ensure regional integration, decision-making and resource allocation must be carefully balanced between national and local actors. Local authorities often bear responsibilities related to implementation and consumption management—especially in sectors like municipal energy and agriculture—yet may lack technical capacities, underscoring the need for support and capacity building. Successful climate action demands a holistic strategy that empowers local governance structures through access to climate finance, enhanced mobilization powers, and inclusive partnerships with civil society and private entities. Such an integrated model ensures that both top-down policies and bottom-up initiatives work in concert to achieve sustainable, locally relevant outcomes.

Regional Cooperation in Energy Transition: Bridging Local and National Bridges

Regional cooperation is essential for overcoming shared challenges such as resource scarcity, financing gaps, and infrastructure limitations across MENA. Oman's Vision 2040 aims to achieve 30% renewable energy by 2030, with projects like the Sharquiyah Desalination Plant (17 MWp) and wind farms already underway. However, security constraints, including military control over desert areas, hinder solar project deployment. At the local level, Oman engages municipalities through public awareness campaigns and international forums like the Hydrogen Summit, underscoring the importance of aligning practical local initiatives with national ambitions.

Lebanon's energy transition faces inequalities amplified by economic crises, resulting in reliance on low-quality solar installations and imported gas and electricity from neighbors. Regional discussions focus on securing stable energy supplies and mobilizing international financial support. A regional fund should be considered to assist disadvantaged countries in scaling renewable energy access, thereby fostering equitable energy security and economic resilience.

Morocco's near-universal electricity coverage and clear governmental energy transition strategy provide a strong foundation. Still, civil society advocates for greater inclusion in policymaking, particularly to expand public-private partnerships (PPPs) that harness cross-sector expertise. Morocco's energy policy also reflects concerns over water and food security, stressing the need to alleviate energy cost pressures. Accelerating decentralized projects and cross-border energy trade is critical to harmonizing local, national, and regional efforts.

To ensure an effective regional energy transition, a dedicated regional organization should be established to coordinate energy, water, and food security initiatives. This institution would develop clear plans for

regional cooperation, manage joint investment strategies, and address persistent barriers such as misaligned national priorities, political reluctance, competition over natural resources, and the absence of technical infrastructure. Existing gaps in investment policy, institutional dialogue, and cross-border coordination have hindered progress and limited the scalability of local efforts. A well-structured regional framework could mitigate these issues by capitalizing on shared linguistic, cultural, and security ties; creating a unified market for investment; and fostering cooperation in education, research, and technology. By sharing financial responsibilities and jointly managing natural resources, MENA countries can unlock regional potential while protecting national interests. Institutionalizing mechanisms for knowledge exchange and inclusive stakeholder engagement—across governments, civil society, and the private sector—will further strengthen collective resilience and accelerate progress toward sustainable energy systems.