



The water-energy-food nexus in West Africa

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Water, energy, and food are the building blocks of life. Access to these resources is necessary for poverty alleviation and sustainable development. There is increasing realisation that these resource systems cannot be looked at in isolation and that they are interrelated. There is an urgent need to look at these systems as part of a nexus. Despite this realisation, there is limited understanding of what the nexus means for rural development and for those based in rural areas. This brief is aimed at policymakers, development agencies, and other stakeholders dealing with energy access and broader issues of rural development in West Africa. It summarises some of the key findings and recommendations of a workshop held by the Smart Villages Initiative in Saly, Senegal in August 2016 with the support of Energy4Impact. The aim of the workshop was to develop a better understanding of the water-energy-food (WEF) nexus in West Africa by bringing together key frontline workers in the region.

Within West Africa, a major portion of the population is based in rural areas, and agriculture is the main source of employment. The many development challenges fac-



ing the region require a shift in thinking and policymaking from a siloed approach to one that is more adept at understanding and dealing with the competing interests and needs of, and potential synergies between, the water, energy, and food sectors. This shift also requires local institutions and communities to play a stronger role.

For their part, policymakers, development organisations, and other relevant stakeholders at the global, regional, and national level should take the following measures to develop greater understanding about the interrelated nature of WEF systems, and to establish the frameworks and approaches necessary to address the challenges:

1. Policymakers should put in place an enabling environment for cooperation between the public and private sectors on issues related to the WEF nexus and should work with the private sector to deal with nexus-related issues. Developing such partnerships could play an important role in removing some of the major barriers to sustainable development in rural areas. Donors and development agencies should collaborate, not compete.
2. Dealing with the risks and opportunities associated with nexus thinking will require political commitment from governments in developing countries and support from multilateral and bilateral donors. Investment in initiatives such as off-grid energy projects in rural areas should be increased: they are high risk but contribute positively to local development. Improved access to energy in rural areas can have a positive impact on food security and rural incomes by improving access to improved crop processing technologies as well as groundwater irrigation. Access to crop processing technology can reduce post-harvest losses and increase the value of products to be sold, while the availability of groundwater irrigation is likely to increase yields.
3. There should be a shift away from “charity” to a market-based approach. This will require affordable finance (including effective micro-credit) to be made available to villagers, farmers, and entrepreneurs. Ways must be found to enable village-level projects to access international funds for climate change mitigation and adaptation, etc. A market-based approach will also require the building of skills and technical capacity, founded on improvements in education more generally. Otherwise, the implementation of projects will continue to be hindered by lack of capability.
4. Efforts should be increased to improve collaboration between different sectors and between ministries within governments. Such initiatives can help promote an integrated development approach where decision making is informed by the opinion and concerns of different sectors and bodies operating in sectors associated with the WEF nexus. In the absence of such an approach, it is likely that resource systems will be utilised in isolation without understanding the impact of over exploitation in one part of the system on other constituent systems within the WEF nexus.
5. Aid agencies, NGOs, and public sector organisations should involve local communities in designing development projects. Involving the local community can ensure that the project is in sync with their requirements, lifestyles, and cultures and can have a positive impact on its long-term sustainability. It also ensures that local communities have a stake in development projects and that there is greater buy-in. Local cooperatives can also play an important role, providing effective representation while reducing transaction costs for bodies leading interventions.
6. While ensuring that water, energy, and food security goals are met, development stakeholders should also look at the broader impacts of projects on rural employment and income generation. Income generation opportunities for local farmers can improve the sustainability of projects and help create new jobs for villagers. Furthermore, there needs to be a better understanding of how development interventions affect people living in nearby areas. In some cases, projects that have been designed in isolation have negatively affected neighbouring communities.
7. Public awareness about the interrelated nature of WEF systems should be increased. The local and international media have an important role to play. Reporting by media outlets on issues related to the WEF nexus can create greater pressure on national governments to incorporate nexus thinking in policy-making. Through case studies, the media can highlight how,

in rural areas where agriculture is such a large part of people's lives, lack of access to energy constrains productivity and has a negative impact on food and water security of villagers.

8. More initiatives should be undertaken to support local innovation, which can play an important part in helping developing countries deal with some of the trade-offs and constraints of the WEF nexus. Understanding local technological capabilities can help in designing mechanisms that can further spur local innovation.

Such innovation can have a positive impact on sustainable local development.

9. Women should be involved in debates on the WEF nexus and sustainable development. Women are most likely to face the brunt of nexus-related problems and are often affected by lack of resources such as water and energy. Furthermore, they are likely to be marginalised despite their multiple contributions within the house and in the agriculture sector. To reduce their workload, women should be consulted while undertaking

interventions that are aimed at designing and disseminating improved cookstoves. As cooking is one of the most time- and resource-intensive activities for many women in rural areas, their input also needs to be solicited in programmes to encourage the adoption of new and better domestic appliances.

10. More attention should be given to following up projects to ensure that lessons are learned. Universities researchers have an important role to play in such studies and will need to take an interdisciplinary approach.

Notes

The Smart Villages Initiative

We aim to provide policymakers, donors, and development agencies concerned with rural energy access with new insights on the real barriers to energy access in villages in developing countries—technological, financial and political—and how they can be overcome. We have chosen to focus on remote off-grid villages, where local solutions (home- or institution-based systems and mini-grids) are both more realistic and cheaper than national grid extension. Our concern is to ensure that energy access results in development and the creation of ‘smart villages’ in which many of the benefits of life in modern societies are available to rural communities.

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Energy4Impact

Energy4Impact (formerly known as GVEP) was launched in 2002 as a World Bank initiative and in 2006 it was registered as an NGO. The organization has offices in East Africa and in Senegal. The organization provides support to businesses that aim to accelerate access to energy in developing countries. Energy4Impact's basic philosophy rests on the premise that as opposed to direct donations, business development is likely to be more sustainable. Since its inception, Energy4Impact has supported more than 260 small and medium enterprises and 2,800 micro enterprises. It has also raised capital of US\$86 million and helped create 7,800 jobs in rural areas. Over 10 million people have been provided with improved access to energy through these projects.

In Senegal, Energy4Impact, in partnership with the Social & Ecological Management (SEM) fund, is leading on the implementation of two initiatives funded by the ENERGIA Network. The first initiative, “Energy opportunities for women in Senegal”, aims to support the development and growth of 250 women SMEs across the value chain, and to increase productive use of energy by women across the value chain. The second initiative, “Tenderizing Energy Policies in Senegal” aims to a) advocate for the integration of clear gender objectives within the SE4ALL national action plan and investment prospectus and to increase awareness of the importance of gender and energy amongst key regional SE4All stakeholders and b) to implement a national campaign on energy, women, children & health, and other key events. Thus, Energy4Impact is implementing a programme to support development and growth of energy focused businesses in 4 countries in Africa, including Senegal: The objective is to strengthen the capacity of micro, small and medium enterprises (MSMEs) to provide access to energy to rural communities as well as to support them in productive uses of energy.