



MINISTRY OF WATER, SANITATION AND IRRIGATION
KENYA WATER INSTITUTE

Bridging Knowledge and Action: Capacity Building for Cross-Sector Collaboration in the FEW Nexus (Kenya)

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Introduction: The FEW Nexus in Kenya



Overview of FEW Nexus

The Food-Energy-Water (FEW) Nexus

addresses the interconnected challenges of food security, energy access, and water resource management. Kenya faces pressing issues in all three areas due to population growth, climate change, and economic transformations.



Need for Integrated Solutions

To achieve both short-term and long-term sustainability goals, Kenya must foster cross-sector collaboration and resource efficiency within the FEW Nexus framework, integrating innovative approaches for resilience.



Central Role of Capacity Building

Empowering individuals and institutions with relevant skills, knowledge, and resources is critical for holistic solutions. The Kenya Water Institute (KEWI) plays a vital leadership role in driving these capacity-building initiatives.



The State of the FEW Nexus in Kenya

Key Challenges

Kenya grapples with food insecurity, uneven energy access, and water scarcity. Factors include dependence on rain-fed agriculture, inadequate infrastructure, climate change, and limited access to information systems and data.

Progress and Policy Reforms

Despite obstacles, Kenya has made progress through policy reforms promoting renewable energy, centralized water management, and agricultural modernization, underscoring the need for more extensive cross-sector collaboration.



Notable Food, Energy, and Water Projects

Flagship FEW Projects

Major initiatives include the TWENDE Project (climate adaptation in arid counties), Ewaso Ng'iro North Conservation Project (catchment rehabilitation), and the Northern Collector Tunnel (urban water supply).

Renewable Energy Expansion

Significant investments in hydropower (Seven Forks dams), geothermal (Olkaria), wind (Lake Turkana), and solar (Garissa, Malindi) have enabled greater energy access and sustainability, driven by technical capacity building.

Irrigation and Agricultural Innovation

Agribusiness and irrigation schemes and greenhouse farming contribute to food security and economic growth—many using modern techniques like drip irrigation supported by renewable energy sources.



Capacity Building: Foundation for FEW Nexus Solutions

1

Individual Level

Enhancing technical skills in areas like irrigation management, renewable energy, watershed protection, and community resource planning, ensures effective implementation and sustainability of projects.

2

Institutional Level

Improvement of organizational coordination, service delivery, modular training programs, and alignment with technology and environmental needs are vital for managing large-scale FEW initiatives.

3

Systemic Level

Integrated policy frameworks, harmonized regulations, and collaborative platforms enable evidence-based planning, knowledge sharing, and innovation, fostering long-term resilience and inclusivity.



Bridging Research and Practice: The Role of KEWI

A critical challenge in Kenya is the gap between FEW research and actionable policy implementation. KEWI acts as a key knowledge broker, facilitating the flow of research insights into practical solutions through workshops, conferences, and partnership platforms. Its collaborations with local and international partners ensure the dissemination of best practices and the integration of innovative approaches. This active knowledge exchange helps align academic findings with community needs, enhancing the impact and relevance of FEW sector interventions.



Action-Oriented Collaboration Strategies

1 Stakeholder Engagement

Boosting collaboration through trust-building and clear communication among government, private sector, academia, and communities, ensures alignment with national priorities and project ownership.

2 Leveraging Technology

Digital platforms facilitate information sharing, coordination, and stakeholder involvement across the FEW Nexus, enhancing the scalability and efficiency of interventions.



KEWI's Leadership in Cross-Sector Capacity Building

Comprehensive Academic Programs

KEWI offers diplomas and certificates in water engineering, irrigation, and resource management, directly targeting FEW challenges and imparting technical expertise to students and professionals.

Targeted Short Courses

Short courses focusing on renewable energy, water pumping, and groundwater assessment address specific skill gaps, contributing to the adaptability and success of FEW projects.

Strategic Partnerships

Collaborations with organizations like JICA, NUFFIC, AFDB, and international institutions establish KEWI as a regional training hub, enabling integrated, sustainable solutions.



Policy Context for FEW Nexus in Kenya

Legislative Foundations

The Constitution of Kenya (2010) enshrines access to food, energy, and water as fundamental rights. Laws and policies such as the Water Act (2016), Irrigation Policy (2017), and Energy Policy (2018) set guidelines for action.

Need for Policy Alignment

Effective capacity building requires harmonized sectoral policies, adequate funding, and cross-sector collaboration for embedding development goals and ensuring systemic change.

Challenges and Opportunities in Capacity Building



Barriers to Success

Challenges include funding limitations, fragmented regulatory frameworks, resource disparities across counties, weak data-sharing, and insufficient stakeholder alignment.



Emerging Opportunities

The rise of digital technologies, strong international partnerships, and Kenya's devolved governance structure offer new pathways to advance capacity-building and integrated FEW sectoral development.



Recommendations & Roadmap for Sustainable Progress

Joint Training & Funding Initiatives

Establish collaborative FEW Nexus programs and demonstration hubs via international partnerships and joint proposals, using blended learning and open-source materials.

Research, Outreach & Innovation Hubs

Spearhead joint research clusters, action research, and creation of community co-creation models. Innovation hubs should nurture local entrepreneurship with strong industry linkages.

Benchmarks, Exchange, and Policy Advocacy

Implement benchmarking with global peers, foster student and faculty exchanges, and institutionalize national dialogues. Develop robust monitoring, evaluation, and learning systems for continuous improvement and