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Information as infrastructure

Addressing water and energy constraints of cassava processors in Nigeria

SEI brief
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Key messages

- This brief outlines how better communication may help cassava processors in Oyo State, Nigeria, address water and energy shortages that have constrained their productivity and responsiveness to consumer demand.
- The insights and recommendations in the brief stem from focus group discussions held with cassava processors and representatives of the Oyo State Ministry of Rural Water Supply and Sanitation and the Oyo State Ministry of Energy and Mineral Resources. The discussions were led by early-career researchers who participated in the Collaborative Learning School 2025 of the SustainFood Network.
- The discussions suggested that processors' challenges in accessing sufficient water and energy arose largely from a lack of awareness and use of available government infrastructure and support services.
- The authors recommend steps that can improve communication between state-level government water and energy ministries, agricultural extension services and processors to help meet customer demand, improve livelihoods, and use resources more efficiently and sustainably.
- Though the insights surface from sessions targeting one agricultural product (cassava) and region (Oyo State), the authors note that similar communication barriers likely affect agro-processors in other low-income regions working with other foods in other parts of Nigeria and beyond.

Background

Critical challenges face members of the Cassava Processing Association, which operates the processing hub in Kukumada, Egbeda Local Government Area, Ibadan, Oyo State, Nigeria. Established in 1996, the association brings together 250 smallholder processor members, most of whom are women. They struggle to access both the amount of water and the reliable energy needed to meet customer demand – even though government support services to address such shortages exist.

In May 2025, a group of interdisciplinary early-career researchers affiliated with the Collaborative Learning School of the SustainFood Network sought to examine the issues surrounding the cassava processors' challenges and ways that could help surmount the difficulties they experience.

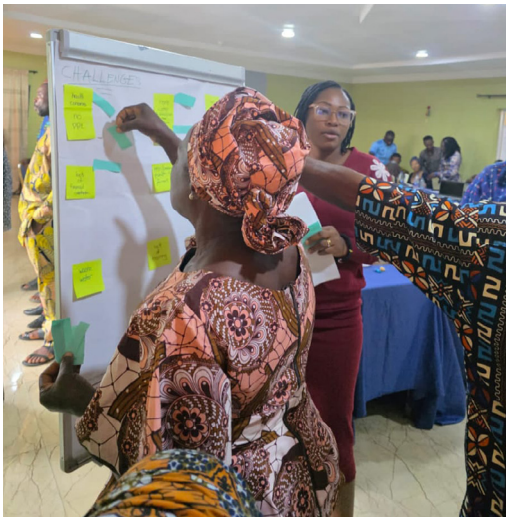
To that end, they organized two discussions: the first with cassava processors alone, and the second with processors and policymakers.

The eight cassava processors who participated in the first session highlighted key water and energy challenges they confront in daily processing of cassava into staple, local food products such as fufu, garri, starch, and elubo, in response to customer demand.

Key challenges they identified include the following: insufficient water access for cassava processing, intermittency of solar power used to operate the hub's water pump, small processing land space, exposure to smoke from firewood combustion

The cassava-processing hub in Kukumada, Oyo State.
Photo: Joseph Paul Omaye / Collaborative Learning School 2025 / SustainFood Network

A woman peeling cassava in the cassava-processing hub in Kukumada, Oyo State.
Photo: Bamigboye Oluwaseun Tosin / Collaborative Learning School 2025 / SustainFood Network



Early-career researchers examining the issues surrounding the cassava processors' challenges in a focus group discussion held in Ilaji Resorts, Oyo State.
Photo: Price E. Paige / Collaborative Learning School 2025 / SustainFood Network

during processing, inadequate funding for raw cassava purchases, limited agricultural extension and advisory services, a lack of drying facilities, and poor access to export links. The discussion also revealed that many processors lacked information on available government support mechanisms, procedures to make service requests, and the appropriate institutions to contact regarding water and energy services. The absence of awareness of such information limits processors' ability to benefit from existing infrastructure and services.

The links between water, energy and food, as illustrated by cassava processing

During the discussions, processors emphasized that cassava processing is a water-intensive and energy-dependent activity. Water is required for washing, soaking, fermenting and sieving. Energy is required for grinding, pressing, drying and cooking. Although a solar-powered water pump is available to members of the association, water supply remains inadequate during periods of limited sunlight, reducing processing capacity and affecting income generation (Figure 1). Water access is also limited by a lack of connections to existing pipe-borne systems in the community where the processing hub is situated.

> *"Despite the availability of a solar-powered pump, the water is insufficient, particularly during cloudy or non-sunny days, leading to a loss of income."*
> – Cassava processor in Kukumada[1]
>
> *"Even though the community where the hub is located has access to the government's pipe-borne water, the processing hub is not connected."*
> – Cassava processor in Kukumada[1]

When access to either water or energy is constrained, food-processing efficiency declines, product quality suffers, and post-harvest losses increase. These interlinked constraints reduce the productivity and profitability of processors, who depend on adequate water, energy, and infrastructure to carry out their operations.

1 Comments were taken from focus group discussions. Participants in the discussions were given anonymity.

How gaps in information perpetuate the challenges

Following the initial focus group discussions, researchers facilitated a meeting between processors and state policymakers from the water and energy sectors (representatives of the Oyo State Ministry of Rural Water Supply and Sanitation and the Oyo State Ministry of Energy and Mineral Resources).

This follow-up discussion suggested that the primary challenge was not a shortage of water or energy per se but a knowledge gap regarding available solutions, procedures and support mechanisms to address the situation when shortages arise. As a result, infrastructure that is available to help relieve challenges in accessing sufficient water and energy is often not used.

During the discussion, policymakers outlined practical steps that processors can take to request connection to the government water supply. For example, a representative from Oyo State Ministry of Energy and Mineral Resources advised processors to request mini-grid power installation at their facility, rather than asking for a battery for energy storage, which the ministry does not provide.

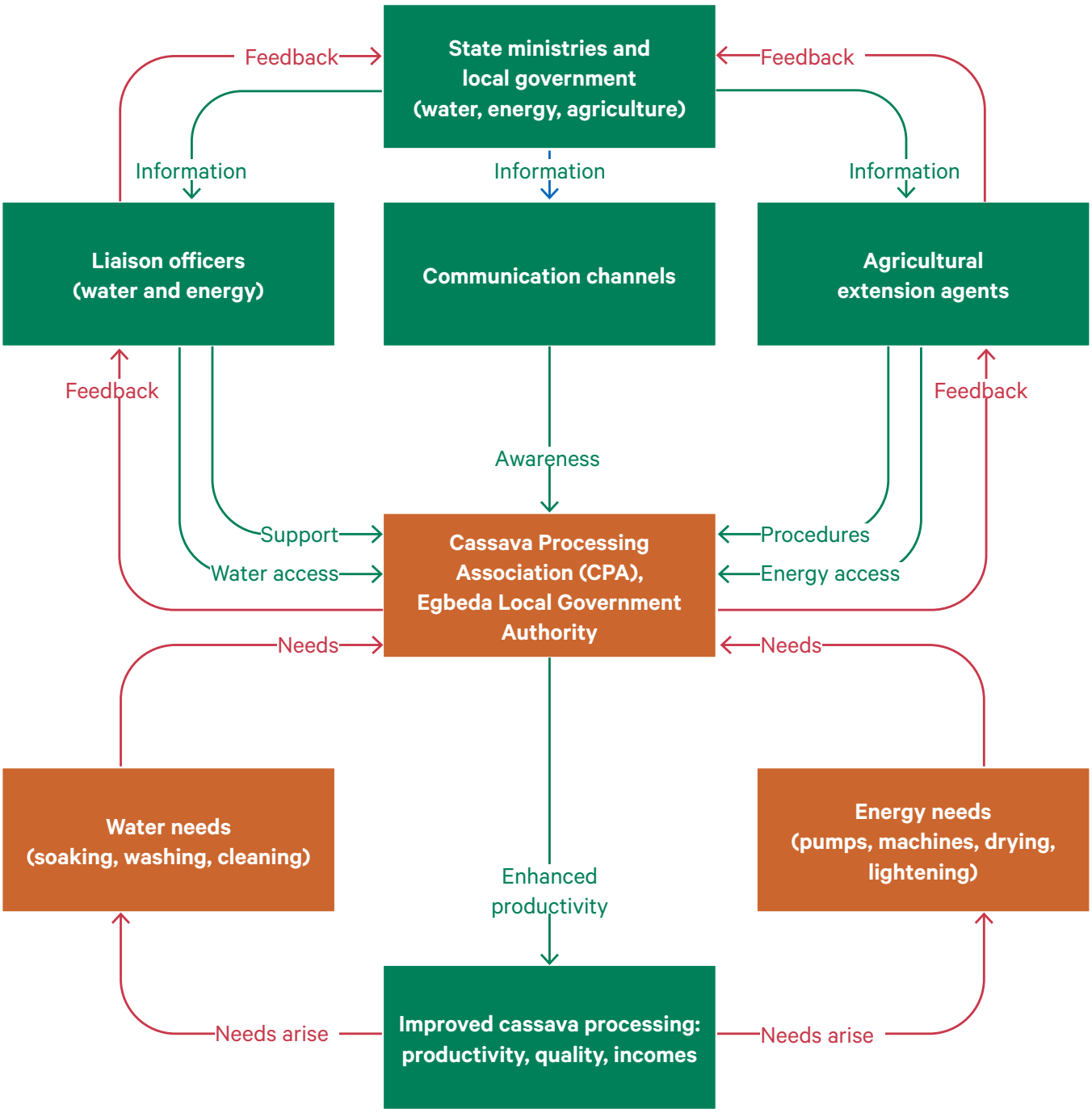
The discussions also revealed that many processors lacked information on other related issues: service-request procedures, available government support mechanisms, and the appropriate institutions to contact regarding water and energy services. Strengthening their capacity to access information, prepare formal requests, and engage with relevant service providers could also help improve their ability to communicate needs and benefit from existing infrastructure.

Why government investment in information access matters

The processors' lack of knowledge about basic, available services and related processes underscores how an information gap can limit the effective use of available remedies and support. Government investments in agricultural infrastructure and services are valuable only when the intended beneficiaries are aware of them. Without timely and accessible information, government interventions fall short of their goals, leaving communities to struggle. Therefore, investing in information dissemination and communication facilitation is as important as investing in physical infrastructure.

Figure 1 presents a flow chart illustrating a two-way information system.

Figure 1: Information system showing communication and feedback pathways. Note: Potential communication channels include liaison officers, extension agents, radio broadcasts, processing association meetings, short message system (SMS) alerts, WhatsApp messages, and letters.



Source: Authors

In the figure, the green loop illustrates the flow of information from state ministries and the local government extension office to cassava processors. The orange loop illustrates the flow of information from processors to service providers and policymakers. As the figure shows, state ministries (water, energy, and agriculture) communicate about policies and support programs through liaison officers and extension agents to the Cassava Processing Association in Egbeda, and the processors use these same channels to communicate to policymakers about their water and energy needs and to provide feedback on services.

The figure visualizes the interdependencies between information, infrastructure access and cassava-processing outcomes within interlinked water, energy and food sectors – interlinkages are referred to as the water-energy-food nexus.

The figure also illustrates how information and communication can be viewed as infrastructure – providing foundational components linking processors and service providers. Improved information access can increase awareness and utilization of available water and energy services, thereby supporting more efficient cassava processing, improved productivity, and continued engagement between processors and service providers. This creates a reinforcing feedback loop.

Improving access to information can help achieve many aims. It can accelerate the uptake of government services such as water, energy, subsidies, agricultural extension information; empower local processors, especially women, with the knowledge needed to advocate for themselves; foster trust and collaboration between communities and government agencies; and promote inclusive development by working to see that no group is left behind due to a lack of awareness. Improved information access can reduce time spent addressing infrastructure challenges, improve processing efficiency, and contribute to more equitable livelihood outcomes for processors.

Although this policy brief focuses on the cassava processors in one local government authority, similar information-access challenges may exist elsewhere, among agro-processing groups led by both women and men in other parts of Oyo State, Nigeria and beyond, where water and energy infrastructure may be available but underutilized.

Recommendations to improve information access

Based on the discussions, we make the following recommendations intended to establish means to improve communication between key government agencies and processors.

Our recommendations involve integrating liaison officers, extension agents, and feedback mechanisms into existing agricultural support systems to help strengthen water and energy access in rural processing hubs in Egbeda Local Government Authority. Funding support for liaison officers could come from local government authorities, relevant state ministries, water and energy service providers, agricultural extension programs and development partners.

- **To help address limited awareness of available water and energy services –** The Oyo State Ministry of Rural Water Supply and Sanitation and the Oyo State Ministry of Energy and Mineral Resources can designate liaison officers to facilitate information on water and energy access for cassava processors.

- **To help address delays in receiving timely and understandable information on cassava processing support services –** The Egbeda Local Government Agricultural Extension Office, in collaboration with the Oyo State Ministry of Information, can adopt multi-channel communication strategies that utilize local language (Yoruba) through radio broadcasts, posters, short message service (SMS) campaigns, and Cassava Processing Association meetings.

- **To help address limited capacity of processors to formally communicate needs –** The Egbeda Local Government Agricultural Extension Office, in collaboration with the Oyo State Ministry of Rural Water Supply and Sanitation Community Engagement Unit, can support the Cassava Processing Association in drafting and submitting formal requests for services like water- and energy-infrastructure connections.

- **To help address the absence of direct communication channels between processors and service providers so that users' concerns reach decision-makers –** The Oyo State Ministry of Rural Water Supply and Sanitation and the Oyo State Ministry of Energy and Mineral Resources can institutionalize a regular feedback mechanism to hear directly from the grassroots cassava processors and respond to service-related concerns.

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Table 1 highlight actions can be initiated through existing government and extension structures. Efforts should also be made to monitor their implementation and effectiveness in improving information and service access among cassava processors.

Table 1: Actions and timelines

Action	Responsible institution	Expected outcome	Monitoring indicator
Appoint water and energy liaison officers	Oyo State ministries of water and energy	Improved connection to water and energy services	Number of processors connected to services
Support submission of service requests	Egbeda Local Government Authority Extension Office	Increased infrastructure connections	Number of service requests submitted
Establish quarterly feedback meetings	Ministries, Cassava Processing Association leadership	Faster response to service challenges	Number of meetings conducted yearly
Develop local-language radio campaigns and visual aids	Ministry of Agriculture, communication channels	Increased awareness of support programs	Number of processors reached

At the time of the publication of this brief, some progress had been made to address some constraints identified during the 2025 consultations. For example, the hub had been connected to the government water supply, and it had been granted a larger allocation of land.

While these developments addressed some constraints raised by processors, the need for continued information access, institutional engagement, and monitoring remains relevant. It is an issue that warrants continued attention and further exploration in other regions where processors of smallholder harvests are facing similar water and energy challenges.

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Notes:
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