

Enhancing livelihoods of fishing communities through renewable energy

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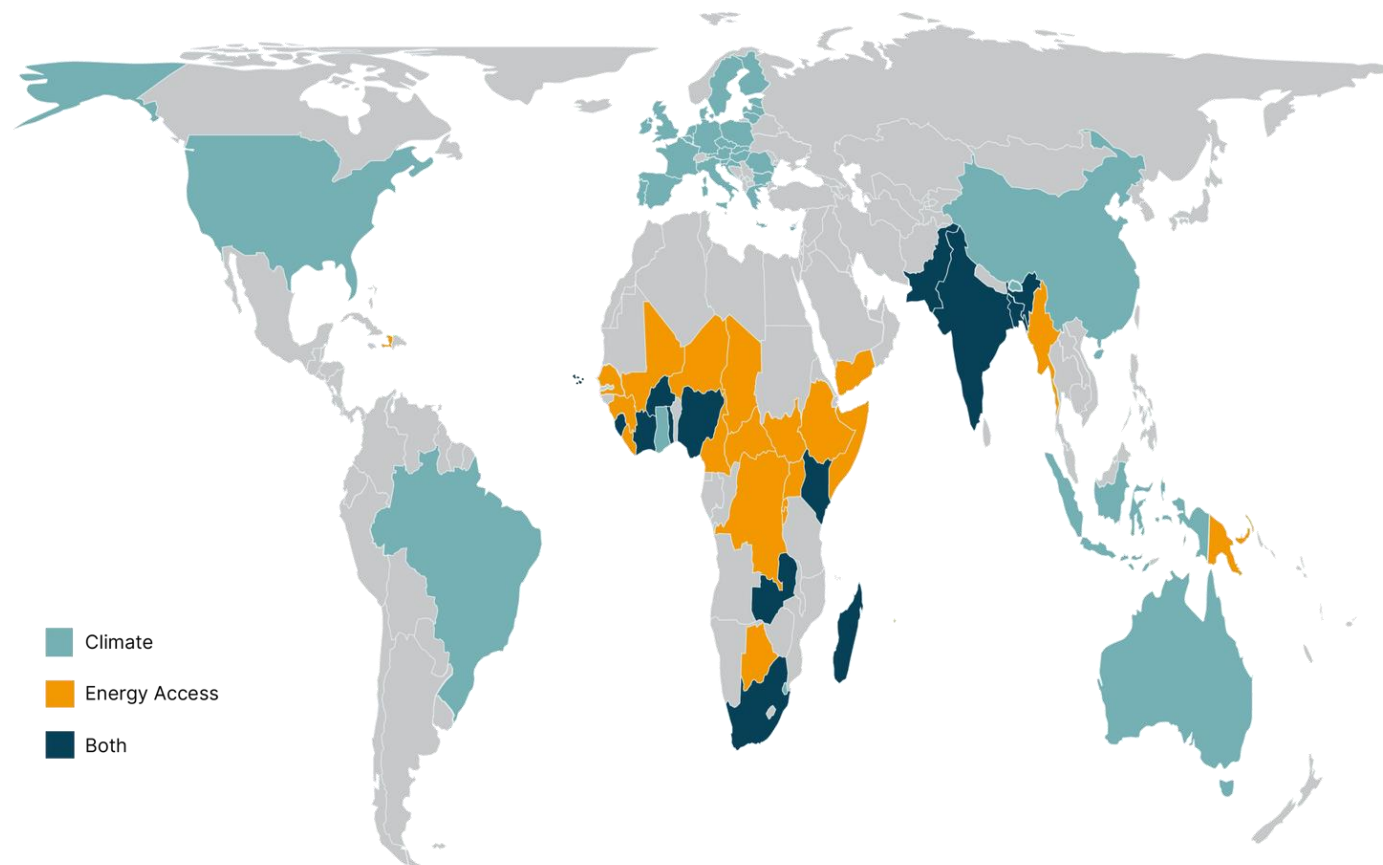


About CLASP

CLASP is a global non-profit with offices in Europe, India, Indonesia, Kenya, and the United States. We are the leading authority on efficient appliances' role in fighting climate change and improving people's lives.

With 25 years of expertise, CLASP collaborates with policymakers, industry leaders, and other experts to deliver clear pathways to a more sustainable world for people and the planet.

[Learn more](#)



Role of CLASP in promoting efficient appliances

1. Research and Innovation

- Consumer Impact
- Market Assessments
- Technology Roadmapping



2. Product Evaluation/Quality

- Testing – Lab & User Experience
- Policy/Standards
- Awards and competitions



3. Market Development

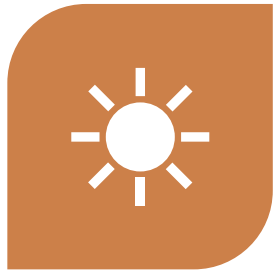
- Sector Coordination
- Early-stage grants and subsidies



Credit: Ecozen

Ecozen Solutions, an India-based company, leveraged its participation in the [Off-Grid Cold Chain Challenge](#) to enter the Kenyan market and raise \$25 million USD in Series C funding in 2023.

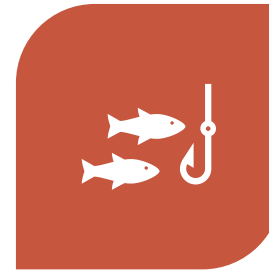
Presentation outline



ENERGY AS A CRITICAL
LEVER TO BUILDING CLIMATE
RESILIENCE



ROLE OF CLASP IN
PROMOTING EFFICIENT
SOLAR APPLIANCES



CASE STUDY: ADILI SOLAR
HUBS – SOLAR POWERED
COLD CHAIN EQUIPMENT FOR
FISHING COMMUNITY IN
KENYA



LESSONS LEARNED AND
HOW THEY ARE RELEVANT
TO THE COASTAL
COMMUNITIES IN INDIA

Climate risks faced by coastal communities

- The impacts of climate change are being felt across the globe, especially in coastal areas.
- As sea levels rise, storm surges also are becoming more frequent and severe, leading to increased flooding and damage to coastal communities, particularly during extreme weather events.
- Examples from East Africa:
 - Cyclone Freddy – Tanzania, Mozambique 2023 destroyed over 129,000 homes, leaving more than 640,000 people homeless.
 - Cyclone Idai – Mozambique 2019 inflicted an estimated US\$773 million in damage.

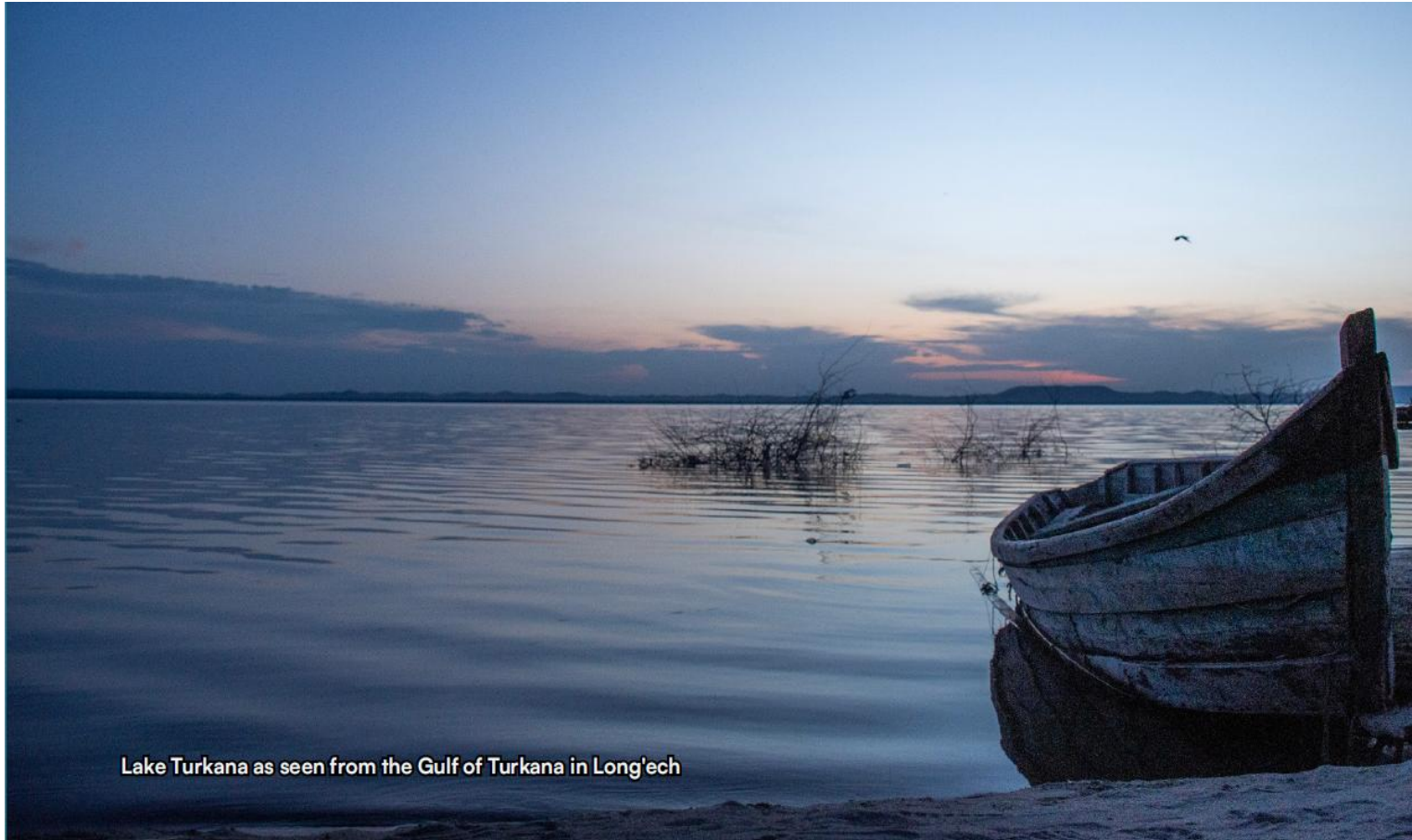


What is the linkage between community livelihoods and resilience?



- **Resilience:** The capacity of interconnected social, economic, and ecological systems to cope with a hazardous event, trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure.
- The first step to building coastal resilience is to assess the risks the community is facing. This includes identifying areas most vulnerable to flooding and other hazards, as well as understanding the potential impacts on critical infrastructure and community livelihoods.

Energy as a critical lever for building climate resilience



Lake Turkana as seen from the Gulf of Turkana in Long'ech

- From lifesaving cooling services to communication devices that provide vital lifelines to information and business opportunities, **distributed renewable energy services** empower communities to build resilience to climate risks.
- **Efficient solar appliances** use less energy, making them cheaper to operate over the course of their lifespan. Consider appliances as "**micro-infrastructure for adaptation and resilience**".

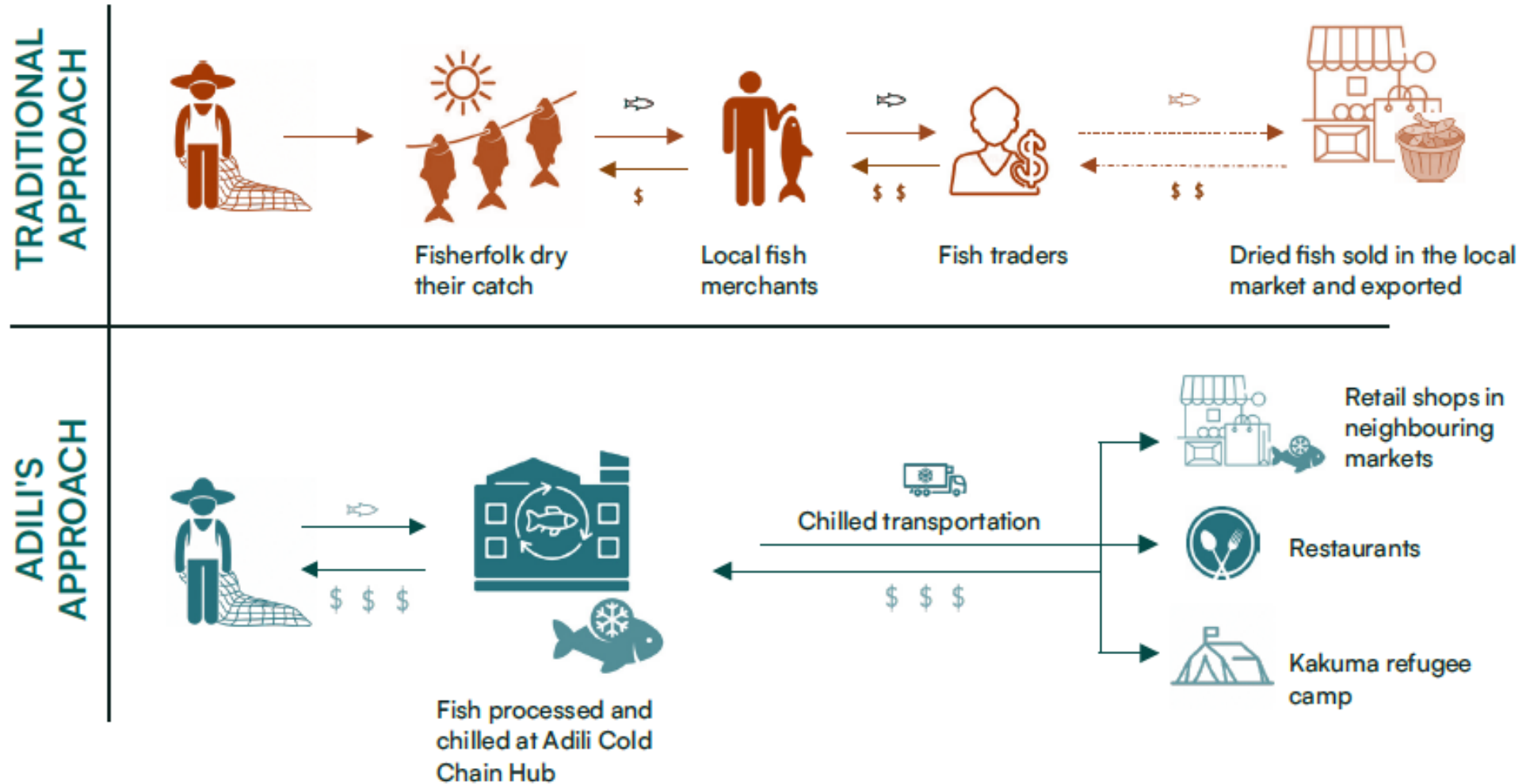
Case Study: Fishing community – Lake Turkana, Kenya

- Lake Turkana, in Northern Kenya, is the world's largest permanent desert lake.
- Historically, salting and sun-drying fish is the main method that fishers used to preserve fish.
- Most use wooden rowing boats for their fishing expeditions, which can take between 8-24 hours.
- However, compared to the market price of fresh fish, salting and sun-drying lowers the value of the fish by an average of 40%.

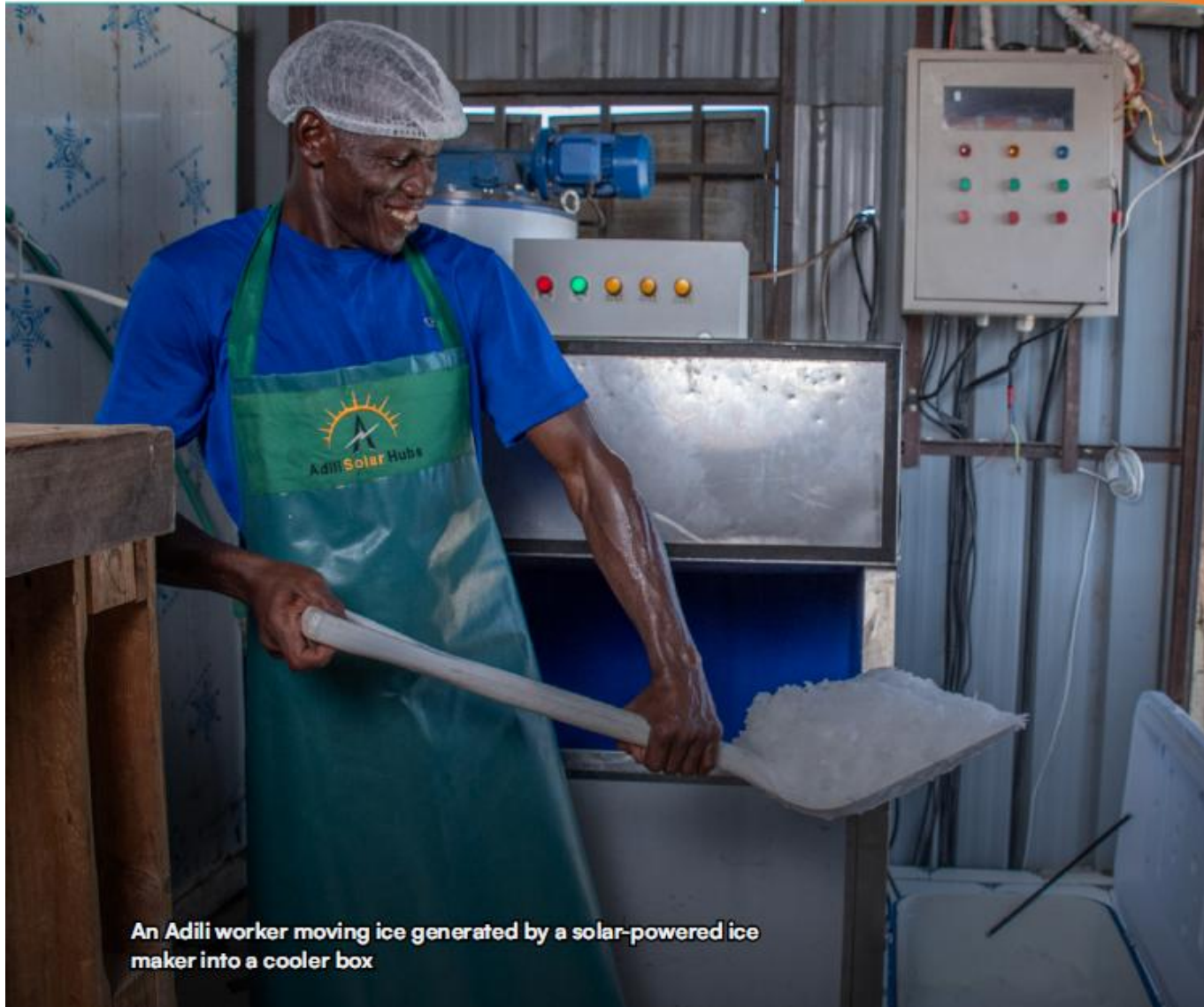


Local fishers supplying fish

Integrating efficient solar appliances in fish value chain



Case Study: Adili Solar Hubs - Kenya



An Adili worker moving ice generated by a solar-powered ice maker into a cooler box

- Adili Solar Hubs is a social enterprise that developed a cold-chain system incorporating:
 - an ice making machine
 - water treatment
 - a cold room,
 - chest freezers
 - energy monitoring system.

This was all powered by a solar mini-grid.

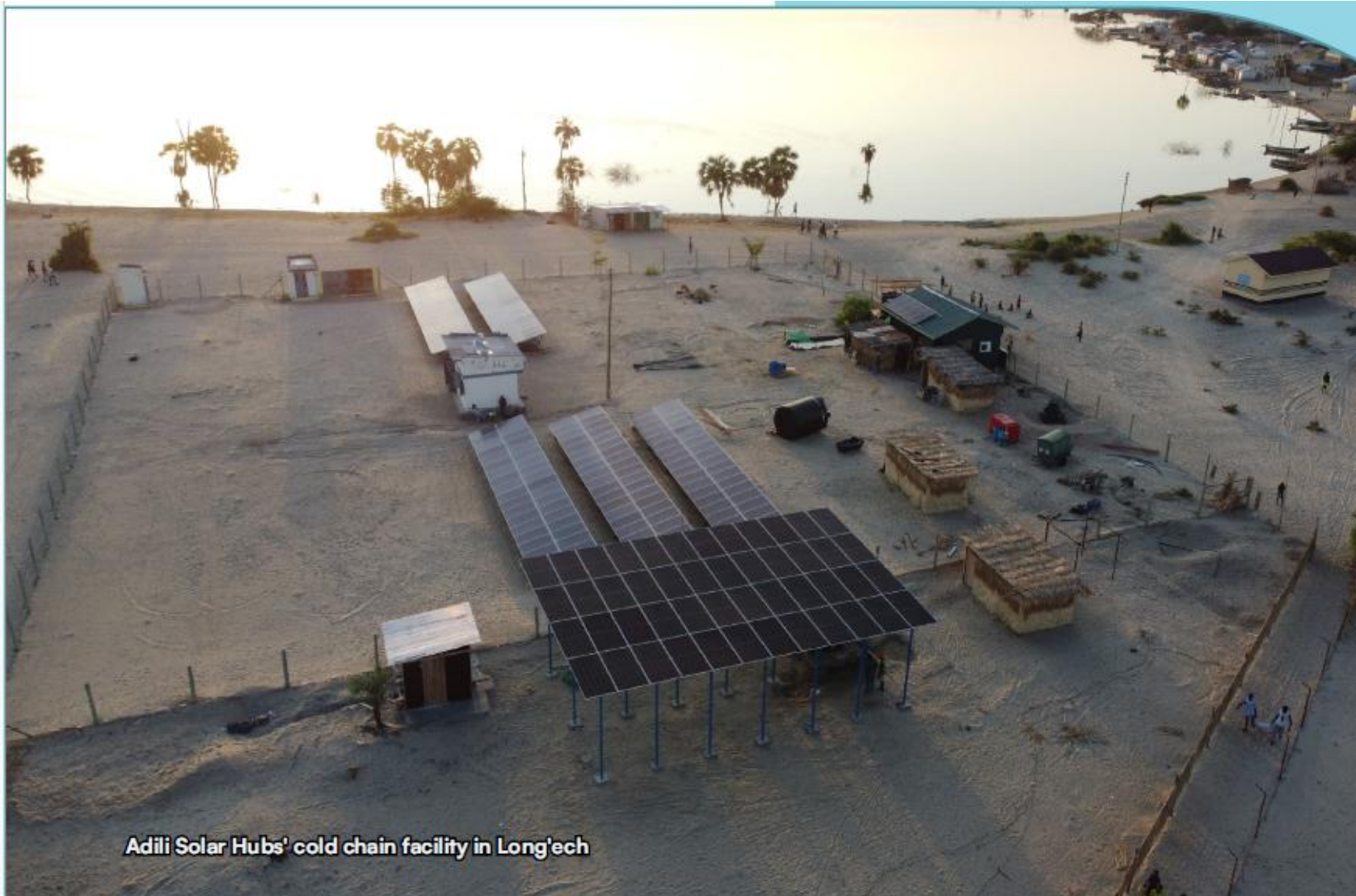
Adili Solar Hubs – Impact on fishing community

- The ice making machine was able to produce up to **500kg of ice in a day** and process up to **3.5T of fish in a week**.
- Adili installed a **1.6kW solar water pumping system**, enabling it to **treat 6,000L of water** per day for internal use.
- They also supplied clean drinking water to a school, which **improved quality of life** among students and the fisher community.



“The Efficiency for Access R&D Fund enabled Adili to procure, operate, and maintain the key equipment for an efficient fish cold chain.” – **Kimani Gichuhe,**
Executive Director

Adili Solar Hubs – Impact on fishing community

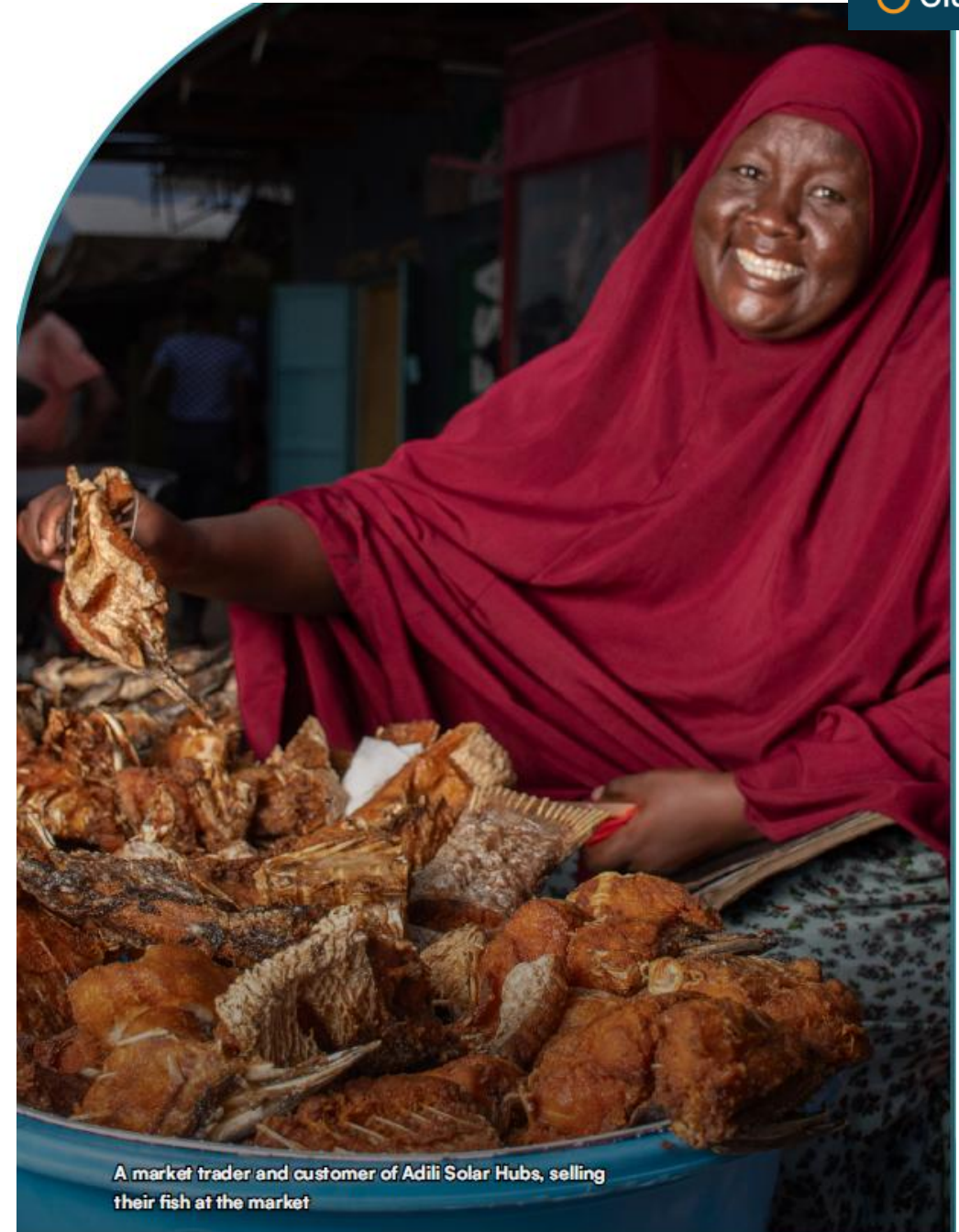


Adili Solar Hubs' cold chain facility in Long'ech

- Solar mini grid **utilisation grew from 40% before the hub to 100% after hub.**
- **2X fish prices** for the fishers in the region.
- **6X increase in income** for fishers who sold fresh fish through the Adili Solar Hubs.
- **Permanent employment for six people** in the community.

Lessons from the case study

- **Supply chain:** To ensure fresh delivery even the transportation requires cooling/refrigeration facilities.
- **Supply and demand matching:** Larger towns have higher minimum order volumes so aggregate fishers to meet demand. Avoid overfishing for ecological balance.
- **Infrastructure constraints:** The size of the ice making machine is constrained by the size of the mini-grid – consider this when sizing DRE.
- **Community engagement:** Gain the support of community leaders and hire from within the community for sustainability.
- **Partnerships are key:** State agencies, development banks, local financiers and technology providers must work together for rapid scaling.



Implementation models for project sustainability



- For ease of repair and maintenance, local technicians should be trained from within the community.
- Some of the increased incomes from the community can be pooled and reinvested into the project to support the O&M costs.
- Aggregation e.g through co-operatives supports communities to negotiate for better prices for their outputs



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Efficient Appliances for People & the Planet



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