to ensure cost-effectiveness at larger scales, the need to strengthen the enabling environment, for example to incentivize a reduction in water use, and the need to work with farmers to foster innovation, adapt SRI and facilitate its adoption as it requires multiple changes to conventional production techniques. The latter need is perhaps the greatest challenge.

Long-term sustainability, replicability and potential for scaling up: To ensure the long-term sustainability of the SRI approach, the Colombian National Federation of Rice Producers is committed to integrating SRI efforts into its Broader Massive Adoption of Technology programme, which seeks to increase the agriculture sector's environmental and socioeconomic sustainability in order to increase competitiveness and productivity while reducing production costs. A key challenge to overcome is the need to mechanize production to ensure that SRI is cost-effective, since this requires mechanized planting and weed control. The SRI technology has already been replicated and scaled up across Africa and Asia. Countries in Latin America that have engaged with Colombia and the Dominican Republic on their experience regarding the uptake of the SRI technology, for example Argentina, Chile, Costa Rica, Panama and Venezuela (Bolivarian Republic of), have also started to replicate the experience of their counterparts.

3.1.8. Utilizing ocean energy in Nauru

Participating country: Nauru

Partners: CTCN, Institute of Ocean Energy of Saga University, Overseas Environmental Cooperation Center of Japan

Start of technology uptake process: 2020

Climate technology: OTEC

Contribution to NDC implementation: Achieving water and energy security, and transitioning to renewable energy in the electricity generation sector

Climate technology: OTEC is a technology that produces both energy and desalinated water. Energy is produced by harnessing the temperature differences between surface ocean waters and deep ocean waters. The condensed water resulting from the process is an abundant freshwater source.

Uptake of the climate technology: Nauru is committed to generating 100 per cent of its electricity needs from renewable energy sources by 2050. The country has been increasing its use of solar energy but requires complementary energy sources for achieving its target. At the same time, the country needs to address the increasing climate change induced scarcity of freshwater sources.


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The enormous potential of ocean energy in Nauru has long been known; the country set up the world's first OTEC pilot plant in cooperation with Japan in 1981. However, extreme weather events caused major damage, which resulted in the cessation of its operations. Nauru's TNA[24] identified OTEC as the priority mitigation technology, taking into account significant OTEC technology improvements over the past few decades, such as climate-proof construction methods, and the possibility of producing large amounts of fresh water through the energy generation process.

The Government of Nauru engaged local communities from the outset in the process of identifying and pursuing OTEC as a technology solution for the country. In particular, landowners of the project site and surrounding communities were consulted.

Gender-responsiveness: Stakeholder consultations were designed in a way that women and men were involved equally. The TNA and CTCN technical assistance processes led to the development of safeguards for a gender-responsive planning and implementation of the technology and found that women would be the primary beneficiaries of freshwater production owing to their extensive involvement in the agriculture sector.

Financing: Through the technical assistance provided by the CTCN, Nauru was able to verify that the introduction of the latest OTEC technology is not only technically feasible but also socially, environmentally and economically viable. While the plant is economically viable in terms of operation, Nauru requires support for its installation. It therefore utilized the CTCN's technical assistance for developing funding proposals for securing the high initial investment required.

Contribution to NDC implementation: Nauru's NDC (submitted in 2016) priorities include achieving energy and water security and transitioning to renewable energy in the electricity generation sector. The OTEC technology contributes significantly to these objectives by providing energy from renewable sources and large amounts of fresh water.

The generation of fresh water not only contributes to water security but also to food security, and provides economic benefits for local communities as it enables freshwater fish aquaculture.

Challenges and lessons learned: Among the key challenges was the lack of technical and financial resources to assess the potential of the OTEC technology and its technical, social, environmental and economic viability. This challenge was overcome by carrying out the TNA and through technical assistance provided by the CTCN. Another key challenge is the high initial investment cost for the construction of the OTEC plant. To overcome this challenge, Nauru utilized CTCN technical assistance to develop financing proposals.

Long-term sustainability, replicability and potential for scaling up: Once installed, the OTEC technology is sustainable in the long term as it runs mostly autonomously and can be considered as permanent, with low maintenance costs, while bringing large economic, social and environmental benefits to the country. The

24 Available at https://tech-action.unepdtu.org/wp-content/uploads/sites/2/2020/04/nauru-final-tna-report-2020.pdf.

technology also has great potential for replication in other SIDS, in particular those located in the Pacific, where the required large differences between surface water temperature and deep-water temperature exists.

3.1.9. Action for Rural Women's Empowerment: women-led energy cooperatives as a pathway to a just energy transition in Uganda

Participating country: Uganda

Partners: Women Engage for a Common Future, GIZ

Start of technology uptake process: 2018

Climate technology: Decentralized and cooperative renewable energy system

Contribution to NDC implementation: Improving energy generation, access and utilization from renewable energy sources and promoting the use of energy-efficient technologies and improved efficiency of charcoal production and cooking stoves

Further information:
Project website: https://www.aruweug.org.

Climate technology: ARUWE works with communities to provide access to a decentralized and cooperative renewable energy system that places energy production and distribution close to the consumers, enabling households, small businesses and health centres to access energy supplies. Decentralized energy systems use reliable and cost-effective technologies to close the access gap to sustainable and renewable energy for the most vulnerable, including members of rural or Indigenous communities and women. Decentralized energy systems require that people are not only consumers but are also responsible for energy production, distribution and commercialization and therefore enable those who are affected by the energy transition to meaningfully and effectively participate.

ARUWE works with three climate technologies: charcoal briquettes, photovoltaic solar panels and biogas. Decisions on which technology to implement and how to share its benefits are taken by the communities as a whole.

Women Engag a Common Future