



From
the People of Japan



VOICES AND VISIONS: THE PACIFIC GREEN TRANSFORMATION PROJECT



INTRODUCTION

Climate change is one of the most pressing challenges of our time, and Small Island Developing States are among the most vulnerable. The Pacific Green Transformation Project, funded by the Government of Japan and implemented by the United Nations Development Programme, is supporting communities in Papua New Guinea, Samoa, Timor-Leste, and Vanuatu to transition to renewable energy, reduce reliance on fossil fuels, and develop sustainable, green solutions for future generations.

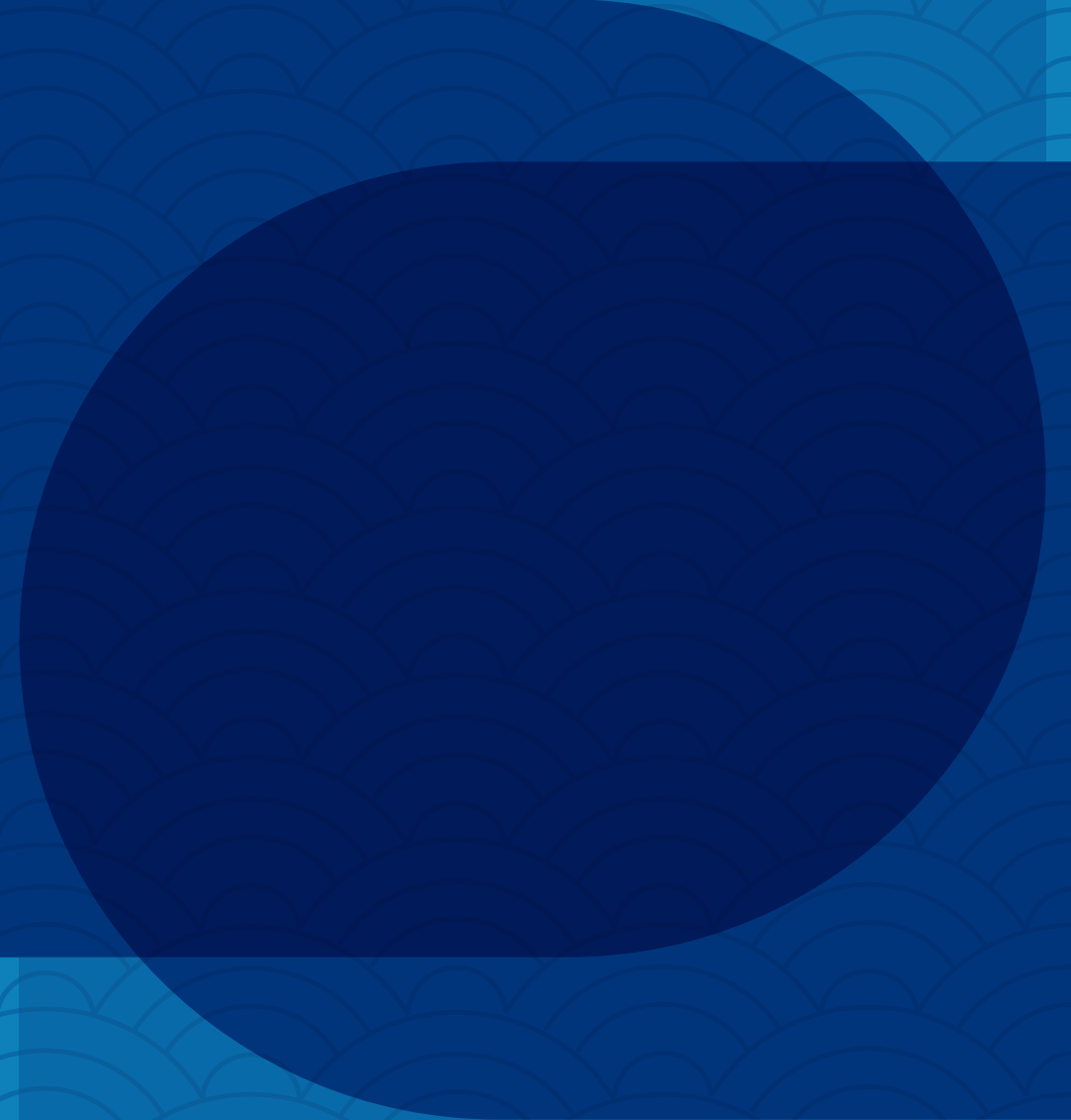
These stories share accounts of resilience, innovation, and community-driven action, highlighting the people and initiatives that are driving clean energy solutions, climate resilience, and positive behavioral change across the Pacific. These stories demonstrate how targeted interventions, combined with local knowledge and collaboration, are encouraging communities and individuals to adopt sustainable practices and make choices that contribute to a greener, more resilient future.

Through diverse voices and visions, we aim to celebrate achievements, share lessons learned, and inspire continued action so that together, communities can build a greener, more resilient, and inclusive future for generations to come.

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PAPUA NEW GUINEA



POWERING HEALING: UNDP'S SOLAR FARM BRINGS LIGHT TO NURSES IN BUIN

The Buin District Health Centre is a level 3 medical facility that primarily offers health and ambulatory care. Built in the 1960's, it's been a central lifeline for people in Southern Bougainville, serving about 200 patients a month.

Since 2017, nurse Cecilia Naguo has served the people of the town with passion and devotion. The work is far from easy and Cecilia and her colleagues grapple with many challenges, the biggest being frequent power outages.

That scenario is about to change, as a new solar farm—funded by the Government of Japan and built by UNDP's Pacific Green Transformation Project—will provide consistent power supply to the entire town of Buin. Naguo has been anticipating this moment for years, and she says it is transformative for the health clinic.

She chose healthcare as a profession as she was influenced by her grandfather's positive experience at a hospital, when he was admitted for an illness. He was so pleased by the way that the nurses cared for him that he thought Naguo should join the profession. She took that to heart.

At nursing school Naguo was even more impressed with the education, that she says has shaped her values. Despite encountering a se-



The Buin District Health Centre is located in Buin, Southern area of the Autonomous Region of Bougainville in Papua

ries of obstacles, her motivation to treat people and make them feel better has never faltered.

“The nursing school taught me to value life and what we do,” she says. “We don't work for just money, we work from our heart, so that people within our communities can have peaceful (and healthy) lives.”

The blackouts in Buin are more than inconvenient. They can often last for hours a day, and sometimes weeks. They directly affect the daily operation of the health clinic that needs water supply, cold chain storage, and lights for small surgeries and deliveries. The facility operates 24/7 under difficult conditions with a total workforce of about 100 people, including 20 nurses and community health workers. Without consistent power, the operations of the clinic are curtailed and lives can be put in jeopardy.



Ms. Cecilia Naguo, the Executive Director of Southern Bougainville Health Services

UNDP Papua New Guinea / Hiroe Ono

The clinic's labor ward handles 20 deliveries a month, which requires the water pump to work so that sanitary conditions are maintained and medical instruments are cleaned and sterilized, to prevent infections.

“During power outages, we go outside to fetch water with buckets,” explains Naguo. Nurses need to carry water back and forth many times to refill the tank. Lack of water also risks a rise in communicable diseases. “We are very cautious about hospital infections and try to minimize that. We don't want patients coming in and getting infections,” she says.

The standby gensets run on gasoline, but fuel is expensive so they are used sparingly, mostly for emergencies and critical procedures where good lighting is critical. If there is no electricity, the nurses must resort to using torches. Currently, there are some small solar panels for critical functions such as vaccine storage. However, power supply remains unstable, forcing staff to operate manually most of the times.

Despite these difficulties, being a nurse gives Naguo purpose and she feels that her mission is to improve services for the community. She is among the few nurses on the island of Bougainville, where health infrastructure remains limited, following a civil conflict that ravaged the island throughout 1990s. “If I don't provide services then who else will do it? That's why I have to keep going. When my time is up, somebody else will come and carry on what we have been doing.”

The Buin Solar Farm, supported by the Pacific Green Transformation Project, promises a new energy transition. Naguo is not the only one to express enthusiasm for the new source of power, her family

and her colleagues are also excited.

“Our services won't be disrupted by power cuts and we won't have to go back and forth to fetch water and look for torches anymore. It's a very



Solar farm supported by the project

beneficial development for the hospital and surrounding communities,” Naguo said.

Currently, the health facility mainly relies on a stand-by generator that costs about 4,000 kina, about US \$948, to operate every two weeks. A consistent supply of power provided by the solar farm will not only solve disruptions in medical services but is also expected to reduce the cost of the energy by up to 50 percent.

When Naguo started working in Buin in 2017, she faced a heavily male-dominated environment that almost led her to quit. However, there were plenty of people who encouraged her to hang in there and provided her with moral support. She is glad she endured because today she is the Executive Director of Southern Bougainville Health Services.

Now with consistent, clean, and renewable energy coming on, the future of the health facility looks bright, as does the future for women in Bougainville.



Students returning to their dormitories in the rain

On a rainy afternoon in Buin, Deputy Principal Chris Montai stood intently watching the students heading back to their dormitories after classes. Buin Secondary School established in 1968, is a public boarding school that provides education to 670 students from grade 9 to 12, the next generation of Papua New Guinea. Earlier this year, the school suffered a complete power outage for 10 weeks, after its generators malfunctioned.

“

All the teachers have laptops. But without power, what can we do? We have nothing to do.” Montai said. The lengthy delay in sourcing a new part for the generators from overseas left some education programmes incomplete.

Such ongoing power fluctuations have caused disruptions to both learning and teaching. Teachers are often forced to shift entirely to manual methods; paper copies, handwritten notes, and flipcharts with makers. Having no power supply hampers efficiency at school. A series of power cuts also damaged several school computers, and it left the digital learning system partially dysfunctional.

The lack of essential infrastructure is a challenge faced by many schools in Papua New Guinea. And it heavily impacts academic performance and student attendance. According to UNICEF’s 2024 annual report, in rural areas of PNG, 23 percent of children aged six to 18 are out of school and in 2019, the enrolment rates of secondary level school were at 20 percent. (UNICEF Annual Report 2024).

That situation will soon change in Buin. UNDP is working with the government, with generous support from the Government of Japan, through the Pacific Green Transformation Project to set up a one-megawatt solar farm. This will provide electricity not only to schools but also to homes and businesses in Buin, powering lives. For now, for Montai, the wait for that consistent, clean, power supply persists.

“

We work night and day because of the power cut, we can't complete our work by the end of the day, we always carry over tasks to the next day. That's the biggest challenge we have. Most of the time we can't complete our work," he said.

Mr. Montai, a father of four and a teacher for more than two decades, believes deeply in the mission of school education. He knows that education is an essential not just for individual growth but also for ensuring equality, enhancing women's empowerment, reducing poverty, and driving economic growth.

"The power (electricity) is the most important need for an educational institution, especially in schools," he emphasized. Currently the school regulates power use to save on fuel costs from 8:00am to 1:00pm, and from 6:00pm to 8:30 pm. "It's not enough," Montai stressed. The gensets require refueling every two to three days at a cost of about 1,000 kina—about US \$237—per tank, limiting learning opportunities.

Even within the restricted schedule, blackouts are frequent. "The power goes off even before 1:00 pm sometimes" he added. The disruption especially affects boarding students who rely on evening study. A few students own small personal solar panels that can be used minimally to charge a mobile phone and study late.

For the teaching staff, the lack of power means extra hours of work. "We need to prepare for



Students engaged in a class



Mr. Chris Montai in his classroom



About 680 students from grade 9 to 12 are engaged in Buin Secondary School



Since 1968, Buin Secondary School serves as an essential secondary institution to provide valuable education and learning opportunities for local youth

the next day by using copy machines, but we can't. This will create extra work for teachers. Sometimes we can't attend the class because we need to prepare for the lessons," said Montai.

For Mr. Montai, there is one solution, solar power. "The one reason that we cannot progress is lack of consistent power," he stated. Delivering reliable and cost-effective clean energy to the school is the top issue. "Bringing power to the school will improve our standard, our focus is to raise our standard. We want to bring our school to another stage. We need stable power to do some extra work. It will benefit learning of student and the work for the teachers"

Constant power is not an end goal, but it's an important point to reach the next level, hoping the money saved on fuel costs can be redirected to improving other school infrastructure and buying new computers.

Mr. Montai believes that guiding young people to accomplish their goals. Students at the Buin

Secondary School aspire to become engineers, doctors, teachers, and accountants. "I believe with hard work and determination, they will achieve their dreams," he said. "I value developing young people to be educated to foster their mindset. Dealing with young people is enjoyable. Teaching has to come from your heart. That's my motivation factor."

He highlighted his own success with 90 percent of his students achieving strong success in mathematics.

“

The last time I visited Port Moresby, my old students came to visit my hotel. I was happy to see my students have progressed and they appreciate what I contributed. If you teach from your heart and love your students, they will remember you. When you mingle with young people, you will stay young. That's one of the things that I found out."

LEADERSHIP WITH PURPOSE: CLARA MOMOI'S DRIVE FOR DEVELOPMENT IN BOUGAINVILLE

It was not an easy decision for Ms. Clara Momoi. Should she leave her well paid and comfortable senior National Government job in Papua New Guinea's capital, Port Moresby, or return home to lead the redevelopment of her hometown, Buin.

Buin lies at the tip of Southern Bougainville, a town marked by poor infrastructure, limited access to basic services, and frequent power outages. Yet, Momoi decided to make the move to help in the development of her hometown.

"I knew I had to take this challenge to come back home to help my people" she says, adding that it wasn't an easy homecoming and career change. "It took me a month to decide. Because you cannot compare Buin with any other part of Bougainville like Buka, and certainly not Port Moresby."

Buin, located in the heart of the Southern Bougainville in Papua New Guinea, remains one of Bougainville's least developed regions. Its economic challenges are compounded by severe accessibility issues due to poor road conditions. The rough roads are often disrupted by flooding from the region's many rivers. The town has no airport and relies primarily on its seaport for the transport of goods and services. Its economic prospects are further hindered by lack of consistent access to reliable power.

The Regional Director position under the Department of Community Government was not something she had actively thought about. However,



Ms. Momoi, who is a "SME mother," uses her personal experience to understand the daily economic struggles and opportunities for women in Buin /

when the opportunity arose, the chance to influence real change was irresistible. "I really wanted to help and influence local decision-making. That really motivated me to come straight here," she explains.

Momoi now leads the region's restructuring efforts. Her vision for Buin's transformation is rooted not only in her expertise in policy and budgeting but also her personal experience as a mother and a small business owner. "I'm a SME mother. I sell art crafts but at a very micro level," she explains. Her perspective as both a policy maker and micro entrepreneur gives her a deeper understanding of the daily struggles of people in Buin.

In her community, the informal jobs sector - such as street vendors selling ice blocks, food,



Ms. Clara Momoi photographed during an outdoor interview



Ms. Momoi's clean energy strategy is a direct way to ensure future generations

and woven goods - are a primary source of livelihoods. These businesses are mostly run by women. For many of them, one of the biggest barriers to successfully running businesses is the cost of power. "We are managers of the homes, especially in terms of the expenses," she says.

She experiences the same reality. "I buy power and make sure my kids enjoy the privileges of getting power everyday even though it's expensive. Tariff on power concerns us the most."

As the region's leader overseeing infrastructure and energy, she sees renewable energy as a driver for both internal and external development. The newly commissioned Buin Solar Farm, constructed by UNDP with the generous support of the Government of Japan through its 'Pacific Green Transformation Project', is a solution to those daily burdens. Solar power is expected to significantly lower the current expensive tariffs, making electricity more affordable for families and small businesses.

"It's going to have a significant impact on the lives of the people." Cheaper, stable power means vendors can extend their hours of operation and expand business opportunities. "That's a plus for the economic sector, especially for women," Ms. Momoi explains.

She also expects renewable energy to have positive ripple effects on community development. Access to electricity encourages residents to build better and safer housing, and to qualify for



Most of the population in Buin make their living through informal sector including street vendors

grid connections. "It will have both indirect and direct impacts and improve standards of living. It will also change the mindset and behaviors of people as they learn from their neighbors," she says.

Ms. Momoi's decision to embrace clean energy is not just a local economic strategy. It's also a direct response to the climate crisis. After coming home to Bougainville, she noticed how climate change was affecting the region. An increase in temperatures was causing residents to feel the heat even during the night. "We are already experiencing it, this is reality," she warns. "We are endangering the future of our generations. We have to really wake up to ensure that our future generations live in a place where they are not affected by extreme weather."

Now, her concern extends beyond Papua New Guinea. "The world is just under one umbrella. I would encourage other countries and regions to promote clean energy. We need to ensure that future generations are safe. They are breathing the same air we are breathing," she says.

Alongside her public role, lies her personal aspiration to one day run a bigger business. "I envision that in 20 years time, Buin will be a changed place. It will be really different with the power." Ms. Momoi's return home and her desire to bring about change reflects the strength of local women's leadership in Bougainville, to bring about crucial and enduring change in communities that need it most.

LEARNING TO LEAD: A YOUNG WOMAN'S FIRST STEP INTO GREEN ENTREPRENEURSHIP

My name is Lama Teffatu. I am 24 years old and from Mortlock Island, a small atoll in the Autonomous Region of Bougainville (ARB) in Papua New Guinea. It takes nearly 24 hours by boat to reach my island from Buka, the capital of Bougainville. My community is no stranger to rising sea levels and environmental changes. In recent years, our gardens have been slowly disappearing and land erosion has worsened.

For years, I didn't understand why this was happening. It was only after I had the opportunity to attend a Youth Empowerment Bootcamp on Entrepreneurship, Renewable Energy, Green Jobs, and Gender that I realized why all of this was happening. The issue started to feel deeply personal. Like a fight for our homeland, for our daily survival, and for our future. And I knew I had to take action.

From 28-30 May 2025, the bootcamp—organized by the UNDP in collaboration with the Youth Empowerment in Climate Action Platform (YECAP) and the Innovation Hub in Buka—brought together more than 30 young people like me across Bougainville for three days of learning, sharing, and imagining new futures. This was my first training on climate change and my first step into green entrepreneurship. It taught me that climate action is not only about protecting the planet, but also about creating sustainable livelihoods, particularly for young people and women.



Lama Teffatu (left) and fellow youth participants take part in a group activity during the Movers Workshop on Climate Change and Renewable Energy session at the Innovation Hub in Buka

With the support of the Japan-funded Pacific Green Transformation Project and YECAP, the bootcamp gave youth like me access to training, tools, and resources that would not otherwise reach our islands. It was an opportunity to connect, collaborate, and build ideas to bring to our home communities.

Papua New Guinea is more than what the world sees in the news. We are a country full of friendly people, vibrant cultures, and incredible natural resources. Places like Bougainville are safe, beautiful, and open for collaboration. My home, Mortlock Island, is a hidden gem. We may be far from the mainland, but we are full of energy, culture, and young people who are eager to learn, work, and lead.

“Green jobs offer a powerful way to address two of our biggest challenges: climate change and unemployment. Learning about green entrepreneurship gave me hope that I don't have to wait for someone to bring opportunities to my island—I can create them.

One of the most memorable parts of the bootcamp was learning how to develop business ideas that respond to local environmental challenges. My goal is to help my community adapt to climate change while building a more sustainable future.

Raising awareness in my village is key. Many local people, especially in remote communities like mine, still don't understand what climate change really is or what we can do about it. I want to share with them what I've learned—not just the causes and impacts, but the solutions too. How we can plant smarter, conserve water, shift our habits, and make our voices heard. This bootcamp gave us the tools to start those conversations and train our peers with the same skills we had learned.

As a young woman, I come from a culture that blends both Polynesian and Melanesian traditions, and in many parts of our society, women are still excluded from leadership roles. Men are often seen as the decision-makers, while women are expected to stay behind. I believe this must change.

Women have the right to be part of climate solutions as leaders, not only as beneficiaries. Gender equality is at the heart of true climate resilience. This means changing the rules that hold women back and building systems that include everyone, no matter their gender, background, or ability.

To other young people in Papua New Guinea and across the Pacific, don't wait for someone to tell you that you're ready to lead. If you have the chance to learn, take it. If you have an idea, speak up. And if you fall, get back up. We are the generation who will inherit this planet, and we must be ready to protect it.

At the very beginning of the bootcamp, our trainer looked around the room and said without any context, “I need one brave volunteer.” The room fell silent. No one raised their hand. I was nervous, but I took a chance. The trainer congratulated me for stepping forward, saying that youth empowerment begins the moment we choose to act. In that small but powerful moment, I took the space when no one else dared to. And that's what this bootcamp was about—recognizing the power within ourselves to lead.

I raised my hand because I was happy to be there, to be heard, and to be part of a new generation of climate leaders. And I hope more young people from places like mine will have the chance to raise their hands too.



The solar system at the Innovation Hub in Buka

THE LIGHT IN BUIN: ONE MAN'S MISSION TO POWER A COMMUNITY

Mr. Albert Nukuitu, Chairman of the Buin Power Management Committee and a respected local community representative, is one of the key players in the revitalization of Buin, the biggest town in southern Bougainville.

Following a civil conflict that ravaged the island between 1988 to 1998, various parts of the island of Bougainville have been left without reliable electricity. “The energy sector was never my career. The basic reason why I’m assisting Buin power is that when I came back home, I realized that we needed power.”

Lack of fundamental infrastructure and services led Nukuitu to action. His deep involvement in the energy sector was born from a simple and powerful desire to bring change to his community. From 2010 to 2014, a limited and intermittent 8-hour power service was briefly established in Buin. This initial effort was an entirely locally led initiative. “We were using our own resources to install power,” he explains.

However, the path has not been smooth. He recalls that there had been some attempts to bring power to Buin in the past, but it all ended with subsequent withdrawal because of the unfavourable financial landscape and bleak perception of the region’s potential.

Between 2014 and 2018, Buin experienced a period of complete blackout before energy operations tentatively resumed. “In the night, we



Mr. Alber Nukuitu delivering a speech to the audience at the official launch ceremony of the Buin Solar Farm in October 2025

UNDP Papua New Guinea Hiroe Ono

were in total darkness. People really struggled,” remembers Nukuitu.

In 2018, he mobilized a group of citizens to restore the town’s power. Since then, power company’s hours of operation have gradually scaled up from 8 to 22 hours.

Now he is contributing to UNDP and Government of Japan’s joint Pacific Green Transformation Project to introduce clean and renewable forms of energy to the town. From engaging in installation of the solar panels on the rooftops of three Innovation Hubs to supporting the development of an approximately 1-MW solar farm in Buin, his invaluable contributions have been essential for the project’s aim of supporting Buin’s green transition.

Mr. Nukuitu stresses that no external support could succeed without strong local commitment. His approach was hands-on and grassroots. Prior to the project, he repeatedly went around town to engage residents in meetings, advocating for sustainable energy.

“For a town like Buin, physical face-to-face contact is the only way to disseminate crucial



Mr. Albert Nukuitu photographed during an interview

UNDP Papua New Guinea Hiroe Ono

information”, he explains. “We talked to as many people as possible to ensure that information was shared about this project and the impact it would have on people’s lives.”

“

When asked about the challenges in adopting new technology and establishing clean energy systems, his answer is simple. “There are no challenges, there are only expectations.” He consistently chooses to look at the bright side of life and focuses on potential rather than obstacles. “Green energy is a window,” he stresses. “A lot of benefits will come associated with solar power. Buin will be a better place for you to come and invest.”

Mr. Nukuitu grew up in a family and society where people helped each other. “We don’t have any social security (provided by the state), so really our relationships are our social security,” he said. This tradition of strong community solidarity motivated Nukuitu to take on the role he is currently in. “I have what most people don’t have such as knowledge, experiences, networks, and connections in both Bougainville and Papua New Guinea. So instead of sitting and complaining about the services not reaching our place, I do what I can. I’m attached to what I’m passionate about: Buin”.

Apart from energy supply, he realized the need for proper lodging to meet the needs of travellers to Buin. So, Nukuitu started a hotel business. Building a hotel was also a way of building confidence in the town and attracting people and

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Street vendors selling cold drinks in Buin

government services back to it. “I took a gamble,” he says.

Since it was a major investment undertaken without formal insurance, he had to rely on strong family and community relationships for investment. “I realized most of the government services are in Buka and Arawa. By attracting more visitors, people will start realizing that Buin is safe to visit,” he explains.

After establishing the hotel, Nukuitu has consistently struggled with the high tariffs on fossil fuels that he uses to operate back-up generators during blackouts. Depending on the number of customers, it costs between 10,000 to 12,000 kina per month to run the generators. “If a natural disaster happened and all the property was damaged, I’d be broke. I paid and put all resources in my business at my own risk,” Nukuitu notes.

With the arrival of the new solar farm in Buin, Nukuitu feels that taking these financial risks was worth it. The 1MW solar farm will provide around-the-clock electricity to the entire town and is expected to decrease energy costs by up to 50%. By saving on powering the hotel, Nukuitu will be able to invest in improving the facilities and services he provides to his customers.

Above all, Nukuitu is relieved that the long journey to provide reliable energy to households in Buin is finally nearing its end. “Just like everybody else, I’m happy new things are coming in, these things we never actually had,” he says with satisfaction.



Residents gathered outside for the official launch ceremony of the Buin Solar Farm

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SAMOA

SAMOAN SCHOOL GIRLS DRIVE CHANGE IN ELECTRIC TRANSPORT

“We have to wear our hair up when we practice car servicing in the workshop,” explains Anne-Marie, 17, with a serious voice. Her friend Elisabeth, 16, nods and adds, “I like the practice behind the theory—learning how to fix cars.”

Anne-Marie and Elisabeth are the only two girls enrolled in the automotive course at Don Bosco Technical Centre, in Samoa. The small island developing state (SIDS) faces high youth unemployment, and the school equips young people with technical skills that can help them find work in their communities.

Now, for the first time, students have started learning how to repair and maintain vehicles, including electric vehicles (EVs). Don Bosco is one of the three vocational institutions in Samoa to establish EV training workshops, supported by a new Professional Continuing Training (PCT) programme in EV mechanics. Students will graduate with new skills in EV automotive and electrical systems, preparing them to become the first generation of certified EV mechanics in Samoa.

The workshops are part of the Pacific Green Transformation Project, and its Samoan component Climate Action Pathways for Island Transport (CAP-IT), funded by the Government of Japan and implemented by UNDP. The project supports renewable energy initiatives in the island nations of Samoa, Papua New Guinea, Timor-Leste, and Vanuatu. In Samoa, this decarbonization journey is focused on the transport sector - the country’s largest source of greenhouse gas emissions.



Two Samoan students in automotive studies training at the workshop



Elisabeth practicing engine maintenance in the workshop

UNDP Samoa/Matilde Casper

By introducing electric vehicles, including solar-powered EV charging stations, the project aims to reduce dependence on costly fossil fuel imports, while also improving air quality and public health. An EV charging station was installed at the school workshop, and six teachers have already been trained in EV mechanics, ensuring that this new knowledge is embedded in the curriculum.

Breaking barriers in technical trades

As new technologies create new jobs, it is critical that they are accessible to everyone. Automotive studies generally tend to be largely male-dominated, and Samoa is no exception. But Anne-Marie and Elisabeth are breaking stereotypes.

The girls, both from families of mechanics, were encouraged to follow the career they desired. As the only young women in a cohort of over forty students, they say that this coursework is very much perceived as a man's job.

“

My dad is an engineer, and he's my role model. I want to become like him and gain experience,” says Anne-Marie. Elisabeth was inspired by her older brother, who works in a local car dealership. Both girls are determined to earn their own income and support their families. “You can even fix your own car yourself” says Anne-Marie when asked about the perks of the future job.

The school's Finance Officer, Saline M. Kasio, says that there are clear rules to prevent discrimination, bullying and harassment, so all students, regardless of gender, can focus on learning. “We want every student to feel safe and respected here,” she adds.

“Before 2020, this school had no girls at all. It is part of my mandate to change that, and to encourage more girls into all the fields we offer,” said the School Principal Fonomaitu Mane Su'a.



Former Prime Minister Fiamē Naomi Mata'afa officially launching Samoa's Sustainable Land Use and Mobility Plan at the Don Bosco School, joined by representatives from the Government of Japan, UNDP, and the Ministry of Works, Transport, and Infrastructure

Samoa News Hub

Automotive studies are among the most popular courses, with students showing keen interest in acquiring new skills to adapt to a changing environment. However, they still need to move from theory to practice by servicing real EVs.

“This is a great initiative to ensure Samoa is independent in EV repairs and maintenance. In the future, we could engage the Samoa Qualifications Authority to formalize the training certification, and fund scholarships to convince more families to let their girls join,” said the Principal.

A national push toward sustainable transport

In April 2024, the Sustainable Land Use and Mobility Plan was launched at Don Bosco School, in the presence of Former Prime Minister Fiamē Naomi Mata'afa. The plan lays out steps to reduce emissions in transport, adapted to Samoa's

unique insular context of remoteness, high import costs, and car dependency.

Crucially, the plan recognizes gender equality as a driver of green transition. “To ensure women can also benefit from new job opportunities, vocational training programmes can support their entry into roles such as bus operators, taxi drivers, and mechanics, fostering a more inclusive industry. A truly sustainable transport system doesn't just move people—it empowers them,” said Aliona Niculita, UNDP Resident Representative in Samoa.

Anne-Marie and Elisabeth show what this vision looks like in practice—young women preparing their own futures while paving the way for Samoa's transition to a greener, more inclusive future.

WE'RE STUCK IN": SAMOAN AND NEW ZEALAND BOAT BUILDERS JOIN FORCES TO BUILD SAMOA'S FIRST ELECTRIC FLEET

In the Silva Shipyard in Samoa, a familiar hum of drills fills the air of the workshop. A team of Samoan and New Zealander boat builders is working together to construct Samoa's first-ever electric boat fleet - one of the pioneering electric *alia* projects in the Pacific.

An *alia* is the Samoan version of the traditional Polynesian double-hulled sailing watercraft, a vessel designed for the rough ocean waters of the Pacific, historically used for fishing, transport, and even warfare.

In Samoa, two communities continue to rely heavily on their *alias* and their contributions to the "blue economy". On Manono Island - one of Samoa's four inhabited islands and home to more than 800 people - *alias* remain the main connection of its four villages to the mainland. The boats serve as lifelines for livelihoods, food, education, and healthcare. On the south-eastern coast of Upolu, the village of Mutiatele uses the vessels to ferry visitors to a nearby uninhabited island, which supports a small community tourism enterprise and provides income to local workers.

Now, these vessels are getting a sustainable upgrade. The new fleet of electric *alias* will



New Zealander and Samoan boat builders standing in front of an electric alia

Photo: UNDP Samoa/Vladimir Kalinski

drastically cut greenhouse gas emissions and reduce dependency on imported fossil fuels, marking a major step towards greener transport in Samoa.

This initiative is part of the Climate Action Pathways for Island Transport (CAP-IT) project, part of the regional Pacific Green Transformation Project, funded by the Government of Japan and implemented by UNDP. The project supports Samoa, Papua New Guinea, Timor-Leste, and Vanuatu on their decarbonization journeys. In Samoa, the focus is on the transport sector - the country's largest source of greenhouse gas emissions. Alongside land transport, the project focuses on maritime transport, a particularly important sector in small island contexts. By introducing electric transport, the project aims to reduce dependence on costly fossil fuel imports, while also mitigating air and marine pollution and improving public health.

Capacity-building at the core

At the heart of this initiative is enhancing the skills of Samoan boat builders. These electric *alias* are the first of their kind in Samoa, and a green milestone for the Pacific.

New Zealand-based McKay, a company experienced in marine electronics, is bringing its technical expertise in partnership with the local Silva Shipyard. Beyond construction, McKay's mission is to train Samoan boat builders, ensuring that the knowledge and maintenance expertise stay in-country after the project ends.

For the Silva Shipyard, this is the first time building electric vessels - a hands-on learning opportunity to expand their expertise in sustainable maritime technologies. Teams from the two companies worked side by side for over three months to assemble the boats, piecing together each component like a complex puzzle.

Ashley, McKay's engineering project manager, and the third woman to serve as a marine engineering officer in the New Zealand Navy, reflected: "Tapping into local labour and bringing in our Samoan counterparts was one of the most meaningful parts of this project".

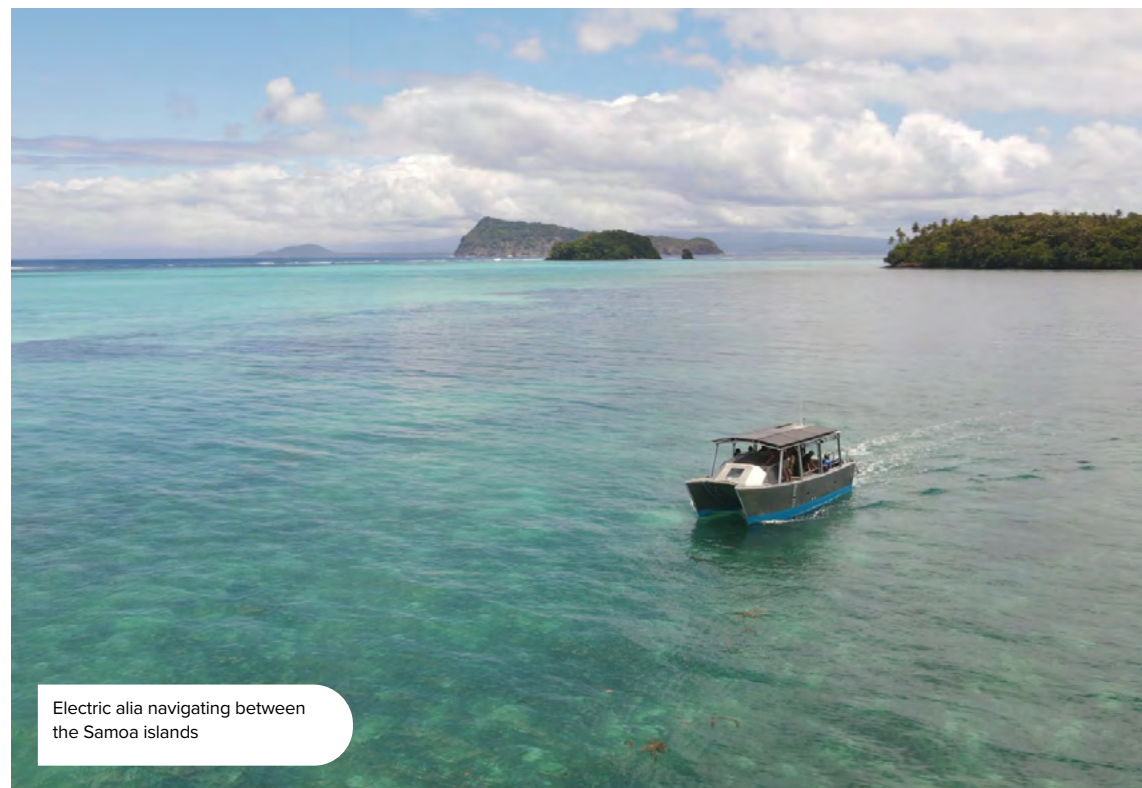
"Our engineers and local partners share a common mindset, but our Samoan colleagues bring deep cultural knowledge and understanding of the ocean. During the first test trip from Apia to Manono with the boat handlers from the villages, it was inspiring to see how they navigated the lagoon and narrow reef channels, showing their knowledge of the waters," Ashley added. Ernesto, a Samoan fabricator, previously specialized in steel, shared how transformative the training has been: "When we started the second boat, everything clicked. It has taught me to improve my planning skills and practice hands-on electric welding, which is very different from steel. Working as part of the team has also been inspiring in terms of work ethic."

Mutual learning across the ocean

While McKay's team brought technical expertise in electric systems, the exchange of knowledge quickly became a two-way street. "Working with our Samoan counterparts has been impressive. They've shown what you can achieve while being so remote, by adapting and problem-solving with limited resources and less access to high-end equipment. We learned how to be more resourceful ourselves. Some consumables proved hard to find—wire, gas—and we needed more planning to source them in advance. We're operating with what we've got. We're stuck in."

Scott, another McKay fabricator, recalls a memorable challenge: "We had spent an entire day offloading the material from the containers and started putting the boat together. Flipping the boat without a gantry was tough, but our Samoan colleagues showed us ways to get it done safely."

Photo: Henrik Richter-Allen



Electric alia navigating between the Samoa islands

Building a sustainable future for Samoan boatmaking

This collaboration goes beyond the immediate build; it's setting a new course for sustainable boatmaking in Samoa and the uptake of renewable energy. Marie-Therese, project manager at Silva Shipyard said, "Renewable energy in Samoa, if not frowned upon, is often misunderstood. Introducing this technology through something tangible - like boats people use every day—helps change that perception. It's been an eye-opener for us to integrate sustainability into our construction process. We're even considering solar power for our own workshop now."

The project's ripple effects are already reaching beyond Samoa. The neighboring Polynesian islands of American Samoa have expressed interest in exploring electric inter-island transport.

Alongside their environmental benefits, these vessels combine robust architecture with low-maintenance simplicity. Designed for the realities of the South Pacific context their structure is made to handle cyclonic weather, which will be increasingly intense and frequent due to the impacts of climate change. Meanwhile, the operations and maintenance of electric *alias* are more straightforward than their fuel-powered versions, which limits the needs for heavy maintenance in a remote setting with fewer resources, equipment and specialized workforce.

With sustainability as a key programming driver, UNDP has also put in place a maintenance and technical support plan beyond the project's duration. McKay and the Silva shipyard will provide troubleshooting and maintenance support for two years after the boats are finalized. Reflecting on lessons learned, the teams are looking ahead: expanding local infrastructure, broadening training to include local electricians and technicians, and scaling impact.



Fabricators working on the construction of an electric alia at the Henry Silva Shipyard

Photo: UNDP Samoa/Marilide Casper



Samoan and New Zealander team members working on the project's boat building

Photo: UNDP Samoa/Amanda Acosta Owens

“The first electric *alias* are expected to start operating from Manono Island and Namu'a in December 2025, marking the start of a new era of clean, community-driven transport for Samoa.

ESSENTIAL SERVICES GO GREEN IN SAMOA: ELECTRIC TRUCKS POWERING FIRE RESPONSE AND OXYGEN DELIVERY

In Samoa, essential services are going green. Newly introduced electric trucks are now supporting fire emergency operations and oxygen delivery for the health sector, strengthening national service capacity while reducing emissions. By pairing low-emissions technology with critical public services, Samoa is showing how climate innovation can deliver immediate, tangible benefits to people.

This initiative was supported by the Climate Action Pathways for Island Transport project, which is part of the regional Pacific Green Transformation Project, funded by the Government of Japan and implemented by UNDP. The project supports Samoa, Papua New Guinea, Timor-Leste, and Vanuatu in their decarbonization journeys. In Samoa, the focus is on the transport sector - the country's largest source of greenhouse gas emissions. By introducing electric mobility, the project aims to reduce dependence on costly fossil fuel imports, reduce air pollution, and model greener public service delivery.

To enable this transition, solar-powered charging stations have been installed, both for new service vehicles and to encourage wider adoption of electric mobility by the public. These stations help reduce emissions at the source by easing pressure on the country's fragile grid, while



Ministry of Health driver on an oxygen delivery shift

the vehicles themselves produce no tailpipe emissions during operation.

Oxygen delivery: cleaner transport for patients' lifeline

At the Ministry of Health, teams responsible for distributing medical oxygen are already seeing gains in efficiency. Senior Transport Officer John Solofua Tafa explains: "We used to be able to fit only five oxygen bottles on the truck. Now we can fit twenty. We can make more deliveries in each trip around the island and serve our communities better."

Samoa relies on a single oxygen production site in Apia, supplying medical oxygen to the national hospital and district health centres. Nurses submit weekly requests, and the Ministry coordinates island-wide distribution - an essential service for patients with respiratory conditions, whether treated in facilities or at home.

The new electric truck is improving readiness during peak demand, especially during respiratory outbreaks. John Tusiupu, Principal Main-

Team from Ministry of Health in front of new electric truck

tenance Officer, describes: "When a respiratory epidemic hits, like it did with COVID-19, requests increase sharply. This truck helps us prepare - we'll be ready to deliver oxygen whenever and wherever it's needed."

This electric vehicle also brings important occupational safety benefits. Equipped with a built-in loading ramp, it eliminates the need for

staff to manually lift heavy cylinders, a task that previously caused chronic back injuries.

Meanwhile, on the island of Savai'i, oxygen delivery still relies on a petrol-fueled vehicle commuting on the ferry, highlighting future opportunities to expand the green transformation.

Fire emergency services: powering the response with electric mobility

At the Samoa Fire and Emergency Services Authority (SFESA), firefighters are training with two new electric fire trucks, ensuring teams are fully prepared for rapid response. Reliable charging is crucial for time-sensitive missions, from fire suppression to rescue operations and hazardous incident response.

The project also equipped SFESA with modern firefighting gear, including breathing apparatus, thermal imaging cameras, and lifting tools. During the official handover, firefighters performed a traditional Samoan thank-you song as cultural expression of gratitude for the new equipment.

The event marked a milestone for Samoa's national resilience. The Minister for Fire and Emer-

UNDP Samoa/Vladimir Kalinski



New fire emergency truck and equipment handed over to SFESA



SFESA Commissioner giving speech at the launch event

UNDP Samoa/Vladimir Kalinski

gency Services, Honorable Seve Tē'i Fuimaono, noted: "Today marks a historic step forward for Samoa's resilience and emergency readiness. The introduction of these electric firefighting vehicles and specialized equipment demonstrates how innovation, sustainability, and strong partnerships can directly improve the safety of our people."

SFESA Commissioner Tanuvasa Oloapu Petone Mauga added: "This investment directly supports the safety of our firefighters and the communities we serve. *Our teams respond to emergencies every day, and having reliable, modern tools including EV-based fire trucks strengthens our readiness to protect lives.*"

Innovation for island emergency services

This initiative represents the first of its kind: adopting electric vehicle technology for emergency services in a small island developing state context. It demonstrates that climate mitigation can, and must, serve people's essential needs.

By modernizing essential services, improving worker safety, and reducing emissions, Samoa is proving that climate action can deliver direct, life-improving results. Families, homes, and communities are now better protected, while the country moves closer to achieving its national emission reduction goals.

SAILING TOWARDS SUSTAINABILITY: ELECTRIC BOATS AND INCLUSIVE TRAINING FOR MANONO'S NAVIGATORS

"Boats are a symbol of survival and connect for Manono. We have community, family, church - but our island needs boats to survive," says Filivai, Captain of the *Lady Tava'esina*.

On Manono Island - one of Samoa's four inhabited islands and home to over 800 people - boats remain the primary link between its four villages and the mainland. They are lifelines for livelihoods, food supplies, education, and healthcare.

Now, each of Manono's four villages is receiving a new electric boat to replace the aging petrol-fueled fleet, and four solar-powered charging stations have been installed on the island.

This initiative is part of the Pacific Green Transformation Project, funded by the Government of Japan and implemented by UNDP. The project supports Samoa, Papua New Guinea, Timor-Leste, and Vanuatu on their decarbonization journeys. In Samoa, through the Climate Action Pathways for Island Transport project, the focus lies on the transport sector - the country's largest source of greenhouse gas emissions. Alongside land transport, the project prioritizes maritime transport, a critical sector for small island communities. By introducing electric boats, the project aims to reduce dependency on costly fossil-fuel imports while mitigating air and marine pollution and improving public health.



Samoan boat handler on the way to Manono in an electric boat

UNDP Samoa/Mathilde Casper

Staying connected while protecting waters

Manono depends heavily on maritime transport to stay connected with the main island Upolu. Boats travel to Upolu around three times a day, carrying goods for village shops, fishers heading out to sea, workers commuting, and families visiting relatives. They are also the only means of transport during emergencies, including getting patients to the central hospital in Apia.

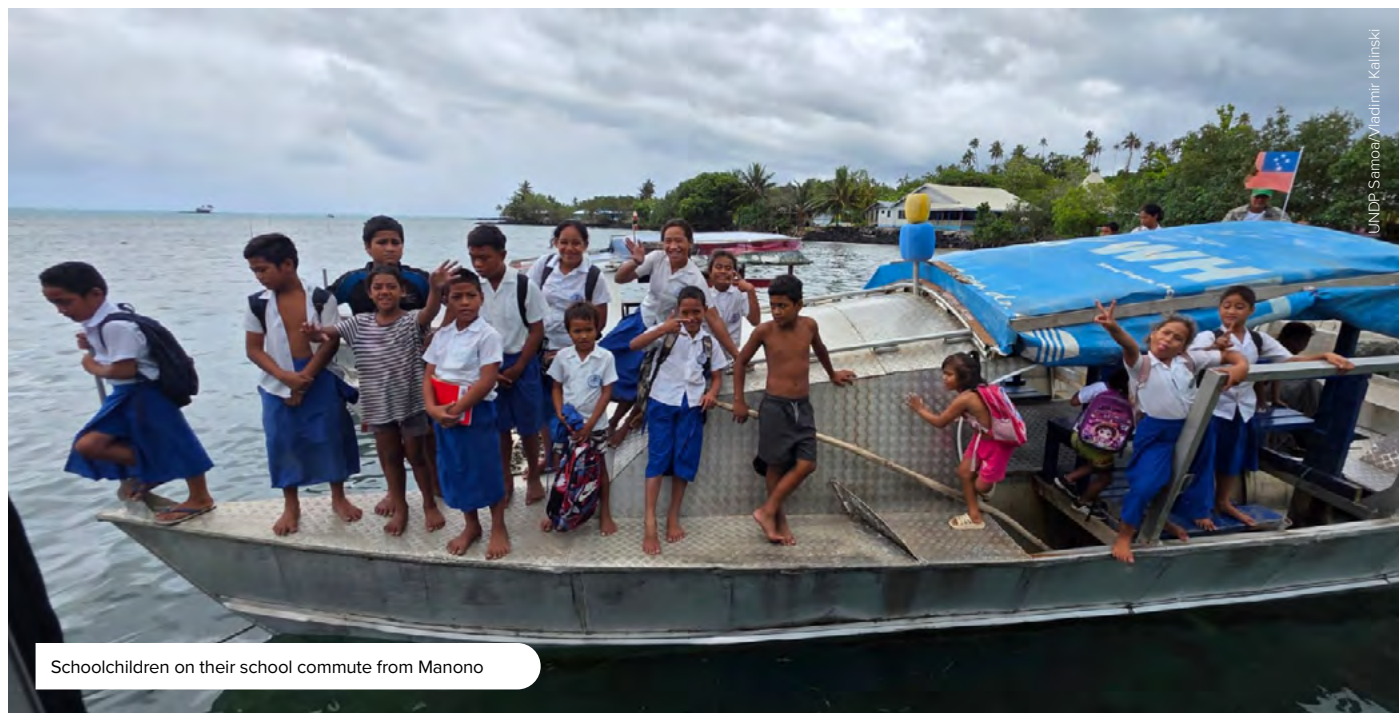
For schoolchildren, the commute is an adventure in itself: every morning, they board a boat at 6 am to reach their school on Upolu.

The new electric boats offer a range of benefits. They are silent, sturdier, easier to operate and maintain, provide more space for cargo, and most importantly, produce zero greenhouse gas emissions. This helps protect local marine ecosystems already under pressure from coral bleaching and climate change. Traditional petrol boats can leak oil and fuel into the water, harming marine life and degrading water quality, while noise pollution can disturb sensitive species.

Electric boats also reduce operational costs and improve reliability. One trainee recalled a week when schoolchildren were stranded on Upolu due to a petrol shortage: “The boat couldn’t take them back. Electric boats will prevent situations like that.”

Building local skills

The boats were manufactured in Samoa, with New Zealand boatbuilders sharing technical knowledge with local workers. This was complemented by hands-on training for future operators. Trainees received three days of theory training in Apia, followed by practical sessions on the water.



Schoolchildren on their school commute from Manono

For all of them, it was their first time operating an electric boat. Instructors introduced emergency tools, demonstrated navigation systems, and walked participants through battery charging and safe operation.

“I joined the training because I wanted new knowledge and skills - I need to plan, schedule, or manage boat trips to carry out my work effectively,” said Sina, one of the few women participants. “Battery filling and driving the boat were the best parts of the week. I want to be a sailor now.”

Captain Filivai emphasized the importance of maintenance: “We need to care for the boat like a car, and make sure it lasts a long time.” Building local expertise will be essential to ensuring long-term upkeep.

Gender dynamics in maritime work

Boat handling in Samoa has traditionally been a male-dominated space, and all current boat operators on Manono are men. However, a few

women joined the recent training sessions - an encouraging step forward.

For some, the link to their work made participation natural. Sina, who works at the Manono Sunset Fales, the island’s only tourist accommodation, said: “It’s seen as a man’s job, but with the right training, anyone can do it.”

Elenise, another trainee, a *sei* flower tucked behind her ear, relies on boat transport for her livelihood. Twice a week, she travels to the Apia fish market to sell fish and support her family, for whom she is the only caretaker. Another participant shared that she would feel more confident helping manage the charging of the electric boats.

When asked why more women do not join boat crews, several reasons emerged. Some said that “girls don’t feel welcome on the boats,” citing the all-male environment. Others pointed to family concerns on safety and strong social norms about gender roles. A widespread belief persists that men inherently know more about the ocean.

Participants suggested mentorship from women already working in the blue economy, women-only training sessions to create a more comfortable learning environment, and expanded training opportunities. Another reason was pointed out: a lot of women don’t know how to swim, which also limits their confidence and willingness to pursue maritime roles.

There are, however, promising signs of progress. On the southeastern coast of Upolu, the village of Mutiatele operates vessels to ferry visitors to a nearby uninhabited island as part of a community tourism enterprise. Today, the eldest daughter in the family-run business steers the vessel, a small but clear sign of how opportunities are evolving.



Trainee from Manono learning how to drive an electric boat

WOMEN TAKE THE WHEEL: BREAKING BARRIERS TO MOBILITY IN SAMOA

Under the shade of a Samoan *fale*, a group of students quietly focus on a road safety test. They have just completed the theory training delivered by the Land Transport Authority (LTA), Samoa's only driving licensing institution. At first glance, it looks like any other class - except that every student in the room is a woman.

And there is an important reason for it.

A recent national statistic revealed a stark gender gap in driving licenses: over the past 20 years, only about 25 percent of driving licenses issued in Samoa have gone to women. In a country where daily mobility depends heavily on cars, this inequality has far-reaching consequences.

As Faaeteete Lene, Principal Licensing Officer at the LTA, explains: "By limiting women's access to transport, you're limiting their freedom of mobility. You're limiting their access to work, to community opportunities, and to supporting their families."

A survey conducted with participants on the women's driving programme found that 89 percent felt that not having a license had restricted their opportunities, from attending university to earning income, fulfilling community duties, or even leaving unsafe situations in the public space or at home. When asked why they had never enrolled before, women cited high costs, a lack of time, and lack of self-confidence.



Samoan women testing out an electric vehicle

Combining women's empowerment and electric mobility

To bridge this gap, LTA, in partnership with UNDP, is offering a free driving course for 200 women, together with training about electric vehicles (EVs). The initiative is supported by the Climate Action Pathways for Island Transport (CAP-IT) Project, part of the regional Pacific Green Transformation Project, funded by the Government of Japan and implemented by UNDP. The projects support Samoa, Papua New Guinea, Timor-Leste and Vanuatu in their decarbonization journeys, with Samoa focusing on its largest source of greenhouse gases: transport.

Beyond investments in infrastructure - such as solar-powered charging station, electric cars and boats - the project also aims to bring about behaviour change. Car ownership in Samoa has



Trainee attending the driving theory course

surged in recent decades. And while small island states contribute minimally to global emissions, Samoa is committed to cleaner, more affordable mobility solutions. Yet, cost concerns and misconceptions about EV reliability and safety remain major barriers.

To address this, an Electric Vehicle Awareness Course has now been integrated into LTA's driver training. The goal is to demystify EV technology and raise awareness of environmental, health, and long-term financial benefits. A 2024 CAP-IT survey showed that up to 60% of Samoans are interested in purchasing an EV, with higher interest among men.

Yet women are central to this transition. As key household decision-makers, workers and community leaders, women are powerful agents of change who can influence the uptake of clean energy. Ensuring they understand and access sustainable transport is crucial for a just and inclusive green transition.

This aligns with Samoa's newly adopted Sustainable Land Use and Mobility Plan, which aims to make public transport cleaner and more inclusive - for example by introducing electric public buses, improving accessibility with wheelchair ramps, and training drivers to respond to harassment when it occurs in their buses.

For the first time, students automotive studies across three vocational schools in Samoa will receive technical training in EV maintenance, building local expertise and opening pathways for women's participation in a field traditionally dominated by men.

High demand meets everyday barriers

When the LTA issued a call for applications for the free training, the response was overwhelming: over 500 women applied within three days. A

public draw selected 200 of them from both Upolu and Savai'i. The demand highlights how essential and overdue such initiatives are.

"As women, as mothers, we juggle everything in our daily lives," says Angel Mala, Senior Promotion and Training Officer at the LTA. "Many shared that they are struggling financially, and this is a way to help them move freely and support their daily lives."

One trainee noted: "Learning how to drive will make it easier for me to travel to school, church, and anywhere I need to go." On EV training, she added: "I learnt that EVs can be more convenient than petrol cars—the electricity is cheaper, and they're better for the environment."

Still, sustaining participation has been a challenge. Many women balance paid work, caregiving and household duties, making it difficult to attend repeated tests. The LTA has responded with flexible scheduling and opportunities to re-sit assessments, an important reminder that gender-responsive programming must account for women's time burdens. Some participants also lacked access to a vehicle for the practical test, which highlighted the need for LTA to have its own practice car to ensure equitable access.

As the programme concludes, for successful trainees, this will be more than a license, it will be a gateway to new opportunities. Empowering women behind the wheel is not only a matter of equality, but also a powerful step toward a more equitable transport future for Samoa.



Launch event of the Women's Driving License Programme

VANUATU

WALKING THE PATH TO ENERGY TRANSFORMATION

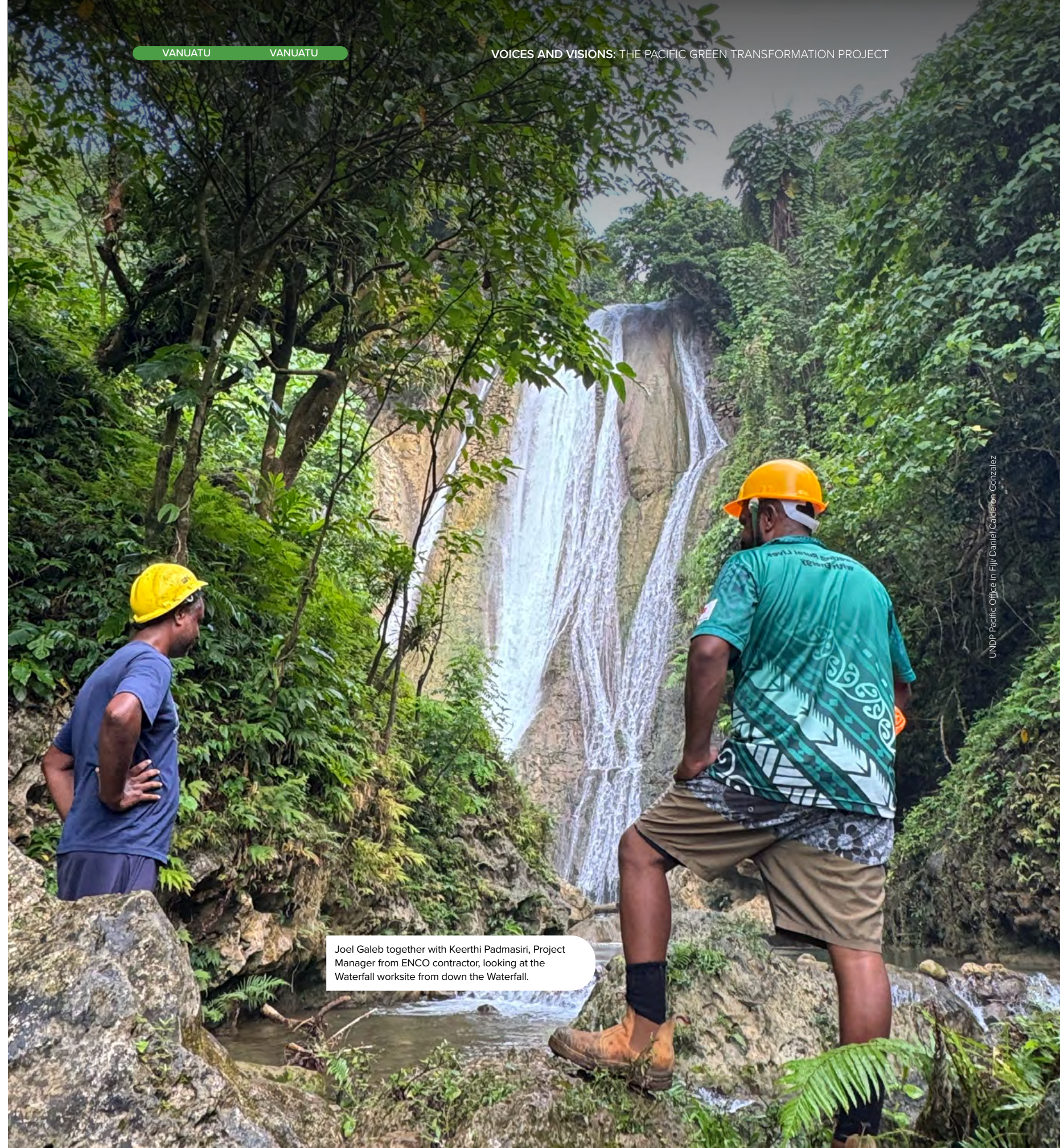
Walking the Path to Energy Transformation

I am Joel Galeb, and I work as the Project Engineer for the Vanuatu Green Transformation (VGET) project.

When I travel to the field, it always feels like a journey across time. As the small plane takes off from Vanuatu's capital Port Vila, it dips low across the islands of my country, before landing in Pentecost, a place that greets me with its endless green slopes, waterfalls, and the reverberating roar of the ocean.

Departing the airport work begins—by car, by quad, by truck, boat and sometimes even on foot, under the sun or rain and across steep and muddy trails. This August, the roads to Melsisi and Larimaat were especially unforgiving, made extra slippery by heavy rains, that made travel treacherous and slow to the worksites. Yet, those difficulties are overcome by purpose: each turn, each climb, each twist is another step towards bringing clean energy to these remote communities of Pentecost.

My role as project engineer is never just about construction—it is about the ultimate goal, the project's impact, on the people who are working on it, the community, and preserving the fragile balance between development and the nature.



Joel Galeb together with Keerthi Padmasiri, Project Manager from ENCO contractor, looking at the Waterfall worksite from down the Waterfall.



Joel Galeb at a community consultation in Waterfall, Central Pentecost

UNDP Pacific Office in Fiji/Daniel Calderon Gonzalez

Duties in the Field

Every site visit begins with an inspection, sometimes together with government officials from the Department of Energy from the Ministry of Climate Change Adaptation, Meteorology & Geo-Hazards, Energy, Environment and Disaster Management. At the three pico-hydro stations, being constructed by UNDP, I verify ongoing work so that payments to contractors are fair and on time. I check that safety measures are followed, that environmental safeguards are respected, and that the rivers we harness for power continue to flow with the least possible disruption.

Often, challenges emerge—delays, disagreements, unexpected obstacles—and I find myself as much a mediator as an engineer, helping resolve grievances between workers, or clarifying issues with the contractor. This August, the community at Larimaat was requesting the constructor to share the project's tractor and vehicle, that led to some miscommunication. After hearing both sides, the project agreed to share them.

This mission also stretched beyond the turbines and powerhouse walls. Together with VGET colleagues, I supported the Terminal Evaluation team, coordinated with the Vanuatu Institute of Technology on the upcoming Certificate 1 training for electricians, and joined meetings with the contractor to chart a path through the technical hurdles. Each of these tasks, though different, threads into the same vision: sustainable, clean, community-owned energy.

Listening to Communities, Walking with Youth

In the field, my responsibilities are not only technical. I always make time to sit with the communities, to hear their voices, and to share what this project means. Clean and sustainable energy is not just light in the night—it is a pathway to better healthcare, education, livelihood opportunities, and dignity for everyone.

Last time, I had the chance to accompany Suvimali Suraweera, our colleague with UNDP's Youth

Empowerment in Climate Action Platform, who is leading the Youth Entrepreneurship Ecosystem Study. On 19 and 20 August, we traveled to the north—through Nambwaranuit, Loltong, Angoro, and beyond—listening to young people speak of their dreams, challenges, and the kind of future they want to build for themselves with the help of new power. For me, it was a reminder that energy is not only about wires and kilowatts, but about creating opportunities for youth, women, and families to thrive.

Nature's Beauty and the Weight of Responsibility

Pentecost is breathtaking. The rivers rush through canyons carved deep into the earth, the forests rise like green colossus, and the sea stretches in endless shades of blue. Working on this project is a big responsibility, but also a privilege.

At night, when the day's work is done, I sometimes sit quietly and imagine these valleys lit by clean hydropower, children studying under safe light, communities free from the burden of expensive fuel. This is the picture of resilience we are all striving for, the Government of Vanuatu, UNDP, and the Government of Japan – that is funding this project.

Toward 2030

The road is long and not without major obstacles, but the destination is bright. Vanuatu has set its National Energy Road Map: 100 percent renewable energy by 2030. Each inspection, each conversation with a community, each training session planned, is a step towards that goal.

“For me, the field is never just work—it is a reminder that transformation is not built in offices alone, but on slippery mountain roads, on riverbanks, and in conversations under village trees. Pentecost teaches me patience, resilience, and its beauty captivates me, every time I return.

And when I get back on that flight to Port Vila, tired but fulfilled, I know I carry with me not just progress reports and technical notes, but stories of people and places that deserve the power we are working so hard to bring to the people of Pentecost. It is that proverbial bright light at the end of the tunnel.



Joel Galeb at the opening ceremony of the Certificate 1 in Electrotechnology Training delivered by the Vanuatu Institute of Technology at the Ranwadi School

UNDP Pacific Office in Fiji/Daniel Calderon Gonzalez

SEVINA'S JOURNEY FROM LOLTONG TO PENTECOST'S ENERGY FUTURE

Life changed dramatically when the lights first came on in the small coastal community of Lolong, North Pentecost of Vanuatu. The arrival of electricity—reliable, clean, and community-managed—heralded a new beginning.

At the center of that story was Sevina Wilkins, a 27-year-old mother of three who became the Finance Officer of the Lolong Pico-Hydro Power Station. She has spent the last three years keeping the books balanced, bills paid, and the administrative system running smoothly.

“Electricity is changing our lives,” Wilkins says. “It brings light, helps our children study, powers our shops and clinics. Now that we, the people, are learning how to run it ourselves—it means we are really in control of our future, and we have no excuse. I see people running their rice cookers and keep coming to buy more electricity and it’s when I realize that there is no way back.”

Past: Lighting Lolong’s Future

The Lolong mini-grid, launched in mid-2022, was more than an infrastructure project—it was a leap of faith in the power of local ownership. Built with an 8.8 kW pico-hydro and PV solar hybrid system, the initiative was funded by the Global

Environment Facility (GEF) and UNDP, with co-financing from the Vanuatu Government through the Department of Energy’s BRANTV Project.

For Wilkins, the job wasn’t easy at first. “When I started, I didn’t have experience in managing accounts or understanding the technical side of electricity,” she recalls. “But I had a lot of support from my manager, Mr. Giorgio Temakon, and I learned everything step by step.”

From billing 106 households to handling payments and salaries, Wilkins grew into her role. “In the beginning, I used to feel shy because the work seemed too big for me,” she says. “Now, I can say I’m proud. I manage all the financial records and help ensure that our community continues to have light every day.”

Her determination helped make the Lolong project a model of community-driven energy management—and a potential blueprint for future renewable projects across Vanuatu.

But then she decided to challenge herself and come out of her comfort zone.

Present: Learning, Growing, and Leading

Three years later, the lessons from Lolong are being scaled up. Inspired by that success, the Vanuatu Green Transformation (VGET) Project - funded this time by the Government of Japan - is constructing three new pico-hydro systems in Waterfall, Melsisi, and Larimaat communities under the regional Pacific Green Transformation Project. Together, they will deliver 65 kW of renewable energy through a 30 km power distribution network, connecting over 700 households that will directly benefit over 3,700 people and improving the lives of thousands more.

And Wilkins is once again at the heart of this transformation. This time—not behind a desk, but in a



UNDP Pacific Office in Fiji/ Daniel Calderon Gonzalez

Sevina Wilkins with her installation after a practical exercise of the Certificate I in Electrotechnology Training



Sevina receiving the certificate from the High Commissioner of Vanuatu in Fiji, Her Excellency Ms. Virania Brown

UNDP Pacific Office in Fiji/ Daniel Calderon Gonzalez



Sevina Wilkins with all participants to the Certificate I in Electrotechnology Training delivered by the Vanuatu Institute of Technology at the Ranwadi School

UNDP Pacific Office in Fiji/ Daniel Calderon Gonzalez

classroom. She is one of the 23 participants of the first-ever Certificate I in Electrotechnology (EET10219) delivered by the Vanuatu Institute of Technology and hosted at Ranwadi College under the VGET Project, accredited by the Vanuatu Qualifications Authority (VQA). The 41-day training teaches practical skills in electrical safety, wiring, solar systems, mini hydro stations, troubleshooting, and digital tools—empowering community members to oversee their local renewable energy systems.

“There are four of us women in the course,” Wilkins says proudly. “This kind of activity might have been always seen as something for men. But now I know that women can also work with electricity. We can fix, we can maintain, and we can manage.”

Her motivation goes beyond personal growth. “As a finance officer, I often get technical questions from clients. Now I will be able to answer them and even support my colleague, John, who is the technician at our station,” she says.

Future: Empowering Women, Sustaining Energy

For Wilkins, this training is more than a personal achievement—it’s a symbol of how far her community has come, and a glimpse of the future Vanuatu is building: one where women take leadership in energy, where communities manage their systems confidently, and where clean power reaches every island and every community.

As the new mini-grids at Waterfall, Melsisi, and Larimaat rise, Wilkins’s journey stands as a powerful reminder that the success of energy projects lies not only in turbines and wires, but in people—especially community dwellers—who make them sustainable.



Sevina Wilkins during a class of the Certificate I in Electrotechnology

“

I started as someone who only did the billing. Now I am learning how electricity actually works. Tomorrow, I will be part of helping other communities have what we already have in Loltong. That is what makes me proud. And I hope the new staff get administrative and accountability training so as not to struggle the way I did at the beginning,” she says.

Sevina Wilkins’ story—from finance officer to future energy leader—mirrors the vision of the Vanuatu Green Transformation Project: combining infrastructure, capacity building, gender empowerment, and community engagement to ensure that every light that shines across Pentecost Island is powered not only by water and sunlight—but also by human potential.



The four female participants of the Certificate I in Electrotechnology

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ENERGY PROJECT BRINGS CHANGE AT ALL LEVELS IN LARIMAAT

In Larimaat, a remote community in Eastern Central Pentecost, women are leading the way in showing what resilience, empowerment, and collective determination look like. Their story is proof that access to electricity is not only about infrastructure—it’s about people, dreams, and the will to create change.

Several years ago, a pilot electrification project in Larimaat failed, leaving the community’s hopes for light and opportunity on hold. Now, through an initiative—funded by the Government of Japan under the UN Development Programme’s regional Pacific Green Transformation Project and as part of the Vanuatu Green Transformation Project—those hopes have been revived.

Once the project is complete—expected by the end of this year—communities in Larimaat will have 24/7 access to electricity, powered by clean energy.

Reaching Larimaat is no easy task. From the end of the nearest road from the town of Melsisi, it takes a grueling three to four hours on foot, trekking through muddy trails, flooded paths, and the scars left behind by frequent cyclones.



Elisa Tamaraka with her child and team of community workers from Larimaat community, Northeast Pentecost Island

UNDP Pacific Office in Fiji/ Daniel Calderon Gonzalez

Yet the community's remoteness has also forged a strong sense of solidarity and tradition. When the new pico-hydro power station began construction, the women of Larimaat resolved that they would not let this chance slip away.

Energy will be especially transformative for the Larimaat community, given its deep remoteness in northeast Pentecost and the long-standing challenges of accessing essential services. Under the new GX pico-hydro project, a total of 147 connections will be established across four communities—Le Vitlis, Larimaat, Vanrasini, and Jimberke—clinking 121 households, 18 businesses, and 8 institutions, including schools and health facilities, through a 5.2-kilometre electrical network.

This reliable and clean energy supply will completely reshape daily life: children will be able to study safely at night, health workers can store medicines and vaccines within a proper cold chain, women and youth can develop new livelihoods such as sewing, cooking enterprises, refrigeration-based businesses, and technology-enabled services, and families will save precious time previously spent searching for firewood.

In practical terms, this transition means a future where opportunities are no longer limited by daylight or distance. Electricity will unlock learning, expand economic choices, improve health and safety, and strengthen resilience—setting Larimaat and its neighboring communities on a new pathway toward dignity, prosperity, and sustainable development for the next generation. Given the promising opportunities ahead—and mindful of a past project that once failed—the community has come together with renewed determination. They have organised themselves, contributed labour and resources, and worked tirelessly to ensure that this new energy project succeeds. This time, the community sees the project as truly *theirs*—a collective investment in their future—and they are firmly committed to not letting it fail again.



Micheline Molsambak and Jocelyn Matan from Pentecost Island together with (from left to right) First Secretary of the Embassy of Japan in Vanuatu, Mr. Munetoshi Ishida, UNDP Pacific Multi-Country Office Resident Representative, Tuya Altangerel, Acting Director of Energy from the Ministry of Climate Change Adaptation, Meteorology and Geo-Hazards, Energy, Environment and Disaster Management, Abraham Nasak, and VGET Project Manager, Mr. Imran Khan



Community workers team from Larimaat including (from left to right) Chief Pierre Chanel Vireyal, Gina Wakret, Doris Savu, Micheline Molsambak, Imelda Virey, Noelia Molwai, and Elisa Tamaraka



Micheline looking at the exhibition displayed during the launch of the Gender Study of the Energy Transition in Vanuatu with a focus on Pentecost in Port Vila



Practical exercise presentation at the Green Skills Training



Team work exercise at the Green Skills Training

At the heart of this effort is Micheline Molsambak, 45, mother of six, and the wife of the community's chief. Micheline speaks four languages—Atma, Bislama, French, and English—and embodies the spirit of willingness. She proposed that the women take an active role in supporting construction.

Since transporting building materials into Larimaat is expensive and logistically difficult, the women collect and carry heavy buckets of sand and coral from the rough, wild coastline. Each bucket weighs about 18 kilos and earns each of them 200 vatu. The work is exhausting, but Micheline and her peers have turned it into a life-line of income and have established a sense of ownership in the project.

Among those working beside her today is Elisa Tamaraka, 29, a mother of three children aged two, five, and eight. The money she earns from hauling buckets helps feed and clothe them.

Then there is Gina Wakret, 50 years old, who lives alone. She saves her earnings carefully in case

of illness, determined that she will not burden others. They are among a clutch of women who understand how access to energy will transform lives in their remote communities.

“For Imelda Virey, 32, the work is not just about money—it is about relief from the long nights of dim kerosene lamps. “Until now we are using kerosene,” she explains. “It is expensive, and fuel is hard to find. Solar lamps only last one or two years, then we must go all the way to Vila (the capital) or Santo to buy another.”

The women are also digging trenches for the 4-kilometre electricity network that will connect Larimaat with nearby communities of Vanrasini, Jimbeke, and Le Vitlis. With no machines on-site, every meter of the trench—one meter deep and half a meter wide—is dug by hand. For every meter they plow through, they earn 150 vatu.

Doris Savu, 51, mother of seven and grandmother many times over, who laughs at herself for losing count of her grandchildren, shrugs at the difficulty

of trenching. “Some ground is easy,” she says, “but when we reach rock we must break it slowly, piece by piece, to keep moving forward.”

The income the women earn pays for school fees, uniforms, books, and household necessities. They also dream of stronger homes built with cement, that will be able to withstand cyclones. Traditionally, women in Larimaat weave mats and baskets from pandanus leaves. With electricity, they look forward to weaving well after sunset, increasing production and in turn boosting income.

“Electricity will be a big change,” Micheline says. “We can’t wait with crossed arms. We must bring the change, produce the change. We are the change.” Micheline’s husband, Chief Pierre Chanel Vireyal, proudly acknowledges the role of women: “I am proud of their decision to help build the hydro power station,” he says. “To be honest, I could not stop them even if I wanted to.”

The Larimaat pico hydro station is small, but it will be transformative. It will deliver reliable electricity to 121 households, enabling refrigeration, sewing, baking, and better conditions for children to study past sunset. They say having electricity will allow them to bake, sew uniforms, and preserve fish in fridges, and most of all to save time.

So far, they have transported around half the boxes, but still 10,000 are needed before completion. Each box, each trench, each step brings Larimaat closer to its long-awaited brighter future.

The journey may be long, muddy, and hard, but the destination is a shining light. For Larimaat, this project is not just about electrification—it is about dignity, empowerment, and a community proving that they themselves are an integral part of the change.

JOCELYN MATAN: LOOKING FOR A FRIDGE ANTICIPATING THE ARRIVAL OF ELECTRICITY

Jocelyn Matan cooking in her kitchen

In the village of Waterfall, Pentecost—where the mountains fold into deep green valleys, and the river carries its cool breath to the sea—there is a small kitchen with no electricity, no polished countertops, and no fancy utensils. But it has something rarer: the unwavering will of a woman named Jocelyn Matan.

Jocelyn was born in Ranmawad, raised by a family and community that taught her to stand firm in the face of challenges. She married a man from Waterfall, where she built her home and cultivated her dreams, one small step at a time. She never studied business or attended culinary school. But as the years went by she developed something far more powerful: instinct, grit, and a natural talent for flavour and cooking.

Even as she pursued that passion, life, continued to throw challenges her way. Recently, she lost her husband—suddenly, without warning—most



Jocelyn Matan during the Green Skills training at Ranwadi School, Central Pentecost

likely she believes he had a heart attack. On Pentecost Island, where there is barely basic medical care; the questions of how he died linger, unanswered. Yet, in that obliviousness, Jocelyn keeps moving forward. She keeps cooking. She keeps building. Because survival, for her, has always meant staying in motion.

She didn’t start as an entrepreneur. That journey began in the kitchen of the Chinese contractor camp that built the Pentecost road—four long years of stirring, chopping, cleaning, learning. And when that ended, she took what she had—her hands, her skills, and her courage—and

Group photo Green Skills Training



Vanuatu Green Transformation Project

Contributing to the country's 100% electrification with renewable energy by pico-hydro power stations in rural locations

started cooking takeaway food from her own home.

At first, she charged 250 vatu—about US \$2—for a plate of food. But the meat prices were too high, and she quickly realised her business would not survive. She raised it to 300 vatu—a small adjustment, but also an important act of self-value. Now she sells about 20 plates a day, depending on demand, mostly to guesthouse visitors, boys from the community, taxi drivers, and nearby families.

She cooks in the mornings and evenings. People call or message; she books the orders. On Sundays she tries to rest—*tries*, because if someone asks, she always gets up and cooks.

Her cooking has become so famous around Waterfall that whenever a training or workshop happens, she is called to do the catering. To cater for large events, she brings her sister-in-law, Jarolyn Mabu, to help. Two women, two fires, pots simmering, rice steaming, laughter rising along with the smoke.

Her dishes are simple but full of soul: beef, chicken, river lobster, fish when she can find it—especially tuna, expensive but worth it for the flavour and higher profit. Beef she buys when local farmers butcher a cow, or sometimes she orders from the town of Santo. Chicken brings little profit, but people love it.

And then there is laplap—*her* signature dish.

When I last visited Jocelyn's home, the menu she cooked was unforgettable: Naviso laplap taro with coconut milk, that was velvety and fragrant; and Nauru lo freswota—river lobster in rich coconut milk, a Pentecost delicacy. It was a feast. A quiet revelation of a woman who cooks not with recipes but with memory, culture, and intuition.

Her yard, in Waterfall, is famous—full of Manki banana trees, their leaves perfect for wrapping



Jocelyn Matan with a team mate doing a presentation during the Green Skills Training

laplap, their bananas sweeter than anything from the market. And she cooks along with the seasons. “This time,” she said, “it’s crab season.” She explained how the river lobster is available all year, how February is the month when crabs go missing because they lay eggs. But cooking too has its own challenges.



Jocelyn Matan and Micheline Molsambak during the presentation of the Gender Study of the Green Transformation in Vanuatu with a focus on Pentecost Island, Port Vila, Vanuatu

Soon, the UNDP's Vanuatu Green Energy Transformation Project (VGET) will bring 24/7 green electricity for the first time, to Waterfall. VGET is part of UNDP's regional Pacific Green Transformation Project and funded by the Government of Japan.

She speaks of it as though it were the dawn waiting to rise behind a ridge. A freezer is the first thing she dreams of—she can almost see it standing in her kitchen, keeping meat fresh, expanding her business, stabilizing her income. After that, an oven. Maybe later an electric stove for certain dishes. And one day, larger catering orders, more guests, maybe even a bigger kitchen.

During the Leadership Training and the Green Skills Workshop the VGET project organized, Jocelyn was the heartbeat of the Waterfall group. She helped design a business plan for a women's cooperative—and a guesthouse and food service for visitors. Their plan received a special mention. Of course it did. Her energy pulls others along.

She even hosts students—charging 500 vatu per night. Slowly, steadily, she is building something lasting.

Jocelyn Matan is many things: A widow, a cook, a leader. An entrepreneur by necessity and by heart. But above all, she is a woman who refuses to let darkness—literal or figurative—define her path.

“Energy is coming. Opportunity is coming. And she is already preparing, planning, and dreaming. Her story is not one of the electricity arriving in a community. It is the story of a community that already had its spark—and a woman whose fire is always burning.”

The firewood she uses each day burns slow, smoky, and leaves her tired at the end of the day. Gas is expensive. Meat spoils quickly. There are limits to what she can store, what she can offer, and how much she can grow.

Still—her eyes light up when she talks about the future.



Jocelyn Matan at the sewing machines handover ceremony

THE CHIEF WHO BUILDS LIGHT WITH HIS PEOPLE: THE STORY OF ISAIAH TABI OF WATERFALL

In Waterfall, on the central spine of Pentecost Island, the sound of rushing water has been the community's constant companion. But in recent months, another rhythm has taken hold — the steady thud of tools on timber, the scrape of crowbars on stones, and the hum of voices working together along the riverbanks. Everywhere you look, men, women, and youth are carrying sand, hauling cargo, clearing paths, and preparing for something they have dreamed of for years: 24/7 electricity for the first time ever.

At the centre of this movement stands Chief Isaiah Tabi, a quiet, steady man leading nearly 300 people in the Waterfall area. No one pays him to be chief. It is work carried by what is called in Waterfall “kastom” — custom in Bislama language — by duty, and by the memory of those who came before him.

Isaiah is the youngest among his brothers, yet the community chose him — not because he was most senior, but because they trusted his values, character, and vision. His father and grandfather before him were also respected chiefs. Leadership runs through the Tabi line, but not by entitlement. In Vanuatu, kastom decides, and kastom saw something in him.

When he was selected as chief, he did something few expected. Instead of settling into his new responsibilities, he left Pentecost. He travelled to Port Vila and enrolled in a business management course, determined to serve with knowledge, as



Chief Isaiah Tabi during his speech at the Sewing machines handover ceremony at Ranwadi School

well as tradition. He wanted to “train his brain,” as he later told the community.

“Here in Pentecost, we use our arms and legs. But we must train our brains too.”

He spoke those words recently at the closing ceremony of UNDP's Vanuatu Green Transformation Green Skills (VGET) Training for 21 women in Ranwadi School. VGET is part of the regional Pacific Green Transformation Project and funded by the Government of Japan.

As he stood in front of the women — new entrepreneurs preparing for the arrival of electricity — his message was clear: development is not only physical. It starts in the mind.

He encouraged them to use their new skills to build businesses, improve livelihoods, and lead the next chapter of Waterfall's growth. And he promised his support, not as a man above them, but as a partner in progress.

On any given day, you will find Chief Isaiah shoulder-to-shoulder with his people, unloading construction materials from the ship, directing the work teams, or clearing bush for the power lines of the VGET pico-hydro station. He is at the river, at community meetings, at work sites. He is everywhere that Waterfall needs him to be.



Chief Isaiah Tabi awarding certificates at the end of the Green Skills Training at Ranwadi School, Central Pentecost

Because the deadline is approaching. December. Commissioning day. The moment Waterfall will finally gain electricity. He reminds the community constantly:

“This project is ours. We must work for it. We must protect it. We must be ready.”

Chief Tabi is a chief of the present, shaped by the past but focused on the future. He promotes women's inclusion, works with youth representatives, and supports local entrepreneurs. He has even started a small green tourism initiative, creating a Facebook page to attract visitors to Pentecost's hidden beauty. His dream is to link women's new enterprises — sewing, handicrafts, cooking — with tourism, helping them open guesthouses, create women's clubs, and build spaces where culture and opportunity coexist.



Today, with training opportunities rising and new energy systems coming, leadership itself is changing in Pentecost.

Stories like Eloise Barang's, a woman leading community-based work, and entrepreneurs like Jocelyn Matan, young women stepping forward with confidence — all these are signs that leadership no longer belongs to men alone.

Isaiah himself is aware of this shift. Women lead the Green Skills Training, women support community mobilization, women are preparing for electric-powered enterprises, and women are running local groups and building on business ideas. And he stands not in resistance, but in support.

“When asked whether women leaders could rise alongside chiefs, he answers with the same conviction he shows in all his work: “Leadership is about responsibility, not gender. If you work for the community, the community will follow.”

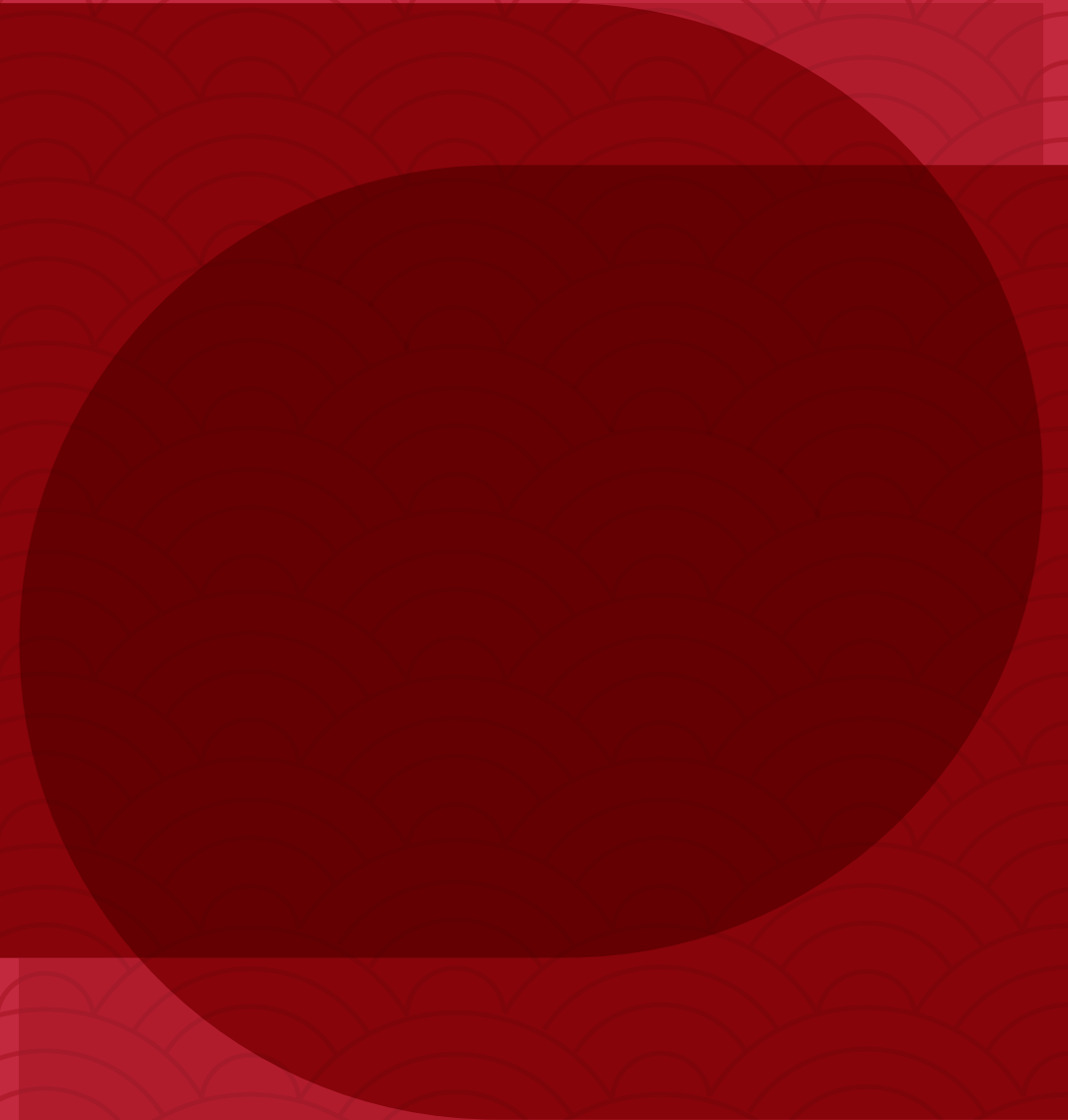
As December approaches, the hydro station at Waterfall grows closer to reality. The pipes, turbines, generators, and power lines are slowly becoming part of the landscape. Soon, homes, schools, clinics, and businesses will be able to glow through the night — something unimaginable just a generation ago. But perhaps the most important infrastructure this project has given rise to lies within the people of Waterfall: confidence, unity, skills, and belief in their own capacity.

Chief Isaiah Tabi stands at the nexus of kastom and modernity, guided by his family's long legacy of teaching and community service, and driven by a deep belief that development must equip the mind as much as the land.

The lights will come soon to Waterfall.

But the leadership that made it possible has been shining here for a long time.

TIMOR-LESTE



BREATHING EASIER, LIVING BRIGHTER

How clean energy transformed a mother's ability to care for her family

For 29-year-old Lucia Cabral, evenings could only mean retreating into a cloud of thick smoke and darkness. In Uma Naruc, a remote village in Manatuto municipality, six family members share a home with a monthly income between \$150 and \$200.

Lucia's days revolve around subsistence farming and household management; she always juggles caring for her four sons while maintaining the rhythms of rural life in the sub-village of Bua. But without reliable light post sunset, her ability to work—to help her children, to cook a nourishing meal, to navigate in her own home—tapers drastically. The kerosene lamps offered only dim, expensive relief. Batteries often drained quickly. While candles carry enough light to help her complete her duties. Each month, the financial strain of temporary lighting solutions takes precedence over other priorities: *rice, vegetables, and school supplies.*

Meanwhile, her kitchen told another tale of hardship. The traditional three-stone cooking method demanded constant wood collection and produced engulfing smoke that filled the cooking space. While Lucia coughed through meal preparation, her sons' eyes reddened from the fumes. The very act of nourishing her family meant exposing them to harmful smoke, day after day.

"I couldn't spend time with my children, couldn't help them with homework," Lucia recalls. "I worried about their learning, about their future. And in the kitchen, I worried about their lungs, their health."

Then, early 2025 introduced a new way of life as her family became one of the 1000 households to receive a solar panel kit

Under the glow of a solar lantern, a mother holds her child in their home that has replaced expensive kerosene lamps and batteries, enabling families in Uma Naruc to navigate life after dark



and an improved cooking stove under UNDP's Pacific Green Transformation Project, funded by the Government of Japan.

The solar kit comprised four lanterns, a panel, cables, a charger, and a remote controller. While the new stove required only two pieces of dry wood to burn effectively with minimal smoke, a fraction of the fuel the traditional *la'lian* consumed.

"Everything shifted," Lucia notes with a sigh of relief. "I can cook properly now without smoke choking us. I can see what I'm doing at night. I can sew my children's clothes without straining my eyes. I can move through my house without fear."

For the first time, her sons could study after sunset under reliable light while breathing cleaner air. The kitchen transformed from a hazardous necessity into simply a place where meals are prepared. Simultaneously, the improved stove freed Lucia from hours of wood collection, and the portable solar lanterns allowed her to carry light outside at night.

"I feel safer now, in every way," she explains. "Safe moving around at night, safe knowing my children aren't breathing harmful smoke."



Lucia Cabral with her children in their home in Uma Naruc, this is a household where solar panels have brought not just light, but the ability for her children to study, for the family to gather and spend time together.

Lucia's story not only weaves a vision of a new future, but it also envelops stories of immediate ease. Money that was previously spent on kerosene, batteries, candles, and excessive firewood is now diverted to better food, necessary household materials, and savings for a brighter tomorrow. Her family contributes more meaningfully to cultural gatherings and extended family obligations—events central to life in Uma Naruc.

“

“Our children study better in clean air and good light. We save money. We gather as a family,” Lucia reflects. “This is an opportunity for a better life.”

For now, in Uma Naruc, two simple truths prevail: where there *was* darkness, there *is now* light, and where there *was* smoke, there *is now* clean air. And for Lucia Cabral and her four sons, evenings are now filled with quality time where the family helps with homework and chores, something Lucia was unable to find time for before.



Inside a traditional kitchen in Uma Naruc, where cooking meant sitting under dim kerosene light for long hours has been transformed by the arrival of the improved cooking stove and solar lanterns



A traditional home in Uma Naruc, Manatuto, where families like Lucia Cabral's once retreated into darkness each evening, their activities constrained by the setting sun

Her vision for the future extends far beyond her village as she expresses worry for countless communities in Timor-Leste who remain disconnected from electricity and clean cooking technology. The independence and dignity that light and health enable pave the way towards a sustainable collective dream.

Lucia represents stories of many women in the 1000 beneficiary households across rural Timor-Leste who received solar panel kits and improved cooking stoves. Accessible infrastructure that lends itself to a sustainable future in the face of climate change vulnerabilities offers a vital sense of security and belongingness to its communities.

It is hard to deny the transformative power of reliable light and safer cooking systems in households. The Pacific Green Transformation Project, supported by the Government of Japan and implemented by UNDP, provides tools for a better today to create an even stronger tomorrow for Timor-Leste.

COUNTING COSTS IN THE DARK

The value of light in bringing change

In a village under the Manatuto municipality, every month, a 43-year-old Manuel da Costa spends his mornings calculating what his family of six could afford and what may have to be sacrificed to keep the lights on.

A large portion of his family's average monthly expenditure is spent on finding alternate—often expensive—sources of lighting, as they continue to remain disconnected from the main grid.

Manuel da Costa demonstrates how a solar lantern illuminating his home in Uma Naruc once cost his family \$30-\$40 monthly in kerosene, now provided free by the sun

Kerosene costs go up \$30 to \$40 monthly. While car batteries range anywhere between \$30 to \$40 for smaller ones and \$80 to \$100 for larger capacity ones. When batteries fail—and they usually do—or die down, the entire cost is doubled.

By the end of each month, energy expenses often become a source of financial stress, especially in households with an average income of \$200 monthly. Manuel's home is one such exam

Manuel is a farmer in the sub-village of Bua. For him and his family, darkness brings more than inconvenience; it also often brings anxiety. Manuel's farm animals graze on land beyond his house, and his crops demand careful attention. Most nights, he circles these grounds with inadequate lighting at night to safeguard his house and farm animals from theft or predators.

“We didn't feel unsafe in our home,” he says carefully. “But we felt uneasy about our animals, about our livelihood out there in the dark. We needed to check on them, especially at night, but it was difficult.”

At the same time, his family struggled with everyday tasks in the absence of reliable lighting throughout the day.

“We needed light for everything—cooking, cultural gatherings at home, our daily routines,” Manuel explains. “But we also needed to save for cultural expenses, for our obligations to extended family. The money going to kerosene and batteries should have gone to our children, to our future.”

A significant shift came in 2025, when Manuel's household was one of the 1000 beneficiaries of a solar panel kit and an improved cooking stove as part of the UNDP Pacific Green Transformation Project, supported by the Government of Japan. The installation included a solar panel, four lanterns, cables, a charger, and a remote control.



Manuel's family of six benefits from a solar lantern inside their home. This portable, reliable light source is ready for evening use, eliminating the need for batteries or fuel. The switch saves his family a significant amount of money every month

“Everything changed with our daily routines,” Manuel reflects. “Cooking became easier. The kids could study properly. We could gather with family in the evenings.”

For Manuel's wife, the extra hours of light have expanded her possibilities—giving her time to weave, sew clothes, create mats, and tablecloths—to revive traditional crafts which can become a future source of income.

“My wife can do so much more now at night,” Manuel observes. “Helping the children, household tasks, and her crafts. We share the work. I repair walls and garden fences, and she manages the household and helps the kids with their studies. We both believe women and men carry the same responsibilities for sustaining our family.”

The children's education has also transformed drastically. Before solar power, they studied using kerosene lamps under its diminishing beam. Now they work under reliable, bright light long beyond the sunset.

UNDP BRH/KAPIL DAS



Manuel walks through his village compound with his son—a father who can now extend his work and family time past sunset, no longer constrained by expensive, unreliable lighting solutions

UNDP BRH/KAPIL DAS



Manuel carries wood he uses to make a sturdy fence around his farm—protecting his crop and property

“

“Our children study better, for longer periods, without hurting their eyes,” Manuel says with satisfaction. “They can finish their homework properly. They have the same opportunities as children in places with electricity.”

His family's largest source of stress was the financial dent energy costs would create, but the financial benefits of solar panels have been instrumental in transforming their lives. Manuel estimates he saves a substantial amount of money every month now. Those savings are now redirected towards children's books, household necessities, and family gatherings.

The portable lanterns also bring in a new sense of flexibility. He could carry them wherever needed—out to check the animals, across the grounds to inspect crops, into different rooms as work demanded. Additionally, these lanterns have two switches; the second switch has a lower-power setting that lasts all night.

Across Timor-Leste, many households like Manuel's remain off-grid, unable to experience the independence that reliable energy can bring. Through the UNDP Pacific Green Transformation Project, supported by the Government of Japan, families like Manuel's are discovering what becomes possible when darkness no longer limits their choices.

For now, in Bua, Manuel da Costa no longer calculates the cost of light; instead, the possibilities it holds.



Manuel's family of six benefits from a solar lantern inside their home. This portable, reliable light source is ready for evening use, eliminating the need for batteries or fuel. The switch saves his family a significant amount of money every month

UNDP BRH/KAPIL DAS

DISCOVERING THE WORLD AHEAD WITH ICT LABS

How solar energy made digital learning possible for students in Manatuto

“We’ll be using laptops when we find jobs. Everything requires computer use now. This prepares us,” said Alexandrina Pereira Campos, an 18-year-old student at Kayrala Public School.

At Kayrala Public, a senior secondary school in the Manatuto district, as a new ICT lab gets installed, many students get access to computers for the first time.

For 18-year-old Cláudio Firmino Lay Soares, computers existed out of his reach. As part of his multimedia class, he learned many skills—how to turn them on and off, the names of fonts and symbols, and the components like UPS systems and keyboards. But their learnings were limited to theory. Due to limited computer resources, many students like Cláudio never had the opportunity to test and practice these concepts, which are yet to become skills.

“We only learned theories about computers and their components,” Cláudio recalls. “We hoped everyone would get the same opportunity for hands-on experience, but there were so many students and no working computers.” His classmate Alexandrina Pereira Campos, also 18,



Cláudio Firmino Lay Soares, Alexandrina Pereira Campos, Aurélia Franjo Ximenes Carvalho da Costa, and Natalino Balman dos Reis Soares at ESG Kayrala (left to right) are Grade 11 students who are finally experiencing hands-on computer practice after years of theoretical-only multimedia classes



Students at Kayrala’s ICT lab engage with computers for the first time, touching keyboards, navigating interfaces, and building the digital literacy skills essential for their futures, now powered by reliable solar electricity



Kayrala Public School in Manatuto, where students once learned about computers only through theory, until UNDP’s ICT lab installation brought the digital world within reach

added, “We never had any practice using computers in our classes before. We learned about them, but we couldn’t really use the components we studied in theoretical classes.”

Another grade 11 student, Natalino Balman dos Reis Soares (17 years old), said that he recognises the need to master basics like typing, understanding the symbols and commands to prepare for further education and employment, but infrastructural constraints worry him. “I don’t have a computer of my own. I need to learn these basics. But there was nowhere to practice.”

Timor-Leste’s national education standards mandate multimedia instruction, recognising the pivotal role of digital skills to open avenues for greater opportunities. Many young students across rural Timor-Leste worry about how future employment opportunities may be affected due to limited access to resources. Many of them continue to face barriers due to unreliable power supply, both at home and in school, despite a strong commitment towards improving literacy across the country.

In alignment with SDG Goals 4 and 13—quality education and climate action, respectively—UNDP, with support from the Government of Japan, has made significant strides towards the upgradation of school infrastructure in Timor-Leste. As part of the Pacific Green Transformation Project, they have built 15 ICT labs in secondary schools. Kayrala Public School has been one of the recipients of the solarised labs, where students have been filled with new enthusiasm and curiosity. UNDP’s ICT lab installation has provided students and staff with functional computers with reliable solar power, internet connectivity, and trained teachers.

“I am very happy about the installation of the computer lab,” Cláudio says with evident joy. “We finally have the opportunity for hands-on experience.”



A student works toward his dream of learning coding and software development, which is now possible with adequate classroom resources and hands-on practice in the new ICT lab

Natalino's excitement centres on timing: "I feel very happy because we can finally have a computer classroom in 2025. I'm very interested in digital skills, and now I can practice using them."

Such a transformative change benefits students not only with digital literacy but also guides them towards new possibilities for the future. For instance, Cláudio harbours ambitions to learn coding and software development—complex skills the school curriculum doesn't cover, but which require foundational digital competency.

“In this digital era, many schools have already advanced their teaching methods using computers. We were falling behind. What we've gotten will truly make advancements in our education.”

His vision for the school includes fixed schedules ensuring every class receives computer practice time, plus Saturday sessions and extracurricular programs, maximising access for students eager to develop digital skills.

While Alexandrina sees immediate practical applications, greater ease in completing homework assignments using Microsoft Office tools, and conducting better research online, skills that are directly applicable to future employment.

For others, the installation of solar panels powering the ICT lab offers hope. Students shared instances when annual events such as Valentine's Day celebrations came to a jarring halt due to a power outage, and they had to rely on flashlights and candles. Cláudio, Alexandrina, Aurélia, and Natalino represent countless students across Timor-Leste—young people whose futures depend on skills they've never practised, and possibilities they've only imagined. But now, possibilities are *accessible*.

For Aurélia, this moment marked the start of a new journey: "I am very pleased to have an ICT class now. I want to learn a lot about computers."



I FEEL AT EASE NOW

Maria Luvita sits beside her improved cookstove in Uma Naruc that requires only two pieces of dry wood to burn effectively, eliminating exposure to harmful smoke

How clean cooking technology transformed health

"The smoke made us cough, especially my children and elderly family members," Maria recalls. "I worried about their health constantly, but what choice did I have?"

For 23-year-old Maria Luvita, motherhood in Uma Naruc meant choosing between impossible priorities. In her household of six in the sub-village of Bua, where monthly income rarely exceeded \$200, she spent long hours each day collecting wood while her three young children (two daughters and a son) patiently waited at home.

Cooking with la'lian (traditional stove) was a tedious process. The old way required stones ar-

ranged as a foundation, with six to eight dry sticks or pieces of wood fed constantly to keep the fire burning. It would engulf the corners of her home with a smoky haze, making her cough, irritating her children's lungs, and reddening their eyes. But cooking, despite its hurdles, meant feeding her family.

Wood collection consumed Maria's days. She scoured the land around their home for fallen branches, adequate sticks, and burnable material. When family gatherings or cultural events approached, she and her husband cut down trees, stockpiling dry wood for the cooking demands these occasions required.

Her husband helped when he could, collecting wood after returning from farm work. Yet when

the children fell sick, much of the burden of managing her responsibilities fell on Maria—looking after her coughing children, gathering fuel, and preparing meals while maintaining the household, became an exhausting cycle with no relief.

“It was a hustle to look after the children when they got sick,” she says quietly. “It took so much of my time.”

In March 2025, Maria’s family received an improved cooking stove and a solar panel kit as part of the UNDP and Government of Japan’s Pacific Green Transformation Project, which brings renewable energy and sustainable solutions to improve lives, especially in remote areas.

The arrival of the improved cookstove transformed Maria and her family’s reality immediately. This new, sustainable cooking stove is compact and efficient, requiring only two pieces of dry wood maximum to burn effectively—a fraction of the fuel the traditional method consumed.

The fire burns brighter and longer, helping her nourish her family while staying healthy with minimal smoke exposure.

“When we got the new stove, we felt so much more relaxed,” Maria explains. “It doesn’t take a lot of space, doesn’t require much wood, and burns fast.”

Hours previously spent collecting and stockpiling wood could now be used in a myriad of ways. Maria now finds adequate sticks without going too far away from her home, sufficient for everyday cooking needs. Her looming anxiety about fuel supply has slowly vanished.

“We don’t have to spend a lot of time collecting and stocking dry wood anymore,” she reflects. “We can easily find sticks around the house, and it’s enough to make a good fire and cook food.”

Water even boils faster now, essential to boil water for drinking, cleaning, and basic hygiene.

Cooking no longer requires long hours, freeing Maria to focus on other household tasks, farm work, or simply spending time with her children without the constant pressure of tending an inefficient fire.

Her biggest relief has been the improvements she notices in her children’s health and well-being. Her daughters and son no longer cough through mealtimes. Her children’s coughing reduced from being a daily occurrence to nearly vanishing.

“My children don’t cough or get red eyes from the kitchen anymore,” Maria says with evident relief. “I feel at ease now.”

The transformation carries health and environmental implications beyond Maria’s household. Reduced wood consumption means a smaller household contribution to deforestation, reduced pressure on surrounding forests, and a lighter footprint on ecosystems that must sustain

communities for generations. All while making everyday life easier and safer for rural families in Timor-Leste.

“I hope UNDP and the Government of Japan can continue supporting us, especially training us to make our own stoves,” Maria says. “When we need them for cultural events, we can cook more and support family gatherings better.”

Somewhere in a small cluster of homes in Uma Naruc, Maria turns on the solar light that hangs above her stove. She squats next to her new stove and cooks again, but now, without smoke, and without endless wood collection. As the rice boils, she finds herself worrying less about her children’s health. For Maria and the thousands of families like hers, these small changes open pathways to healthier, more sustainable futures.



Maria Luvita stands with one of her three children outside their home in the sub-village of Bua which has been transformed by solar panels and an improved cookstove that have given her time, and better health



A solar lantern illuminates Maria's kitchen space; it has replaced expensive kerosene and batteries, allowing her to cook safely at night and move confidently through her home without fear of stumbling in darkness



The compound in Uma Naruc where Maria's family lives is now equipped with solar panels visible on rooftops, bringing light to the entire community



A glimpse of how the solar panels are installed on traditional homes in the village of Uma Naruc

TEACHING COMPUTERS WITHOUT COMPUTERS

Solar-powered ICT labs bring digital literacy to rural students

As the school director of Kayrala Public School in Manatuto district, Agustinho da Costa has watched his team of dedicated teachers struggle to teach computers without equipment, to meet a national curriculum mandate. The widening gap between what his staff and students needed and the resources he had access to became a pressing issue.

“We only taught students theoretically,” Agustinho recalls. “Our teachers aren’t experts in computer science or technology, but they put effort into teaching based on their own knowledge and experience, according to the curriculum, without professional training.”

The Information and Communication Lab (ICT lab), better known as the multimedia class, is an integral part of Timor-Leste’s mandated national curriculum. Yet, limited resources at the school have made it difficult to uphold this obligation.

Back in 2012, as Agustinho recalls, the school had received computers during Prime Minister Xanana Gusmão’s term, followed by additional government support in 2016. These computers



Agustinho stands before the UNDP Pacific Green Transformation Project sign at ESG Kay Rala school in Manatuto, where a 27.3 kWp solar installation and hybrid battery system now powers technology education

became a pivotal point of change for the school. However, years of continuous use and evolving learning requirements soon outpaced the computers’ capabilities.

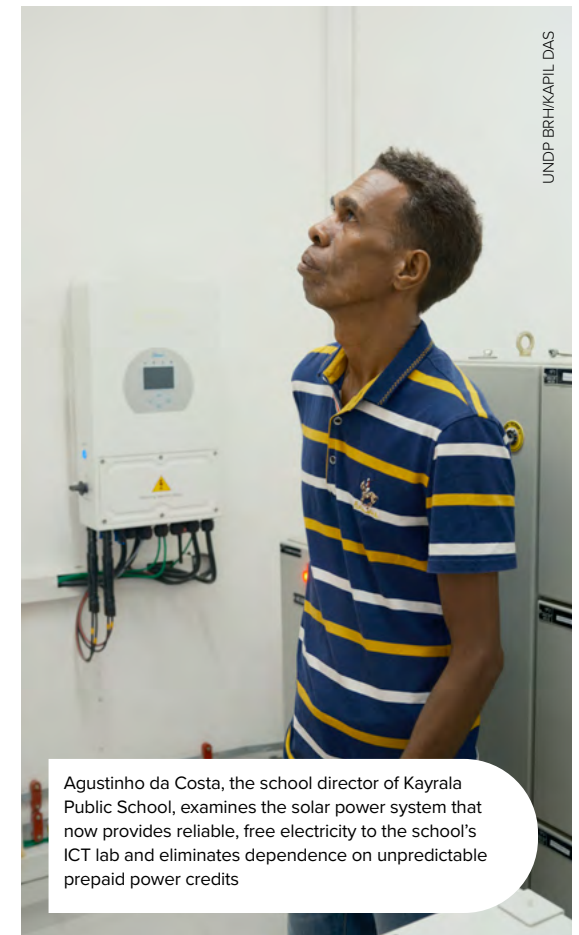
Another major obstacle was frequent electricity blackouts. Kayrala Public School depended entirely on prepaid power credits. Each time the credits ran out, school infrastructure would become non-functional—classroom activities were often delayed, and administrative tasks would come to a halt—until power was restored.

“Blackouts were one of our biggest issues,” Agustinho explains. “They caused classroom lessons to be delayed, especially computer classes. Our administration work requires electricity to power laptops when batteries run out. We depended so much on electricity credits.”

Yet, the teachers worked hard to try to teach media and technology to the students, despite not having a proper classroom without backup power or reliable internet. With growing curiosity from students, the teaching staff taught students concepts theoretically, where lessons had to remain general and vague due to the limited functional computers.

Through UNDP’s Pacific Green Transformation project, with support from the Government of Japan, 15 secondary schools received fully equipped ICT labs with solar panels to build a stronger tomorrow. With UNDP’s support, Kayrala Public School is now sharpening its students’ basic technical skills for their promising futures.

The ICT lab—an indispensable facility for young students—has provisions for back-up power



Agustinho da Costa, the school director of Kayrala Public School, examines the solar power system that now provides reliable, free electricity to the school’s ICT lab and eliminates dependence on unpredictable prepaid power credits

generators, so learning does not have to be compromised by blackouts; advanced computers with updated software; air conditioning; robust internet connection to enable student curiosity, as well as required training for teachers to aid them with seamless knowledge sharing.

“UNDP sees the future and how it can be sustainable,” Agustinho emphasizes. “They provided complete kits for the computer lab, but most importantly, they trained our teachers in computer skills. This guarantees long-term use of the ICT lab and knowledge transfer. Human resources are most important.”

The teachers have also received training to familiarise them with widely used online tools such as Zoom, Microsoft Office applications, etc.



Inside the newly equipped ICT lab at Kayrala Public School, the students now have access to updated computers, reliable solar power, and trained teachers who are preparing them for a digital future

This has enhanced their teaching methods and transformed the learning process from abstract theory to hands-on practice.

“

“Our teachers are learning in this process too,” Agustinho notes. “Now they teach from experience with the actual tools, not just memory of how things should work.”

Since most students in Manatuto come from households without electricity or a reliable light source, having access to the ICT lab represents the endless possibilities of a future, whilst focusing on sustainability. The transformation extends beyond individual students. As Kayrala Public School develops genuine technological capacity, it strengthens the entire community’s educational foundation.

“We are confident that the future is full of opportunities,” Agustinho says. “This will strengthen the school’s resources.”



Student achievements displayed at Kayrala Public School, a testament to the efforts made by trained teachers who can guide students toward their potential

This story of transformation displays the power of reliable infrastructure in building a way forward to equip them with the right tools and knowledge to lead their own development. Agustinho and his teachers are now empowered to nurture the next generation of Timor-Leste toward a brighter, more sustainable tomorrow.



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