VETToolbox

Powering Tanzania's future: lessons learnt

VET Toolbox project: Enabling Youth Employment in Solar Energy

January 2022 to December 2023

Co-funded by the European Union

german cooperation

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Context

"Youth is wealth, but only if you prepare it well," says Kabongo Mbuyi, team leader for the Employment and Skills for Development in Africa (E4D) programme in Tanzania.

Between January 2022 and December 2023, the E4D programme trained 198 youths in the installation and maintenance of solar photovoltaic (solar PV) infrastructure through the Enabling Youth Employment in Solar Energy (VET Toolbox) project. The programme surpassed its target of 30% of the trainees being women, with 39.9% (79) of the trainees being women.

"It's one of the best projects that has been implemented in Tanzania," says Dr Jofrey Oleke, Director of Compliance, Monitoring and Evaluation at the National Council for Technical and Vocational Education and Training (NACTVET).

Oleke says NACTVET was most impressed by the extent of the practical training offered through the Enabling Youth Employment in Solar Energy project, which was run by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in partnership with the Tanzania Renewable Energy Association (TAREA). "It is something to emulate and scale up," he says.

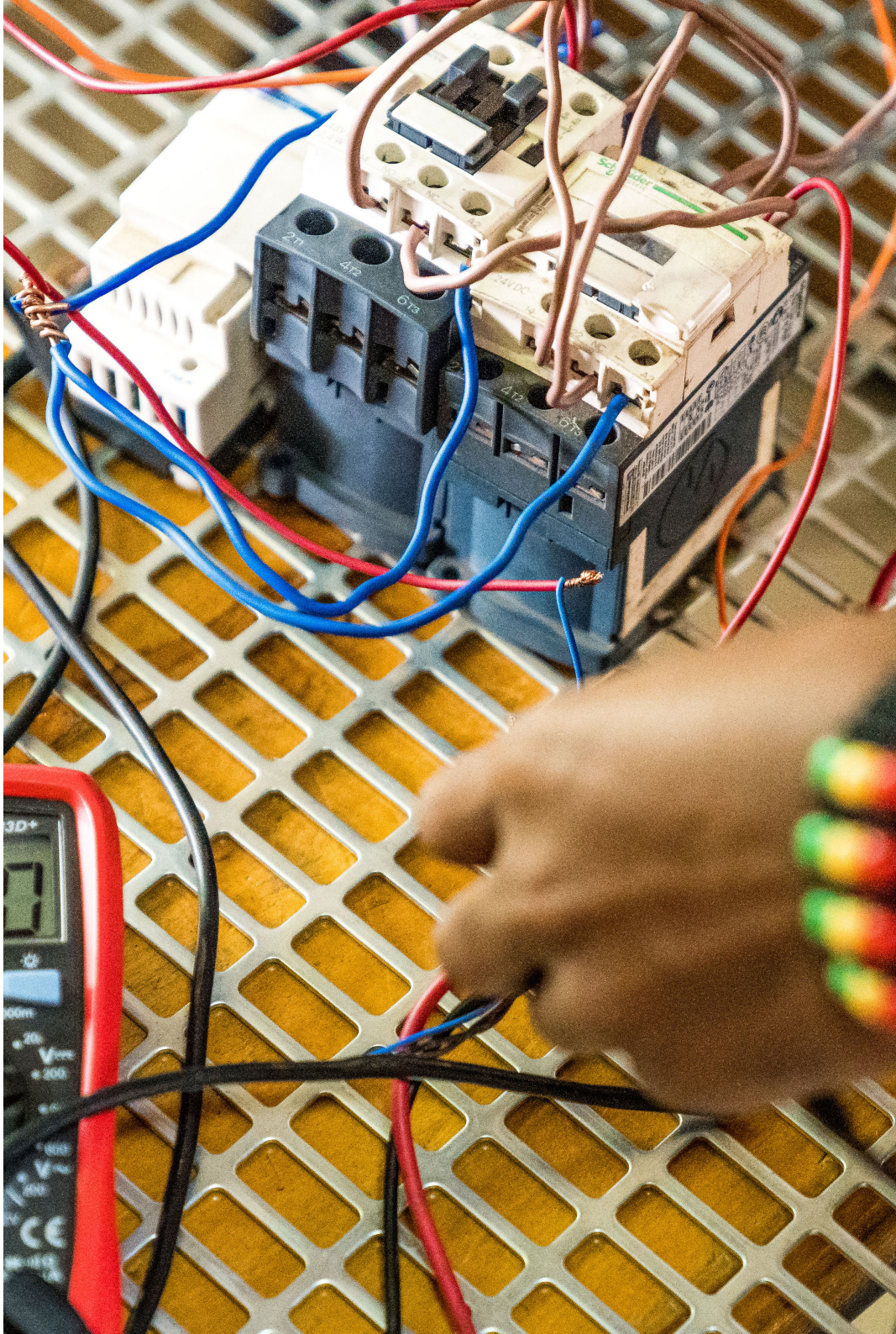
There's certainly a need for this project. While energy access in Tanzania increased by 146.2% between 2008 – when just 13% of the population had access to power – and 2017, when 32% of the population had electricity[1], today large parts of the country are without power, especially people living in the rural areas. Solar PV technology is viewed by many as a solution to this challenge as it can be easily and rapidly deployed and can only benefit this East African country of 65-million citizens[2] by boosting economic growth and human development.

The Enabling Youth Employment in Solar Energy (VET Toolbox) project has already changed lives. Through it 16 vocational education and training (VET) college trainers have been instructed on how to train trainees in solar PV infrastructure installation and maintenance. These people are able to continue this training even if the project does not go into a second phase.

The lives of the 200 trainees selected to receive training from the trainers have also changed. Elizabeth Kasmiry, 27, was unemployed before she received VET Toolbox training. Now she has an internship at solar technology company MySol Tanzania and is better able to support her mother, who recently suffered a stroke, and her baby son, Aron.

"I was street hustling; now I have an occupation," says Kasmiry's fellow student, Moses Bwami. More than that, Bwami says, he is proud to be able to install technology that makes energy from a renewable resource.

"I can be the one to give back to society. Solar energy is from a natural source, and Tanzania needs more electricity so that there can be more industries and more jobs."



Objective

To help Tanzania meet this growing need, the GIZ, TAREA and other implementing partners on the Enabling Youth Employment in Solar Energy (VET Toolbox) project aim to increase the complement of qualified artisans who are able to install and maintain solar PV technology. It is part of the EU's E4D programme. The project ran from January 2022 to December 2023.

The Enabling Youth Employment in Solar Energy project is also aimed at helping to ensure that Tanzania's skills development system is able to deliver training in the solar power sector that is relevant and responsive to skills demands from the sector.

The Enabling Youth Employment in Solar Energy project goals were:

- 200 youths (with at least 30% of them being women) trained, including through practical work placements
- At least 50 of the 200 youths, including women, being able to find new, decent employment
- At least 75 of the 200 youths upskilled to secure their jobs
- Four VET centres with enhanced capacity
- 15 VET college trainers/staff trained through a Training of Trainers (ToT) programme
- One model VET skills development programme developed and implemented through curriculum review
- Dialogue instigated between VET colleges, technical and vocational education and training authorities, including NACTVET, and businesses so that there is better alignment between VET college training and market needs
- It is aiding in creating a talent pool of skilled individuals who will become eco-warriors while safeguarding the environment.

Implementation

To this end, the programme has:

- Upskilled 16 trainers from VET institutions
- Supported Arusha Technical College with equipment
- Completed a VET college curriculum review and adapted the existing curriculum to meet current technological requirements and market needs
- Facilitated relationships between Arusha Technical College and TAREA in order to secure internships for trainees with TAREA members
- Facilitated a growing relationship between TAREA and the NACTVET to support the vocational education and training of youths
- Trained 198 young people, 39.9% (79) of them women (target: 30% women), from the Simiyu, Shinyanga, Geita and Manyara districts and regions
- Issued start-up kits to all graduated trainees, with the first graduation in May 2023 and the second in June 2023

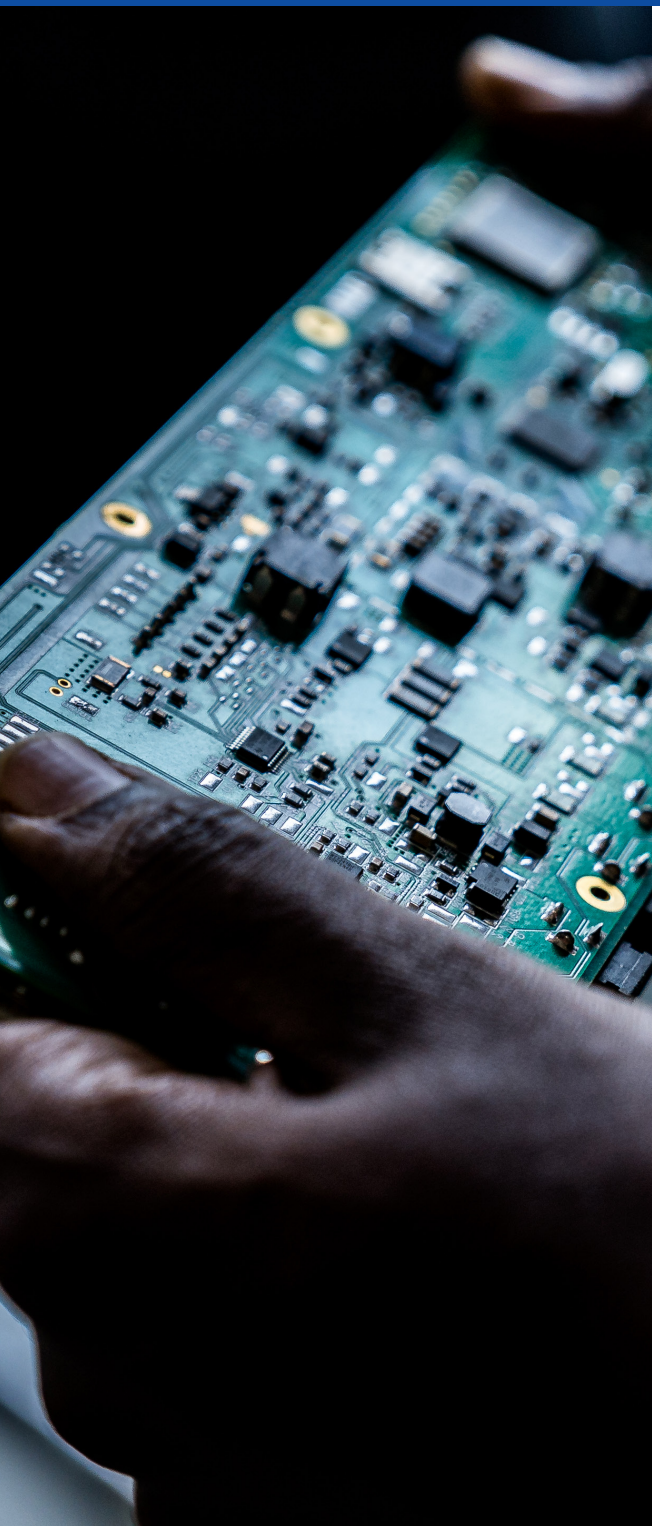
Key successes

The VET Toolbox programme interviewed many of the role players involved in the VET Toolbox project Enabling Youth Employment in Solar Energy, and received a lot of positive feedback. The main successes are:

Recognition of prior learning process instigated

Experience gained during the project led to the realisation that there was a wide variety of competence levels among trainees. This made training difficult for the trainers, and it has been suggested that a formal recognition of prior learning (RPL) process, conducted at the start of any new training initiative, will allow trainees to be streamed according to knowledge level.

This, along with splitting short courses on how to install and maintain solar technology into modules, will make training the artisans/technicians more efficient. This will be beneficial for trainers and for businesses that send employees for short-course training. NACTVET and TAREA have agreed to collaborate on a formal RPL process, which NACTVET has said is “key” to any further training along similar lines.



Public-private dialogue platform established

A relationship between NACTVET, a government organisation, and the business association TAREA was fostered. This did not exist before the project was implemented, leading to VET college training that often did not meet private sector needs. This dialogue platform was established by the project and will lead to more demand-driven VET training.

Training targets met

The target of training 200 young people, at least 30% of them women, was met. In fact, 39.9% of the cohort (79 of 198) were women. Each graduate was given a certificate and a toolbox filled with the tools of their new-found trade, and is now qualified either to find work as an artisan or to employ themselves in Tanzania's growing solar energy market.

Arusha Technical College supported

It was important that the VET college trainers who took part in the ToT initiative at Arusha Technical College were trained on the latest solar PV technology, and the college was supported with up-to-date equipment for this training initiative. The college is the only one in Tanzania that has a solar centre.

Colleges supported with ToT for VET

Sixteen VET college trainers from 13 VET colleges were upskilled through a ToT programme. They are now able to continue teaching youth whether or not the E4D programme is opened for a second phase.

Swahili training manuals published

Swahili is the *lingua franca* in Tanzania, and many young people are not fluent in English, so VET college trainers use the language. Training manuals, which did not exist at all before the project was implemented, are now available in Swahili (and English).

Businesses committed to providing internships

Through the E4D's relationship with TAREA, formalised through a grant agreement, at least 30 Tanzanian companies have committed to providing internships to young people who need in-service training to qualify as artisans able to install and maintain solar PV systems in Tanzania. In December 2022, TAREA had 982 registered members.

This is critical to the training style implemented through the Enabling Youth Employment in Solar Energy project, which saw trainees spend two weeks in class and six weeks in an internship. The practice-heavy nature of the training was almost universally viewed as one of the project's biggest strengths.

Challenges

Large classes

The 200 successful applicants were trained in four cohorts of 50, but the competence levels in each cohort were so varied that it was difficult to train everyone adequately and simultaneously. The large class size in particular meant that some of the trainees did not get as much hands-on, in-classroom practice as they should have.

Trainees with differing competence levels

It was found that among the 200 trainees trained there was a wide variety of existing competence levels that made in-class training difficult for the trainers. Some trainees had already been working in the energy and electricity sector and had experience of the physics required, whereas others had none.

As mentioned in the “Key successes” section above, it has been suggested that a formal RPL process is conducted at the start of any new training initiative to allow trainees to be streamed according to their knowledge/competence level. To facilitate training it has further been suggested that the training programme be split into modules, so that trainees who have some basic knowledge can skip the elementary modules.

Recommendations

- Due to the high demand for the VET Toolbox solar PV training project, which received 600 applications for 200 available places. There is potential for upscaling by the relevant stakeholders
- The training curriculum, which is delivered in modules, should be further split to cater for those trainees whose knowledge/ competence level is lower than that of their fellows. This would be ascertained through a RPL process and would allow tentrant trainees to be streamed into groups according to their knowledge and experience, making the overall training can be more efficient
- Smaller cohorts of trainees will allow all trainees to get an equal chance at receiving more hands-on attention and support in the classroom setting
- More comprehensive instruction should be provided for the VET college trainers under the ToT programme, with more emphasis on practical training. Also, trainer selection needs to be improved
- More VET colleges should be supported with training equipment. Already the GIZ is in discussion with a second VET college (after Arusha Technical College) over how it can be supported with training material and equipment
- Globally, solar PV technology is developing quickly and therefore regular refresher training of trainers would be crucial to ensure that the training given to trainees remains relevant to market needs

Conclusion

The Enabling Youth Employment in Solar Energy (VET Toolbox) project, which ran as a pilot project between January 2022 and December 2023, has been an overall success.

The target of training 198 trainees was met, and the goal of ensuring that 30% of them were women was surpassed – 39.9% (79) of the trainees were women. Similarly, the target of training 15 VET college trainers was met – 16 were trained.

Beyond the numbers, those interviewed for this report were overwhelmingly positive about the training received and eager for a second phase of the programme. As just one example, Dr Oleke said one of the challenges the programme faced was the fact that it was “limited to 200 participants when we have many more Tanzanians who need to get an opportunity like this”.

Project summary

Goal	Result
200 youths trained, including through practical work placements	198 youths trained, including through practical work placements
30% of trainees women	39.9% of trainees women
15 VET trainers trained	16 VET trainers trained
Four VET colleges with enhanced capacity	Trainers at 13 VET colleges were trained through the Training of Trainers programme
One model VET skills development programme developed and implemented through curriculum review	One model VET skills development programme developed and implemented through curriculum review, and translated into Swahili
At least 50 youths find new, decent employment	It is too soon to assess this, but by May 2023, 11 trainees had been formally hired across several companies. A tracer study will be performed
At least 75 youths upskilled to secure their jobs	It is too soon to assess this. A tracer study will be performed in October 2023
Dialogue instigated between VET colleges and business so that there is better alignment between VET college training and market needs	Achieved. A second public-private dialogue will take place in September 2023

Footnotes

1. International Energy Association, 2023 https://www.iea.org/countries/tanzania
2. Worldometer extrapolation from United Nations data from 2020 https://www.worldometers.info/world-population/tanzania-population/

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Thank you.

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