

SHARING SKILLS
CHANGING LIVES



Newsletter No. 120

February 2025

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ABOUT CED

Christian Engineers in Development (CED) is a Christian professional consultancy service dedicated to development work with overseas communities, and through service, to witness to the Christian faith. Operations usually comprise of a tri-partite arrangement between a developing country organisation, a funding agency and CED providing technical assistance. CED responds to various requests for assistance. Improved water supply is the most frequent but by no means the only request. CED promotes self-help with the maximum use of local resources.

CED's services include site visits, feasibility studies, assistance with project proposals, design, contract documents, procurement, tender evaluation, project supervision, direct labour employment, on-the-job training of local staff, project monitoring and evaluation, assistance with fund-raising and the management of project funding.

CED's income comes primarily from grants for projects together with donations from churches, trusts, members and supporters, and membership subscriptions. Most of the expenditure goes to operations; management costs are kept as low as possible. CED is not a funding agency and therefore cannot directly fund major projects but it can, and often does, fund preliminary investigations for potential projects.

The Association is registered as a Company Limited by Guarantee (without shares) and being a non-profit organisation, it is registered as a charity. It is managed by an Executive Committee overseen by a Board of Trustees, all of whom give their services voluntarily. CED Members participate in the work of the Association either voluntarily or if they depend on earnings for their livelihood on negotiated payment for their services.

Membership of CED is open to any person who is professionally qualified, supports the Aims, accepts the Statement of Faith, supports the activities of CED in any way, or serves as an employee or volunteer, both in the UK and overseas. Becoming a Supporter of CED is open to any person or group that supports the Aims, and wishes to be kept informed of CED matters. Anyone wishing to become a Member or Supporter should contact the Secretary.

Newsletter

The newsletter is published twice annually. We would be delighted to provide additional copies for friends, colleagues, church book stands etc. Please contact ian@ced.org.uk and let us know how many you would like. The newsletter can also be downloaded from the CED website.

The editor would be happy to receive contributions for the next newsletter. Please send to ian@ced.org.uk

PrayerPoints

Copies of our monthly prayer bulletin are available by e-mail or post. Please request a copy by email to pray@ced.org.uk or by writing to the Secretary.

Privacy Statement

For administrative and mailing purposes we hold your name and contact details in our records. They will not be given to any other person or organisation. If you prefer not to receive publicity and information literature, then please inform the CED Secretary (admin@ced.org.uk).



**SHARING SKILLS
CHANGING LIVES**

From the Chair of the Exec.

Welcome to the first Newsletter of 2025! I hope you enjoy reading it. Our grateful thanks to Ian Rankin for compiling and editing, and reminding us of the submission deadline!

I've been reading a book entitled "The City is my Monastery", by Richard Carter, an Anglican priest based at St. Martin-in-the-fields in London. Writing about Christian service, he says these words:

"All of us have something to give. The greatest poverty is to believe that you cannot help another, and it is a real truth that those who believe they have the least in fact often have the grace to give the most. We all have the opportunity to be the Good Samaritan."

(Richard Carter, The City is my Monastery, p87, Canterbury Press)

I found those words very encouraging, and they are a real antidote to the often-expressed view that *"the needs of the world are so great, so there's nothing I can do about it"*. When we look at the poverty of the two-thirds world, there is a danger that



we can be overwhelmed by the scale and extent of need. But usually, God is calling us simply to respond to those needs which he brings specifically to our attention. And with the grace which he provides.

All of us have something to give. May God guide you into the service he has prepared for you in 2025 – whether that be right on your doorstep, or through CED, or both.

Jonathan Appleby



CED Open Day and AGM

This year's venue for our AGM was St George's Church Centre in the very attractive town of Stamford.

Chair of the Board Rob Brighthouse welcomed everyone to what promised to be an interesting day with a full agenda, and most importantly an opportunity to catch up in person with other members or meet new members who have joined in the last year.

There followed a time of worship and an address by Alan Michell, a time of reflection on his time serving with CED following his retirement 21 years ago. The challenge Alan gave is how each one of us as members can serve in the best way possible to further the work of CED. Using characters from the Bible such as Abraham, Gideon and Ruth who were called to serve God, he noted that we will often face challenges, but if we are being called, God will provide the resources we require. He went on to say that whatever our engineering discipline skills and abilities there is a role to be played by everyone.

After the opening devotions, Jonathan Appleby CED CEO did a short review of what CED is about and the areas CED aims to model.

- ◇ Holistic Mission – we are spiritual beings.
- ◇ Compassion - remember the people we are trying to help.
- ◇ We are Christians – our faith binds us together.

He went on to explain for the benefit of new and recently joined members about the founding of CED in 1986, the structure of the board who provide oversight and governance, while the executive committee manages the day-to-day work and the requests for CED support. CED always looks for organisations to partner with, whether these be local churches, dioceses, NGO's or hospitals. CED is not about imposing solutions on a community. It is offering support to help them achieve their desired outcomes.

Projects range in value from around £1m to a just over a hundred pounds for a rainwater harvesting tank. Johnathan did a quick review of current projects which members can find out more about by going to the website or in the 'Annual Review 2023/2024'.

The guest speaker this year was Richard Giles, former officer in the British Army and interim CEO of charities including Urban Saints and Zacharias Trust. Both charities had been going through difficult times, and Richard came into these difficult situations offering leadership and support to help them get back on their feet again. Richard said that as a young man he felt called to be a missionary, but God had other ideas, and he ended up joining the army and remained there for 35 years travelling and being stationed in many different areas of the world. Wherever he was he took the opportunity to meet people and share his faith and heart for the Lord.

Richard spoke about having a 'Heart for God' and how the Lord looks at the heart to see the depth of our service. The Lord's 'Awesome Love for us', and how we need to be overflowing with love to reach out to others. Of God's 'Holiness', to be walking in holiness and being holy in all we do. In our World today it is important to trust in the Lord. Often, we can be tempted to strive in own strength when faced with difficult situations. We need a right relationship with God and with others we work with. The fruits of the Spirit need to shine through and where there is discord this hinders the Lord's work. Grudges need to be forgotten, and forgiveness given to enable the Lord's work to be done. Finally, we need to protect ourselves with the armour of God to prevent Satan from finding ways to stop us. The full talk is available on YouTube via the following link <https://youtu.be/y2cSEFR2V7E> Following lunch, there were a couple of workshops.



Workshop 1, led by Roger Holland, was about member engagement. Members were asked to consider if they were happy with their involvement. The meeting split into groups to consider the question and give feedback. Various points were raised, and these will be given further consideration by the executive committee.

Workshop 2 was led by Rob Foulkes. Rob had offered to come along to talk about making videos. This is an area the executive committee were keen to develop to help promote the work undertaken by CED. Rob explained about a 3-stage plan, and using software to help when editing and adding an audio commentary. The use of an AI generated narrator certainly gave the videos a professional feel. Rob filmed most of the day and the finished result can be found on YouTube <https://youtu.be/pgGOQZBH1zc>

Next up was the AGM and the official business including election of directors and acceptance of the annual accounts. Rob thanked Ian Rankin for all his work in writing the annual report. Rob presented Alan Michell with a card from all the members thanking him for his service on the board.

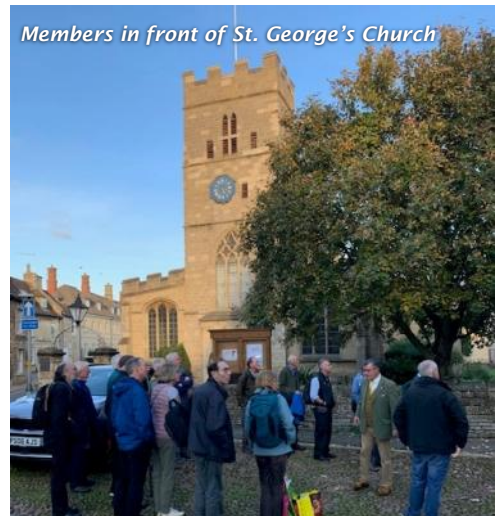
An open forum followed the closing of the AGM. Alan Michell asked for prayer for Bishop Charles Semwaga of Faith Centered Ministries in Rwanda where new government directives require churches to have sound proofing, car parking etc. without which the building cannot

be used as a place of worship. This has had a major impact particularly in rural areas where most churches do not comply and are unable to use their buildings. When discussion drew to a halt we spent some time in prayer.

To finish the day, those who could stay were treated to a fun and entertaining tour of Stamford with local historian and guide Bill Cunningham. This was followed by a meal at a local Italian restaurant where we discussed the topics of the day and enjoyed more time in fellowship.

Thank you to all those responsible for arranging a very enjoyable and informative day, to Ian and St Georges Church for hosting us at such a great venue, and to the external speakers, Richard and Rob.

Colin Mapperley



Poster presented to WEDC Conference, Loughboro

Climate and institutional water resilience for 'the left behind', Dioceses (ACT/AICT) of Biharamulo, Kagera, Lweru and Geita

Rainwater harvesting is a well-accepted 'solution to water scarcity and climate extremes due to climate change' (Heijnen, H, IRHA, International Maji Scientific Conference, Dar es Salaam, 2024). Rainwater harvesting is particularly beneficial for the poorest, the most likely to be 'left behind' in the trend towards rural piped water supply.

Capacity-building

In mid-2022 a programme was started to train tank builders and to build tanks for marginalised people in western Tanzania **through local church partnerships**. So far 8 workshops have been held, training some 130 people who have now built more than 120 tanks of various sizes.

Institutional sustainability

Aiming to ensure sustainability, in on-going water delivery as well as in the safe use of RWH, the international sponsor, Christian Engineers in Development, is embedding the process within the most effective local community organisation, in this context, the local church. The local church diocese takes responsibility for determining the most-needy households, supporting local trained masons to deliver the tanks in the right way, motivating local support, sharing any problems/ improvement ideas, ensuring the tank is used by the most vulnerable, managing water testing, as appropriate, and assisting with any needed repairs.

Franchising

This can be seen as an adapted 'Franchisee' (Diocese) model and 'Franchisor' (CED) model. But with a reverse funds flow, that is a direct 'global church to national church' funding stream through 'Tap-Twinning'. Responsible for overall 'quality assurance', CED continues to help through ongoing development of construction techniques, funding water quality testing and post construction evaluation, as well as marketing, both nationally to extend the programme to adjoining church districts & internationally to neighbouring countries.



Quality Assurance User Survey

A user survey was undertaken in May 2024, based on **Packages** (2024), within the context of WHO 'Minimum' (2024). A sample of n=24 of the 51 domestic water tanks that people depend upon the 1,000 litre water tank (a tank that is often empty at the time of the survey which is common during the three months dry season. 42% use the first flush of water through a 'stones and charcoal filter' at the entry to the tank. 2 of these on tanks that 'require some



43rd WEDC International Conference
WATER AND CLIMATE RESILIENCE
9 - 13 SEPTEMBER 2024



Authors: Thomas Shavu



Tanzania



In the water quality testing (through a Government Laboratory), 71% were found to have zero E.coli, 21% having an average of 4.2 E.coli and one tank on 14 mg/l. Of the six houses with measurable levels of E.coli, four report having the functioning entry filters. Seven other households report zero E.coli and non-functioning filters.

The tanks were reported to be used 4 times per day, an average of 4.6 buckets (10l) being taken per day, with 92% of respondents reporting no further water treatment. Every household has another water source, three have another source at home.

Most say the water tastes 'a little bitter' in the dry season. In the context of climate resilience, all respondents thought their climate has become a 'little wetter'.

The tanks are reported to supply water, on average, for the first four and a half weeks of the dry season. After that, an average of three times a day visits to the original source are undertaken, an average of 3.7 hours per day – very similar to the time reported as taken in collecting water before the tanks were constructed.

One recipient told the interviewer "Before we had a tank my days were consumed fetching water. If I decided to go to get water, that was my day - nothing else got done. The tank changed our lives. I can now focus on other things like taking care of my hearing and sight impaired husband and disabled daughter. The tank didn't just provide convenience, it brought a profound sense of security and freedom". (source: householder survey, May 2024).

Conclusion

Enabling a self-managed community group (religious in this case, overseen by the Diocesan Bishop) to train local masons, rather than an INGO inspired limited lifespan 'community watsan committee', or an overstretched distant local government, is providing a reliable source of water (for most of the year) for those who need it most. When combined with a 'hands-off' INGO delivering an ongoing 'tap-twinning' funding stream, and some level of quality assurance, has an important part to play in 'ensuring no one is left behind' in the face of accelerating climate change.

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was about one month into the two to
diverter, 63% have a functioning
k. 29% had a dirty or 'in poor
ome repairs.

Marietha Thomas, Akila Marton and CED



Kuluva Hospital Hydropower Refurbishment

October 2024 was an important milestone for Kuluva Hospital. The long-awaited refit of the hydropower turbine finally happened. The crossflow turbine and its associated control panel and hydraulic power pack had been ordered from German manufacturer Ossberger back in February 2023, and had been shipped from Germany in May 2024. Shipping took a little longer than expected, and of course the equipment then had to be moved from the port at Mombasa up to Kuluva Hospital, which took some organising. So we finally got the equipment to site in late August, and had a three-week shutdown planned for October.

Darran Waters travelled to Kuluva to oversee the first week of the refit work, and then Jonathan Appleby was able to join him, travelling out immediately after the CED Open Day on 5th October. The three weeks were pretty action-packed, with a lot of refurbishment work going on simultaneously on the intake, pipeline and power house. Darran and Jonathan gave a Tech Talk on 7th

January, summarising the refurbishment work, including many photographs from site. A video of that Tech Talk is available to view on the website or here: <https://youtu.be/j1gnAs-bJRo>

In summary, the refurbishment was successful, with the new turbine, control panel and hydraulic power pack performing excellently. Apart from some minor outstanding works, the team successfully overcame several hurdles along the way and the hospital is again supplied by hydropower. The system is now much more reliable than it has been for some years. Our thanks to all the CED members who have helped with the project over the past five years, including Jono Cox, Edward Rhodes, Philip Tibenderana, Paul Darrall, Jonny Burns, Trevor Burns, and Darran Waters. And not forgetting the team at Kuluva Hospital Mini Power Generation Company, especially Dr Luke Vos and James Jogo.

Jonathan Appleby



New turbine up and running at Kuluva Hospital

Thomas making his presentation.



4th International Maji Scientific conference 2025

Being late putting the newsletter together means I can report on this week's conference in Dar Es Salaam at which CED was represented by Thomas Shavu, Akila Marton and myself. CED previously presented a poster at the WEDC Conference in UK last year (see poster, pp 6-7) as we are keen to build links with others in the water community.

We listened to around thirty 10-15 minute talks discussing topics as diverse as the "Impact of climate change on fecal sludge management in the Sinza river catchment" and "Impacts of sanitation malpractices on microplastics pollution in Tanzania's water bodies" to our own talk "Climate and institutional water resilience for the 'left behind'".

Tanzania has a growing cohort of engineers able to tackle problems in both urban and rural areas. The mood was very much that we want to move projects forward using our own resources rather than always being held up waiting for foreign donors. There are many private sector opportunities to be explored.

The conference was opened by Tanzania's Vice President, H.E. Dr. Philip Isidor Mpango and the keynote speaker was Dr. Rafik Hirji who

emphasized the importance of considering WASH and climate change together rather than as separate issues, and in working together with Tanzania's neighbours to collaborate and to share data. Tanzania is unique in being surrounded by lakes but only small areas of these are monitored by Tanzania itself. Might the Nile Basin Initiative be an opportunity to create a regional "Centre of Excellence"?

Several people discussed issues around rainwater harvesting. UNICEF reported on their project in Iringa region (where CED worked in Kilolo and Pawaga), where they have reduced open defecation to less than 1%. Their minimum requirement for domestic latrines is that people use either a ceramic toilet or a SaTo plate as described by Simon Ewing in NL 112.

There was a presentation on pre-payment water meters. These use mobile technology and there are big efficiency savings in data collection. There is a scheme in Iringa.

Thomas Shavu ably presented the CED offering and when asked to explain how we find the "left behind" said "The church has a strong system in place, from the diocesan level to the local level, with pastors, evangelists, and church leaders helping to identify marginalized people. We also collaborate with local government leaders to ensure no one is overlooked."

So, an interesting experience though the sessions were long.



Ready to go... Thomas with Akila before his presentation.

Membership

At the recent AGM we held an open discussion around CED membership and levels of involvement within the organisation. On the back of this discussion the Exec Team are aiming to get a wider range of the CED membership involved in various aspects of project work. Over the next few months we will be reaching out to each of our members to gauge how members feel about their current level of involvement and seeking to try and fill gaps where they might appear, whilst also keeping in context that there are a limited number of projects and therefore project work.

Since the previous publication we have received two new members:

- Sam Kayaga currently works as an Associate Professor in Sustainable Systems for Water Security at Loughborough University. Sam is well published academically and has vast experience in engineering in Uganda.
- Aaron Cross is a Chemical Engineer working as a Principal Process Engineer at Otto Simon Ltd – Aaron attended the AGM this year so some of you may have met him there.

Can I extend a warm welcome to our two new members on behalf of everyone at CED!

Jonny Burns

Finance

Please can I remind members :-

(a) that CED are requesting all members to sign new gift aid forms to ensure records are fully up to date and tax correctly and fully reclaimed. Many were completed by AGM attendees and a few others have been returned since an e-mail request was sent out by Jonny Burns, CED Membership Secretary, on 1st October 2024. If you are able to complete and return a form it would be much appreciated. If you would like another form, it can be downloaded from the CED website at

<https://ced.org.uk/wp-content/uploads/CED-Gift-Aid-Form-April-2024.pdf> or alternatively please contact treasurer@ced.org.uk.

(b) if you have not as yet paid your subscription of £40 for the year to 31st March 2025 please can you do so at your earliest convenience.

Thank you to all CED Members and Supporters for your continued financial and prayerful support. CED simply could not function without you.

David Beak



Lake in Kagera Region, Tanzania



Local taxi, Kagera. My black suitcase is to the left.

Travelling in Tanzania

Normally, when I travel to Mwanza, I fly. In October, however, I decided to try the bus. Not just any bus, though. I booked on the VVIP bus with huge seats, only 3 per row, for the overnight trip. We left at 1:40pm and arrived next morning at 8:15. It was a comfortable trip, with snacks served on board and stops for meals. They even served coffee, which was pretty challenging! I arrived in Mwanza fairly refreshed and was collected by Salim in his taxi to be taken to the next bus station where I boarded a bus to Musoma. So began my trip around Lake Victoria to see cement tank building. The 3.5 hour bus trip back to Mwanza was easy and a motorcycle taxi took me to a reasonable hotel.

Next morning I took a Bolt (similar to Uber) to the bus station; leaving for Geita was ok but the ferry across the Gulf of Mwanza was delayed for 90 minutes due to heavy rain. After a couple of days in Geita it was on to Ngara in Kagera Region. This was more challenging as the last part of the journey was by shared taxi... 8 adults and 2 children in the small car pictured above! After Geita I visited Biharamulo (being careful to avoid shared taxis) and Lweru and was glad to fly home to Dar Es Salaam from Bukoba. Journeys in Tanzania are always eventful!

Ian Rankin



Nezia, trying out the VVIP bus seats

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Christian Engineers in Development.

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Front cover: New pumpkin tank at Igabiro church, Lweru diocese.

This picture: emptying sawdust from a 1000 litre water tank.