

Newsletter No. 110

November 2019

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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 a tri-partite arrangement between a developing country organisation, a funding agency and CED providing technical assistance. CED responds to requests for assistance, improved water supply being the most frequent request but by no means the only one. 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 a Board of Directors/Trustees, elected from the membership, giving their services voluntarily. The Board appoints a Secretary and a Treasurer. 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. Membership requires an act of commitment and usually an annual subscription. 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. An application to be a Member should be supported by an existing Member or Pastor.

Newsletter

The Newsletter is published twice annually. We'd 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'd 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.



SHARING SKILLS
CHANGING LIVES



We established our current strategic plan in 2017. Our aim was “to increase our effectiveness in changing lives” by the end of 2020. We had four key focus areas:

- *Enabling more members*
- *Developing partnerships (in UK and overseas)*
- *Applying technologies that are appropriate and self-replicating*
- *Improving the selection and execution of projects.*

Letter from the Chair

Welcome to the latest edition of CED’s newsletter. As I write, the rain drops are falling steadily on the skylights above me. The daylight is fading outside, yet it is only mid-afternoon. The summer months seem far off now. Back in August I had the great privilege of visiting Uganda once more. You can read more about this later. As the seasons change and winter approaches, our daily routines and our response to what is going on around us changes. It is no different with CED. Our Treasurer Bill Harper has the benefit of many years’ experience as a CED director. Bill is able to observe the manner in which the current board sets out to do things that have been tried before (sometimes unsuccessfully!). Bill has also discerned a change over the years in the way CED operates: from a few very large projects to a larger number of small projects.

I, along with other members of the board, have realised that we were over-ambitious when we developed this strategic plan. Overall progress in the key focus areas has been frustratingly slow. As you have probably heard me say previously, we are an organisation of volunteers. We have no full-time workers, no salaried employees. We rely on people doing things in their spare time – and upon the amazing grace of God. So CED’s directors have decided that we need to rework our strategy and are planning to set aside time in February to do this. Can I ask you please to support us in two ways as we set about this task? Firstly, can you please get involved in the planning process, by telling us what God is saying to you about CED? Secondly, can you please pray for us throughout February and particularly 5th to 7th when we hope to be together, as we discern what God might be saying to us about His plans for CED.

Mike Beresford



Children fetch water from Lake Victoria near Bana Pads site.

Open Day, York, 29 June 2019



Worship



Lunch



Workshop



Workshop



Restaurant

It was great to be back in York for another CED Open Day on 29th June. Especially good to meet new supporters and younger members attending. Thanks to our hosts for ensuring everything ran smoothly and especially to Bryony and Lucy for their hard work in the kitchen. Around 24 members were joined by supporters for a day of discussion, learning and analysis.

After coffee on arrival we were led in worship by Jonathan Appleby after which Mike Beresford reminded us of CED's work, purpose and vision. Looking at our "2020 vision" Mike was a little downbeat on our achievements; my own take is that we're definitely "Sharing Skills / Changing Lives" and expressing God's love through engineering, as was demonstrated in the next item, a review of our 2018/19 projects, details of which can be found in our Annual Review that was distributed at the meeting (download from www.ced.org.uk/news).

Our keynote speaker was David Fulford who presented a technical analysis looking at "the application of small-scale biogas in the developing world". David is a leading expert in biogas and we appreciated his informed and informative talk.

After an enjoyable lunch we split off into workshops with a focus on handpumps, rainwater jar construction and hydropower. After two sessions of these it was time for more tea and coffee before the AGM.

The AGM held mid-afternoon received the Annual Report and Accounts, noting an increase in charitable donations. CED currently has a wider variety of smaller projects than in the past, resulting in more time being spent in the field and involving more members. Legacy funds enable us to start on projects which are partially funded from external sources and to totally fund smaller schemes. Three directors

Sunny evening at Holgate windmill.



After 1 hour, treated water is noticeably more clear than untreated.



stepped down and were re-elected and Rob Wakeling was elected onto the Board.

After the AGM we held an open forum where members and supporters were invited to raise issues. Mike encouraged us to make use of CED publicity and especially to pray for CED using the monthly PrayerPoints sent by email. (contact pray@ced.org.uk for the link). We then prayed, tidied up and set off for Holgate Windmill.

The windmill was built in 1770 and has recently been restored. It is full of cogs and wheels and with an informative guide we all enjoyed the visit. We then retired for a tasty meal at a Sicilian restaurant before making our way to our various homes or staying over in York.

I'm looking forward to next year already! We're hoping to meet on 13 June 2020, possibly in Scotland. Save the date!

Ian Rankin

and gutters or from the implements used to draw it. These risks can be managed. When a ferrocement tank is kept dark and sealed against bugs and critters the water actually becomes cleaner over time as any bacteria are starved. There is therefore little need for expensive water purification filters that are not within the reach of householders.

Nevertheless, for peace of mind we recommend boiling the water before giving it to young children. For adults there are no-cost methods of improving water quality. One is the SODIS method where the water is put into a clear plastic bottle and treated with ultraviolet rays from the sun for a day. If a tank has not been kept dark, algae can form and one way to remove these is with moringa seeds. Moringa, sometimes called the miracle tree for its many health benefits (antifungal, antiviral, antidepressant, anti-inflammatory), also removes over 90% of the impurities in the water. Water treated with moringa seeds then by SODIS is going to be reasonably safe (neither will kill every virus) and a big step forward from the water that most people drink at present; even boiled water is going to pick up germs if the cup is not clean.

There was a lot of interest in moringa from our Congolese partners; they brought seeds with them so that we could hold a workshop in August when I was visiting Rwanda. They propose to introduce the method in refugee camps in DRC.

Ian Rankin

Drinking rainwater

An advantage of rainwater for drinking is that it's pretty clean when it comes out of the sky. It can only become contaminated from the roof

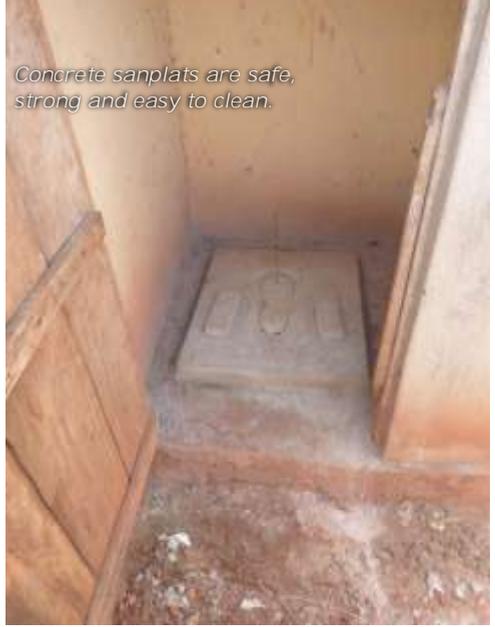


Joyce with moringa pod, Kibaha Tz.

Rwentamu, Uganda

It was wonderful to be able to spend a week visiting Uganda in August. I was met at Entebbe airport by our part-time engineer Philip Tibenderana – Philip and I were fellow students at Cranfield University back in 2008, so it is always good to spend time together. Our first visit was to the recently completed project at Rwentamu. This was very unusual location. We visited the village more than three times as we wrestled with the topography of the site. The catchment area of the valley was huge, nearly 20km². We were very concerned about the risk of flood flows damaging the valley tank that we were planning to construct. Yet there were no signs of stream flow in the flat grassy valley bottom, let alone flood flows. In the end, assured by the local community, we agreed to construct the project. On receiving funds from Wilmslow Wells, Life Trust and Guernsey Overseas Aid we completed the project successfully. The last stage involved supporting a sanitary platform marketing programme. This involved constructing 100 sanitary platforms for the local community to use to construct their own latrines. One thing that can be overlooked is that improved community health comes not just through clean water, but also through sanitation and hygiene education. We give thanks to God for completion of another project that will change lives. But the final words should come from the local ministers of the Church of Uganda. The Diocesan Secretary of the Diocese of North Ankole, the Reverend Canon Henry Timugaya, said: *“Rwentamu is a very good project. We are very appreciative. CED has impacted the community through this development. Constructing valley dams is very key because of our seasons. This is a dry corridor. Lack of water is our biggest challenge;*

Concrete sanplats are safe, strong and easy to clean.



“If it is dry there is no milk and no crop production. The outcry in our community was water, water, water”.

The Church of Uganda minister from Rwentamu, Reverend Robert Mugarura also described the benefits of the project: *“we want to thank CED for supporting us and coming to visit us. This project has been very beneficial to the community within the Rwentamu parish. It has provided water for domestic use and for livestock. It is not only for this parish but also for the wider community. Within this area there is one secondary school and four primary schools and about 1,000 households”.*

Mike Beresford



Church team, Rwentamu.

Kikatsi, Uganda

Kikatsi was another dry area that had been prioritised by the Diocese of North Ankole in terms of lack of water. The extended community includes a health centre, a sub county headquarters, two schools and about 1,000 villagers. We met with Reverend Benon Baraire who showed us round the proposed valley tank location. The optimum place for the valley tank was quickly confirmed, although it lay in land that was not owned by the local church. The catchment area was visually surveyed and assessed as being about 2km² which is generally acceptable for a valley tank project (the range is normally approximately 1.5 to 15km²). As a final check we did a tour of the vicinity – during this time we found a large water storage reservoir on the opposite side of the village. This reservoir had once included a handpump for drinking water and a wind-pump for an agricultural project. All of these were now defunct. This



Site for valley tank.

changed the complexion of the project. It now seems that there is some water supply available to the village, although it is currently untreated. As a result, we are currently assessing the possibility of installing a valley tank on the north side of the village, and refurbishing the shallow well and handpump connected to the reservoir on the south side of the village. This would ensure that a water supply would be within about 0.5km of everyone within the village.

Mike Beresford

Kayenje Primary School, Smile Charity Uganda and Bana Pads

After our visits to Rwentamu and Kikatsi, we moved back to Kampala to follow up on some contacts we had made previously. Our first stop was at Kayenje Primary School. This had been visited by CED member Phil Outram back in 2013. The first surprise came as we approached Kayenje along dirt roads. We arrived at a roundabout with a tarmac road! Then when we arrived at the school it was a

hive of construction activity. It seemed as if the headmaster Wilson Wabalanda was very successful at getting outside funding to support his school. What had once been a down-at-heel facility when Phil visited had been transformed into a pretty well-equipped primary school (by Ugandan standards), with more new classrooms on the way. Praise God!

Next on our agenda was a visit to see Alex Gift Ngabonziza of Smile Charity Uganda. His organisation has a range of evangelistic and discipleship ministries in the outskirts of Kampala. We visited their rented site, but they took us to the new site that they had purchased nearby which they were planning to



New latrines at Kayenje Primary School.

turn into an events garden and office. The aim was to rent out the events garden for weddings and other celebrations to generate funds to run the ministry. Alex also took us to a campsite some miles to the East of Kampala, near the shore of Lake Victoria, where he planned to establish a farming ministry and evangelistic camp site.

Our final visit was to the factory and health centre run by an organisation called Bana Pads. The concept of Bana Pads was to use waste banana fibre to manufacture sanitary pads for women. As part of this initiative women could establish their own business selling packs of Bana Pads. It seemed a great concept, generating income for local women at every level. Our host Richard Bbaale excitedly showed us round the production facility and then the nearby health centre and maternity unit. The latter had no clean water supply.

Having viewed the three potential partners and possible projects, the directors are currently discerning how CED might be able to support them.

Mike Beresford



LAMB Hospital, Bangladesh

CED has again been partnering with Cranfield University to support two MSc students to carry out research projects at LAMB Hospital in Bangladesh. These students (Johanna Le Pors and Cristina Martinez Lopez) completed their thesis research projects this summer. Johanna studied the options for waste stabilisation ponds for treating "grey" water (faecally contaminated waste water). These

are susceptible to flood events, but Johanna concluded that, given sufficient bund wall protection and land availability, then this simple technology can be used effectively. Cristina Martinez Lopez developed concept designs and optimum process conditions for an anaerobic digester that is fed with both food waste and faecal sludge from the compound's septic tanks.

In September CED member Paul Darrall visited LAMB to look at their electrical network. His report makes sobering reading, noting rusty electricity poles, undersized wiring and a lack of earth connections. Nevertheless he had a very enjoyable visit and comments on their most warm and welcoming staff and “the best hospital guest house... I have visited”.

Mike Beresford with additions.



Sampling a septic tank outfall.

What's on your Shelves?

It's a fair bet that every CED member has a stock of textbooks, papers and other materials on shelves or in storage. Some younger people seem to exist almost entirely on what can be accessed by smartphone or computer: the older ones among us recall how much book and journals used to cost and how valuable they were as references. My son is definitely a smartphone addict but still keeps his medical books to hand and is even writing new ones. I am rather the opposite, valuing the books I have but glad that I can use the net for searches and the computer to type faster (and more tidily) than I can write. Sometimes I want to supplement online work, do background reading or check something I think I remember. Then the books come in useful.

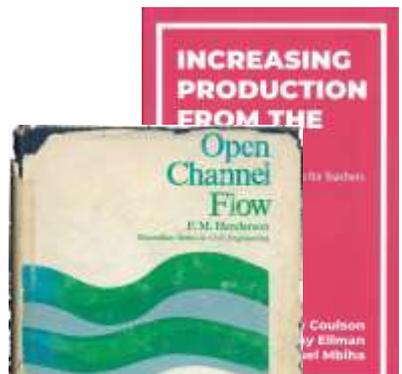
Behind these thoughts is a proposal via the London Group to place in a “Members’ Interactive Library” details of useful publications that members hold and would be prepared to loan within CED. Publications do not have to be bang up-to-date: there are many engineering classics worthy of space.

Alan Chadborn, Chris Seager and I have been asked to work on the project so this is an advance appeal to you for contributions. No

need to send anything yet because we are still working on the format and access arrangements. We expect to end up with something like a series of spreadsheets, one for each of no more than 10 distinct classifications, such as Buildings and Structures, Power Plant, etc. Columns in each table would provide space for each entry's details, remarks on the content, its owner and the current borrower.

Chris is thinking about putting the “catalogue” of spreadsheets on a platform like Dropbox with members given read-only or higher access as necessary; more about this in the next Newsletter. Meanwhile, please think about whether you are comfortable with making an occasional loan, what you might want to list – and perhaps a different name for the “library”!

Dick Waller



Climate Emergency

How should CED respond? As Christians we have various possible responses and as engineers we may have more technical ideas. We have all become more aware of our carbon footprint recently. We must pray urgently.

Should we fly less? Should we travel less? Our flights are probably some of the most important flights taken by anyone. They are much more important than flying on holiday although they can sometimes be combined with a holiday.

Should we eat less meat and dairy? It may not be appropriate to comment when our African hosts provide meat for us on an overseas visit unless we know them well enough.

I have read two books after inspiration from my son Sam who is part of Extinction Rebellion.

"There is no Planet B" by Mike Berners-Lee is thoroughly readable and covers almost every aspect of the climate emergency from food and travel to changing the way we think and political action. The book is full of practical suggestions such as those at the top of this article. Those are directed towards individuals and are possible for all of us. There are also suggested political changes. There must be a price for carbon which makes it

prohibitively expensive to burn fossil fuels whether for travel or for heating. Life will not end if we make this change. Life on earth will probably become much more difficult in the next few generations if we are unable to change. If we think that lives in the most vulnerable parts of Africa and Asia are equal in value to ours then we need to act soon. It takes a long time to put the brakes on our carbon emissions so the sooner we stop the better.

The second book is **"This is not a drill"** published by Extinction Rebellion and written by about 30 authors including well known figures like Archbishop Rowan Williams and Caroline Lucas MP. Other authors are not well known as they include people involved in the Rebellion in various ways and people in vulnerable parts of the world who are already suffering the effects of our inaction.

"Planetwise" by David Bookless is a third book which is older and addresses the Christian theological background to creation and the climate change issues.

There is also the **Green Christian** organisation which can easily be found online. I joined recently and attended a very encouraging event near Manchester Airport in a former URC church now called the Dandelion



Community. I receive e-mails from CElink (Christian Ecology Link) which was the name before it became Green Christian.

I am not sure where or how God is calling us next in response to these serious and important issues. Ignoring them does not seem to be an option. As Greta Thurnberg said at the UN: "How dare we?"

Rob Wakeling



Film review

CED members might enjoy watching the film called "The Boy Who Harnessed the Wind". The film was released earlier this year and is a drama based on the memoir "The Boy Who Harnessed the Wind" by William Kamkwamba and Bryan Mealer. It definitely has a 'feel-good' factor as we see triumph in the face of adversity and the virtue of patience and perseverance. At the same time, the film raises important issues related to development in rural, African areas such as in Malawi. The cast comprises a mixture of African and African-origin actors; they play their parts in a generally convincing way. This film should bring a smile and certainly will generate debate. Perhaps one for a church group.

Jonathan Cox



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Christian Engineers in Development.

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Front cover: latrine platform production at Rwentamu, Uganda.

This picture: visit to Holgate Windmill during the Open Day.

