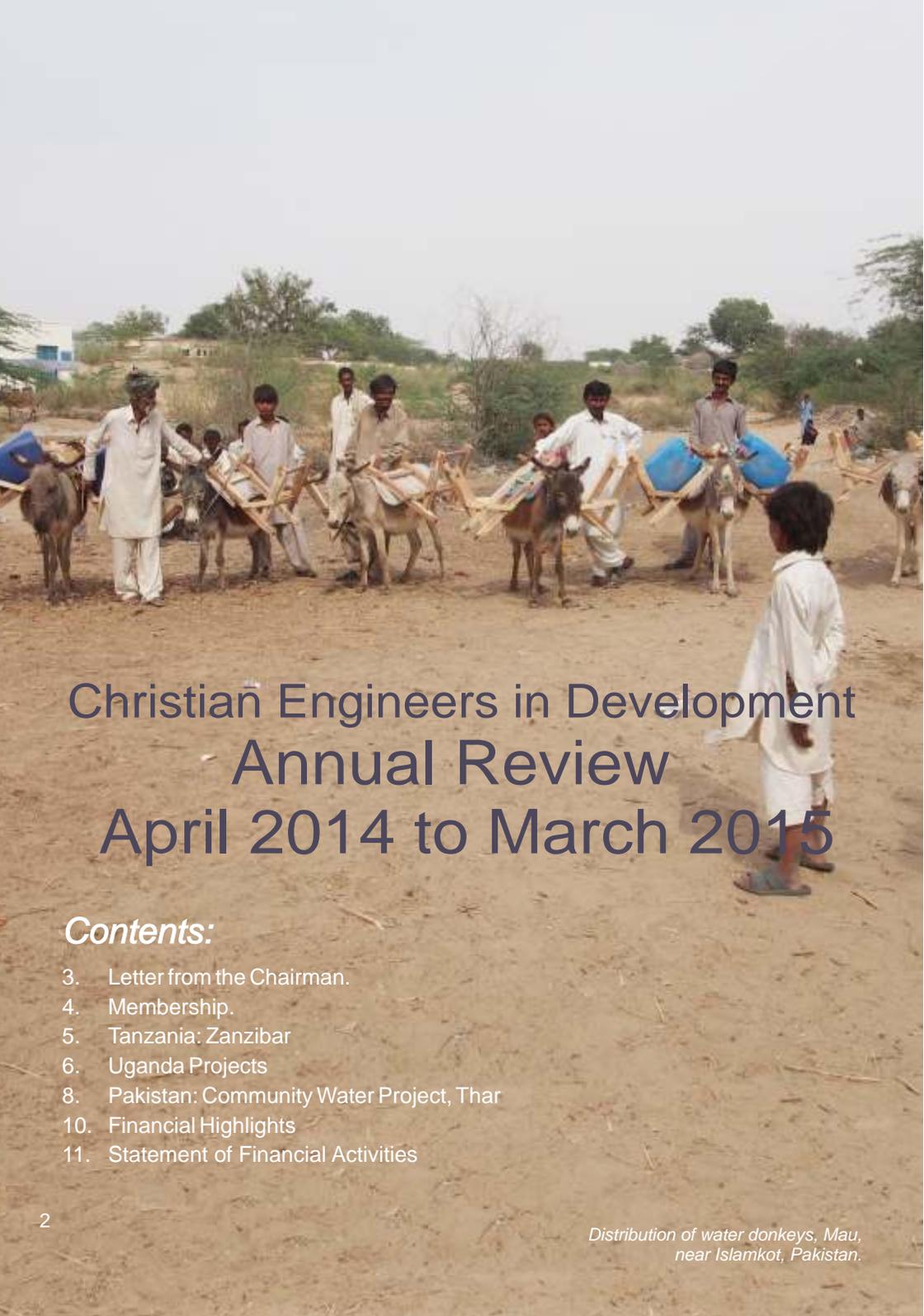




*Discussing the Water Security Plan in a village in Thar.*

# Christian Engineers in Development Annual Review 2014 / 2015



# Christian Engineers in Development Annual Review April 2014 to March 2015

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# Letter from the Chairman

As I pass on chairmanship to Mike Beresford after five years I am grateful to God for the privilege of being able to serve God through CED.

Back in 2010 CED was struggling with the financial stresses of our biggest ever project (Pawaga piped water supply) falling foul of exchange rates. After an initial contraction CED now has a few more members (72 in 2010 cf 74 now), a recovering number of projects (8 active in 2010, 6 now), a smaller project spend (Pawaga cost nearly £200k in 2010, c.f. Total CED spend of £121k this year). We reckon we're a healthy size for the work we do; we fit a niche for professionals willing to "give back" a little of their expertise as a service to the Lord. Being small allows us to be flexible to the needs of partners. Through generous supporters we're able to initiate small projects such as Rushere, jointly funded with sympathetic partners, or Majahida from our own resources. We're at a size where we can operate without an expensive administration. There is an attraction in being able to see the wider picture as we consider issues that must accommodate the Christian, the engineering and the development aspects of our calling. Sometimes members long for more "engineering"... but even engineering is less about the design and more about logistics, paperwork and management. In Pakistan getting water from A to B involved setting up businesses with donkeys rather than digging holes and laying pipes (CED engineers know about donkeys as well as about pipe sizes!). Delivering a successful outcome for people in Pawaga included

organising communities, promoting the status of women, health education, etc. Being small reduces the risk of being blinded by specialisation.

Early in 2014 we recognised a need for more directors and at the AGM were delighted to be able to appoint Jonathan Appleby, Angus Armstrong and Alan Michell to the team. We're disappointed to be losing Rob Brighthouse this year but pleased that other directors are willing to stand for re-election.

Over the past year the Board has grappled with issues such as whether we can or should grow; whether the membership now feels sufficiently engaged; how we can keep up with the general NGO sector. This last included, among other things, registering with the International Aid Transparency Initiative. Various CED policies, from equal opportunities to conflicts of interest to security, are being initiated or updated and this has led to an ongoing review of our Policies and Procedures manual. We are continually challenged about how we can relate to overseas partners in a way that keeps us "reactive" rather than "proactive", supporting their vision instead of trying to impose something from outside.



*Typical roof structure, house near Islamabad, Pakistan*

It has been encouraging to see members gathering regionally or meeting with others to raise the profile of CED. Some members contribute significant amounts of time and energy to work that though not glamorous is vital to the organisation. I'd like to thank both Board and members for their commitment to CED and also for their personal encouragement over the past five years. On behalf of the Board I'd like to thank our supporters for their provision of interest, finance and prayer for the work. There are not many charities where the treasurer complains about financial surpluses! Happily CED has multiple opportunities to use these well, usually overseas.

Having recognised the value of staying

small, how should we respond to larger projects? 20,000 people in the remaining 6 of 14 Pawaga villages still struggle without a proper water supply. Will CED manage to find the £1.5 million needed to complete? Would that be a good move away from our comfort zone or a step into the abys of the demanding time, financial and relational challenges that a large project brings?

I wish Mike well as he takes the Chair and look forward to seeing where CED goes in the next few years... with a Board that works together I'm not imagining a dramatic change, though perhaps the Lord has other ideas!

Yours in His service

*Ian H. Rankin.*

## Membership

As of 1 April 2105 there were 74 members. Two people, Michael Eborn and Jack Norwood, have joined during the year and we look forward to getting to know them.

We encourage members to be as active as possible but those who are able to be part of a regional cell tend to be the ones who feel, and are able to be the most engaged. There are now three cells operating in Scotland (meeting in various locations and sometimes via Skype), Northern England (Yorkshire) and Southern England (London). This

obviously leaves members living elsewhere at a disadvantage but if you are one of these, and would be interested in setting up a cell in your area, please get in touch. Each cell operates in a way that best suits it's members; there is no set pattern, but cells generally need to take ownership of a project to have a raison d'être and someone willing to act as the link to the Board. I look forward to hearing from you!

*Barbara Brighthouse  
Admin@ced.org.uk*





The cathedral before work started



## Tanzania: Zanzibar Cathedral

During the year CED's main involvement with the cathedral was through CED members Angus Armstrong and Ian Rankin, contracted directly to the Diocese to avoid complications with professional indemnity issues. The asbestos roof tiles and old timbers were removed to be replaced with a carefully engineered new timber structure and asbestos free slates to match the originals. Specialist stainless steel brackets were designed to support the timbers on the concrete vault. The work was carried out by direct labour under the supervision of World Monuments Fund. WMF also carried out repairs to the walls and are continuing with the electrics, sound, painting and the development of a Heritage Centre in St. Monica's.

It was good to welcome Bishop Michael

Hafidh and Project Manager Nuhu Sallanya when they visited UK in February. Their tour included Cambridge, London, Edinburgh, Oban, Mull, Iona and Millport and was a well used opportunity to renew links with UK partners. Their goal is to form lasting relationships with groups who will support the Cathedral as it pastors the Christian community which, though a small and marginalised group on the islands, is growing.

*Ian Rankin.*



*Rev. Nuhu Salanya at St. John's Church, Edinburgh*



*Kisay Kagaana: exposing the spring eyes on the lower source.*

## Uganda Projects

Since completion of the Rushere Valley Tank early 2014 progress has been made on the following schemes:

### **Kisya-Kagaana Community Gravity Water Supply, Improved Sanitation and Health and Hygiene Education Project. Rukungiri District.**

The communities of Kisya-Kagaana live in a well watered very rugged highland area at an altitude of around 6,300 ft. (1,900 m.). The only accessible perennial source of water lies at the bottom of the steep sided valley bisecting the community, involving round trips of up to 3 hours to fetch water which is highly polluted. Analysis gave results indicating the coliform count as “too numerous to count”. The stream is fed by numerous seepages passing through banana fields which also serve as open air latrines. There is a high incidence of diarrhoeal diseases and infant mortality is high. The Community's request to CED for assistance in tackling the situation came

through the Church of Uganda in 2007. Nothing had been done before because the terrain was considered too difficult

After a significant period (>5year) of funding applications, at last funding has been secured (from various sources) up to nearly the full amount of ~£280,000.

### **The following has been achieved to date:**

A pre-project 'Base Line Survey' was undertaken in May 2014 by independent project evaluators, Drs. Hugh and Patricia Stradling to establish the base line data against which the eventual benefits in health, hygiene, school attendance and quality of life achieved by the project can be measured. The study found that the Kisya-Kagaana Valley is: “in desperate need of a safer water supply that is accessible to each household within easy reach. It is clear too that the community are extremely keen that it be progressed as fast as possible. Some have begun to lose hope that it will ever happen. A good, practical gravity feed solution has been proposed and the community want to be involved in its execution.”

The evaluators concluded by saying: “it is our strong recommendation that this project proceed as soon as possible.”

The community has now been mobilised and are very enthusiastic to the extent that there is a risk of carrying out work before the details have been properly finalised. The villagers have concentrated on spring development and capping. Source flows have been measured. The design of the network of pipes and tanks is nearly complete. The main pipeline tenders have been evaluated and the order placed. Pipes are now being delivered.

The next steps are to finalise the exact tank positions and outstanding pipe routes, to commence tank construction and pipeline installation, size the filter building and produce the layout of filters within the building.

Included in the project is an experimental automatic backwash filtration system, designed by CED Member Nigel Heeler which is currently undergoing trials at the Southbank University in London, prior to installation at the Kinyankobe spring. If successful it could be replicated in many rural water supplies in sub-Saharan Africa.

*Project Director:* John Holloway.  
*Project Engineer:* Nigel Heeler assisted by Ross Bromley who will each make 2 site visits a year.  
*Direct site supervision:* Philip Tibenderana, CED's part time Ugandan Engineer.

**Main statistics:**

- \*3 capped spring sources
- \*26 km of PVC pipeline
- \*3 nr 45m3 water storage tanks
- \*Self washing filters on most turbid source (as a trial)
- \*52 tapstands local to each group of households

**Potential Rwentemu Valley Tank**

This project would serve a remote community of 2000 households, 5 schools, 2 churches a mosque and 5,000 heads of cattle. Currently the community collect water from a small



*Kisay Kagaana: Western side of valley where two springs are located*

excavated dam. CED has authorised survey and design for a new Valley tank to supply the community. The scheme is likely to be similar to the Rushere scheme.

**Potential New Kayenje Primary School Supply**

The school has approached CED requesting assistance in improving the deficient school supply (in drought periods) when pupils have to collect water from polluted water sources. CED's view is that the supply needs to serve a wider community to justify funding. The scheme options are broadly to:

- expand the existing rainwater catchment system
- develop the borehole at the nearby Catholic School
- cap a spring or springs and transmit water to users.

CED has authorised the carrying out of a survey and scheme design. Further information is needed to assess the project's potential.

*Nigel Heeler with John Holloway*





*Sand dam August 2014*

## **Pakistan: Community Water Project, Thar.**

**Goal:** to build the capacity of 30 villages in the Thar Desert to resist drought more effectively, especially women in 900 vulnerable households.

**Funders:** Scottish Government; Tear Fund.

**Partner:** Participatory Village Development Programme, Sindh.

**Cost:** £258,700

The team has now completed the second year of this three-year project, which extends a previous project which ran from 2010. Work is now underway on the third and final year's programme.

Development projects rarely run smoothly. The biggest challenge in this last year has been that the monsoon rains did not arrive last summer, resulting in a serious drought situation. This in turn caused significant levels of migration of community members to the Indus plain area with their livestock to find water and pasture land. Not unusual and of course one of the main

reasons for this project is to increase the resilience of communities in the Thar Desert, so that when drought strikes they aren't forced to migrate, with the consequent disruption to healthcare, education and family ties that this brings.

The drought affected the project. No rain meant that there was no floodwater to wash sand down the river behind the sand dam. We made the decision to build the final row of gabions across the dam anyway, and finish off the dam construction so the dam now sits complete, waiting for the monsoon rains which we all hope will arrive in the next few weeks.

The drought also affected the ability of households to start up kitchen gardening. With no rain there is little water available for non-essential purposes and more time is taken up fetching water from wells which often are at some distance from the household. So kitchen gardening takes a back seat. Our project will improve this situation long-term, because we are enhancing water storage capability at the household level (by building the underground tanks) and so allowing households to start up initiatives like kitchen gardens. But in the short term



*Dominic Stephen of PVDP at the completed sand dam*

we need rain to “kick-start” the process!

Our other challenge this last year has been the solar distillation plants. There was always an element of risk with these, attempting to introduce a new idea to communities while relying on a design developed by another NGO on a pilot basis. In the event, despite the best efforts of all involved - CED Engineers, PVDP and the communities themselves - it was found that the water yield from the solar distillation plants was just not worth the effort required to keep them operational. They were high-maintenance but yielded far less water than we had been led to expect. Credit goes especially to our colleague Colin Gibson in Karachi who put a lot of work into researching possible modifications and improvements, to see if we could make the concept work in practice. The villagers were patient with the project team, and gave it their best shot which shows that there is a good relationship between PVDP and the villagers at local level. So the solar distillation plants are no more but we learned some valuable lessons, and have reassigned funds for the final year so that the remaining budget is used effectively. One new initiative to improve the survival rate of saplings is to hand the challenge to the children. If children can keep ten saplings alive until March 2016 they will receive prizes; they will collect wild seedlings and replant them at their homes. The forestry department will supply further saplings and are offering a 50% discount to the project.



*Household underground cisterns at Rana Tarai*

The project enters its final year with a strong local team at PVDP, and good support from Colin Gibson in Karachi, and the backing of our funders. The activities in this final year will principally involve the construction of more water



*Despite the drought many villagers managed to establish a few new saplings*

storage tanks, and the renovation of several wells. Kitchen gardens and tree planting continue, although for the success of the latter we do need rain. Please continue to pray for the team, the project, the communities in which we are



*Migration: days with little water or food for cattle on the trek to the irrigated areas. New roads and electricity are arriving with plans to develop huge coal deposits.*

# Financial Highlights

## April 14 - March 15

We were fortunate to receive £229,926 to be used for the funding of projects. The major grants received were:

Scottish Government	£75,292	Thar Phase II Pakistan
Wilmslow Wells for Africa	£20,000	Kisya-Kagaana, Uganda
Ferguson Charitable Trust	£50,000	Kisya-Kagaana, Uganda
States of Guernsey	£19,980	Kisya-Kagaana, Uganda

The bulk of project spending in the year was devoted to the Thar scheme in Pakistan, the restoration of Zanzibar Cathedral and the Majahida Bible College in Tanzania. Details of all project transaction are set out in the separate Table.

CED contributed £6,500 from its own funds to support work in Tanzania and Uganda. It also transferred £13,000 to the Project Fund from the unrestricted fund, representing the surplus balance on that fund at the year end. The Project Fund is there to provide start-up funding and to cover any over-spending.

*Picnic in Pakistan*

Reference	Project name	B/F	Income	Payments	Transfers	C/F
PA 02	Nagar Parkar	751			-751	-
PA 06	Thar Phase II	4,922	81,092	-86,598	751	167
TZ 04	Zan Cathedral	14,903	1,357	-13,300		2,960
TZ 10	Majahida	-	6,352	-10,668	5,000	684
UG 00	Uganda Unall	475		-1,468	1,500	507
UG 35	Kisya Kagaana	-	140,520	-4,650	-	135,870
UG 36	Rushere	5,005	605	-4,402	-1,208	-
UG 37	Rwemtamu	-	-	-787	-	-787
		26,056	229,926	-121,873	5,292	139,401



*Sparrow attending village meeting, Soore Jo Tar*

# Statement of Financial Activities

## Year Ended 31<sup>st</sup> March 2015



CED's financial position remained strong in the year. Unrestricted voluntary income was down by comparison with 2013/14, but restricted income for project financing was substantially increased, mainly for the Kisy-a-Kagaana project. Administrative and governance costs were increased, but remain low with the result that there

was a surplus of unrestricted funds in the year of £14,561. There are substantial designated funds in hand to enable CED to be proactive in scheme investigation and development

*Bill Harper, Treasurer*

	Unrestricted Funds	Designated Fund	Restricted Funds	Total 2015	Total 2014
	£	£	£	£	£
<b>Incoming resources</b>					
<b>Incoming resources from generated funds</b>					
<b>Voluntary income</b>					
Donations and gifts	20,442	-	78,354	<b>98,796</b>	36,835
<b>Incoming resources from charitable activities</b>					
Grants			155,272	<b>155,272</b>	114,634
<b>Other income</b>	1,310	331	1,345	<b>2,986</b>	3,898
	21,752	331	234,971	<b>257,054</b>	155,367
<b>Resources expended</b>					
<b>Costs of generating funds</b>					
Costs of generating voluntary income	726	-	-	<b>726</b>	638
<b>Charitable activities</b>					
Costs associated with engineering activities	3,293	-	121,873	<b>125,166</b>	140,240
<b>Governance costs</b>	3,172	-		<b>3,172</b>	2,629
<b>Total Resources Expended</b>	<b>7,191</b>	<b>-</b>	<b>121,873</b>	<b>129,064</b>	143,507
<b>Net Incoming / (Outgoing) Resources before Transfers</b>	<b>14,561</b>	<b>331</b>	<b>113,098</b>	<b>127,990</b>	11,860
<b>Transfers between funds</b>	<b>(14,500)</b>	<b>9,208</b>	<b>5,292</b>	<b>-</b>	<b>-</b>
<b>Net Incoming / (Outgoing) Resources</b>	<b>61</b>	<b>9,539</b>	<b>118,390</b>	<b>127,990</b>	11,860
<b>Balance brought forward at 1st April 2014</b>	<b>10,539</b>	<b>60,182</b>	<b>31,781</b>	<b>102,502</b>	90,642
<b>Balance carried forward at 31st March 2015</b>	<b>10,600</b>	<b>69,721</b>	<b>150,171</b>	<b>230,492</b>	102,502

# Christian Engineers in Development



CED is an association of engineers and other professional people who share their Christian faith and serve God through an engineering consultancy service for Christian and other communities.

Friends and supporters can be involved in CED's ministry in various ways including:

- Praying regularly for CED
- Raising the profile of CED
- Donating funds for project initiation and support
- Fund raising for specific projects

*As members of Christ's body, the Church, we endeavour, in both our private and professional lives to:*  
*Respond to the call of God our Father and Creator;*  
*Trust his Son, Jesus Christ, as our Lord and Saviour and*  
*Serve our fellow human beings in the power of the Holy Spirit –*  
*That all may be done to the glory of God.*

## All enquiries to CED Secretary:

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Registered Company No. 1980353

For the latest news within CED visit the website at:

[www.ced.org.uk](http://www.ced.org.uk)



*A family service at Africa Inland Church, Majahida*

[www.ced.org.uk](http://www.ced.org.uk)