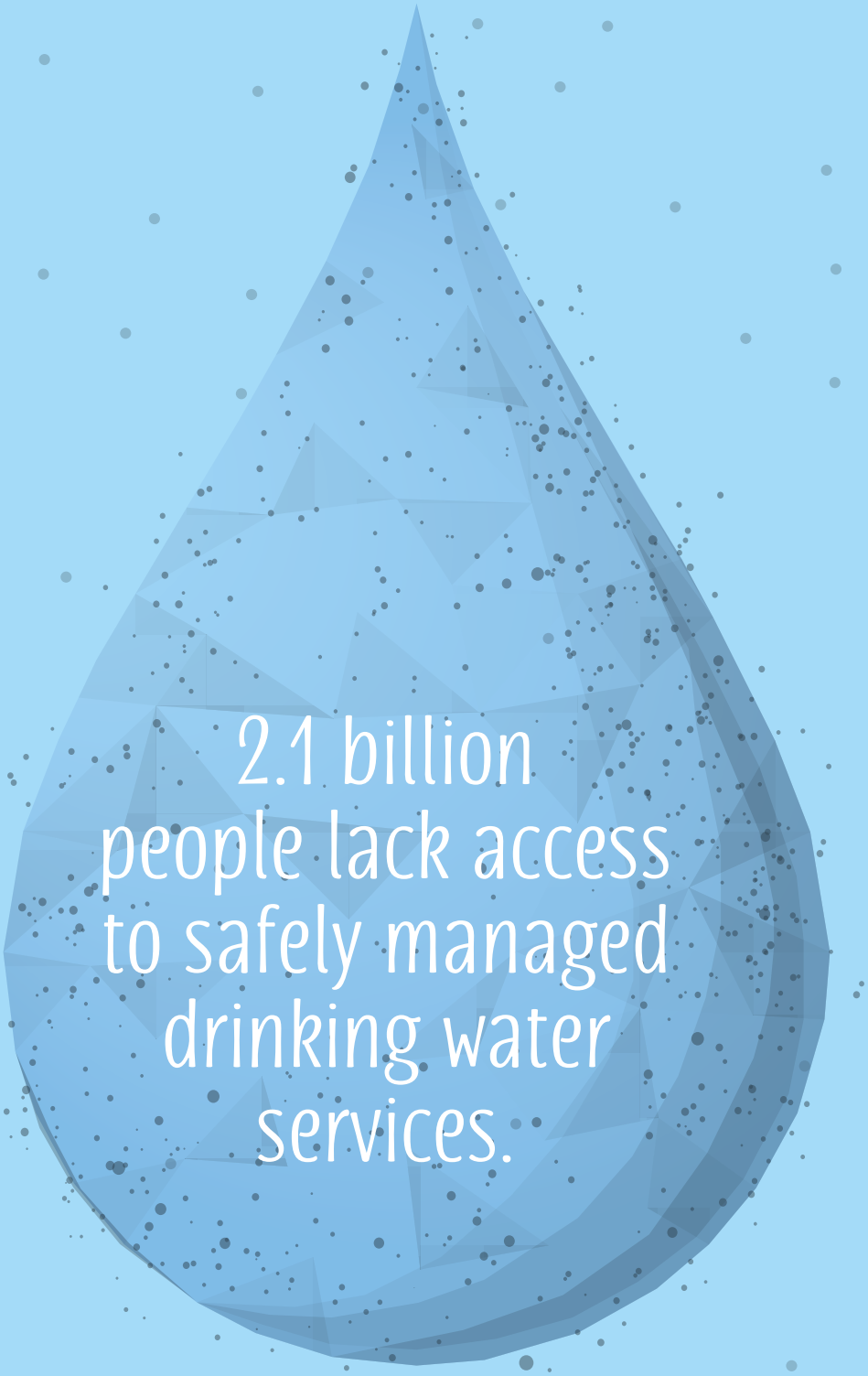
WATER IS LIFE

Access to safe water and sanitation is a fundamental necessity of life and a declared human right. Water is vital for sustainable development – from health and nutrition, to gender equity and economics. With our growing population, rapidly developing global economy and the effects of climate change placing ever-increasing demands on accessible, safe water sources, it is imperative we focus our efforts on addressing water-related challenges. Rotarians, Rotaractors and Interactors from across our regions are joining forces to implement sustainable water and sanitation solutions across the globe.


2.1 billion
people lack access
to safely managed
drinking water
services.

Fact. Clean water and toilets save lives. It's hard to imagine that having the ability to turn on a tap or use a bathroom can generate such profound effects. However, in the case of many developing nations, it can be the difference between life and death.

One third of the world's population lacks a safe, sustainable water source, while approximately six in 10 people don't have properly managed sanitation facilities to use.

As a result, millions of people die every year from entirely preventable diseases associated with unsafe water and poor sanitation. This includes 3000 children each and every day. The lack of water and sanitation also impacts food security, livelihood choices and educational opportunities for poor families around the world.

The Future

Fortunately, through concentrated efforts, progress has been made in the past decade to improve sources of drinking water and proper sanitation for people around the globe. The United Nations records improvements have been made for up to 90 per cent of the world's population – but we still have a long way to go.

Reduced access to freshwater resources is a looming threat. Currently, two billion people live with the risk of being without water. However, by 2050, at least one in four people are likely to be affected by chronic and recurring freshwater shortages.

Drought already afflicts some of the world's poorest countries, worsening hunger and malnutrition, and is set to become even worse. To counter this, increased investment in the management of freshwater ecosystems and sanitation facilities on a local level is needed, particularly within developing nations in Asia and Africa.

WASH

WASH is the collective term for water, sanitation and hygiene, and is the subject of the United Nations Sustainable Development Goal 6 – Clean Water and Sanitation, fundamental needs for public health and sustainable development. Water, sanitation and hygiene are grouped together as their impact, and deficiencies in each area, strongly overlap. Ensuring improvements in all areas has been shown to have a strong, positive impact on public health.

The Rotary Foundation – Six Areas of Focus

Water and sanitation is one of The Rotary Foundation's six *Areas of Focus* – recognised as necessities for a healthy environment and a productive life for people globally. Through water, sanitation and hygiene programs, Rotarians are mobilising resources, forming partnerships and investing in infrastructure and training to yield long-term change in communities around the world.

The Rotary Foundation facilitates investments in projects that:

- Strengthen the ability of communities to develop, fund, and maintain sustainable water and sanitation systems;
- Provide equitable community access to safe water, improved sanitation and hygiene;
- Support programs that enhance communities' awareness of the benefits of safe water, sanitation and hygiene;
- Support studies for career-minded professionals related to water and sanitation;
- Create tools and resources that facilitate, measure and enhance the implementation of high-quality water and sanitation projects worldwide.

In the 2017-18 financial year, The Rotary Foundation provided 283 grants totalling $18,761,791 for water and sanitation projects throughout the world.

Grants by primary area of focus

Area of Focus	Number	Amount
Basic education and literacy	174	$10,998,136
Disease prevention and treatment	483	$35,660,986
Economic and community development	182	$10,503,910
Maternal and child health	102	$7,204,677
Peace and conflict prevention/resolution	82	$3,547,899
Water and sanitation	283	$18,761,791

For the period July 1, 2018 to April 2019, a similar pattern exists, with 229 global grants for water and sanitation projects issued.

Area of Focus	Number of grants
Basic education and literacy	148
Disease prevention and treatment	435
Economic and community development	164
Maternal and child health	85
Peace and conflict prevention/resolution	57
Water and sanitation	229
Grand Total	1118

The Toilet Warrior: Mark Balla

During a business trip to India, a chance encounter on a train led to two young men inviting Australian author Mark Balla to look around a slum called Dharavi, where they lived while studying at university.

Dharavi is one of the world's largest slums, with one million people crammed into around 1.6km^2. Mark spent hours exploring with his two new friends, seeing the places where people lived, shopped and worked.

"Finally, we ended up at a school. I was looking around, and there were lots of little boys and girls… and lots of teenage boys as well."

But there was one noticeable absence – no teenage girls. When he asked why, the answer was simple: because there were no toilets for them.

Every day, tens of millions of children in India, and throughout the developing world, go to school where there is nowhere to go to the toilet. When Mark first learned about this issue just a few years ago, barely a quarter of the schools in India had separate functional toilets for girls. Thanks to Rotary and others, including the Indian Government, the numbers have improved dramatically.

For all the improvement, however, even today 20 per cent of girls in India drop out of school on reaching puberty, with almost half of them saying lack of toilets is their reason for leaving. Of those who continue their education, 20 per cent skip school when they have their period. Huge numbers don't drink water during the day, even in the heat of summer, because they are afraid they will need to go to the toilet.

Only five years ago, 100 million homes in India had no toilets. An Indian Government program over the past four years has seen almost 90 million household toilets built and yet there are still millions of people in the country who simply have no option but to defecate in the open.

"Boys and men will use walls, trees, gutters, bushes and train lines," Mark says. "That's the nature of open urination and defecation in India. Women and girls on the other hand, they don't go to the toilet outside during the day. Those who still have no toilet at home wait until after dark, or before dawn, and they go and look for somewhere quiet or secluded. Somewhere they can't be seen or heard. Somewhere perfect for sexual assault. In some states of India, up to half of all reported rapes happened to

Nearly 900 million people defecate in the open every day because they have no alternative.

Dehli school students demonstrate their newfound hand-washing skills.

Vidya Prashala High School and Junior College

Operation Toilets Australia recently completed a project to assist the Vidya Prashala High School and Junior College. The school services seven nearby villages west of Nasik, with some children walking up to 7km each way, every day.

Built many years ago, the school's original toilets were located some 150m from the classrooms down a narrow, overgrown path. They were apparently placed such a distance away to keep the smell as far from the classrooms as possible; nobody thought to implement a cleaning and maintenance program.

Mark Balla described his visit to the old toilet facilities as a truly horrible experience. "The stench stayed in my nose for hours."

Furthermore, there was no security for the children as they made their way back and forth to the facilities as they were completely out of sight of the teaching staff.

The headmaster at Vidya Prashala had been looking for help to solve this problem since taking on his position. When his plight came to their attention, members of the Rotary Club of Box Hill Central visited the school, along with their friends from the local Rotary Club of Nasik Road.

Both clubs, with help from other clubs in Australia and the US, funded the construction of 30 toilets, including cubicles and urinals, as well as hand washing stations. There is also provision for an ongoing maintenance fund and support for a comprehensive student hygiene education program. A number of members of the Rotary Club of Box Hill Central were at the school in January for the unveiling of the toilets, along with a VIP representative from the Rotary Club of Amesbury Massachussets, Julia Phelps, who is a current trustee of The Rotary Foundation and a past director of Rotary International. Julia's club was one of the many clubs that contributed to the project.

For a quick introduction to the story behind Operation Toilets, watch Mark's TEDx Talk "Toilet Humour is Serious Business" at **https://youtu.be/r3xr13xFfto**

If you would like to get involved, contact Brian Martin on 0407 894 216 or email brian_martin@netspace.net.au.

Nasik Road

The Nasik Road project involved utilising a Rotary Foundation global grant of $120,000 to construct toilets in seven schools and a rural community. The objective was to reduce the school dropout and absentee rates among adolescent female students, as well as provide a structured introduction to WASH education for all children.

Nearly 4500 students were direct beneficiaries of the school component of the project in the first year alone. Over the life of the toilets, an estimated 10 to 15 years, some 20,000 children will benefit from the improvement.

The rural community was targeted to help offer increased security to the women, who were at risk every time they had to attend to the call of nature in the open. The project was also designed to reduce the hazards of open defecation and improve overall hygiene in the village.

Dudhodi School

The village of Dudhodi is located around 100km east of the city of Pune. While the village school, educating around 200 boys and girls, had a toilet block, for all intents and purposes it was non-functional, having been built at a time when ensuring long-term maintenance and cleaning were simply not on the radar.

The Rotary Club of Box Hill Central, in partnership with the Rotary Club of Chadstone East, Vic, supported Operation Toilets' new partner in India, the Rotary Club of Poona, to build new toilets and start a WASH education program at the school. Four cubicles for girls and female teachers were erected, along with two cubicles and four urinals for males. This toilet to student ratio is appropriate for current numbers, with room for growth.

Mark Balla pays a visit to Dudhodi Primary School, where the 187 students now have toilets, wash stations and hygiene education.

girls and women who are outside late at night looking for somewhere to go to the toilet.

"This revelation fundamentally changed my understanding of the world we live in. As all my friends know, my life changed on that day – and the lives of tens of thousands of underprivileged children have also changed as a result.

"I could have gone with the ever-reliable response of, 'What can I do? I'm only one person.' Instead, I decided to get involved. I simply couldn't walk away."

Mark found like minds at the Rotary Club of Box Hill Central, Vic, and joined up, with Operation Toilets Australia founded shortly after as a signature project of the club. The project's basic goal is to build toilets and deliver hygiene education programs to schools in developing countries. Through doing so, the hope is to improve health and overall community wellbeing, and in particular to enhance educational opportunities for young women.

Operation Toilets Australia partners with Rotary clubs around the world and in-country not-for-profit organisations to build toilets of solid brick construction with sustainable sanitation connections. A key component of any successful Operation Toilets project is a well-designed WASH (Water, Sanitation & Hygiene) education program. In Operation Toilets' largest projects, UNICEF guidelines have been followed very closely. Students are taught to wash their hands after visiting the toilet or before eating. Adolescent girls are taught about the importance of proper menstrual hygiene. Local communities are also encouraged to become involved.

Schools commit to an ongoing maintenance program to ensure the toilets are kept in good working order, thereby ensuring the project's long-term sustainability.

To date, Operation Toilets' projects have improved the lives of at least 30,000 children, with this figure expected to rise to well over 100,000 over the next 18 months.

Mark is also on the board of the Water and Sanitation Rotarian Action Group (WASRAG). He's presented to around 70 Rotary clubs in five countries and three languages, at district conferences in Australia, the United States and India, as well as at the Rotary International conventions in Sao Paulo, Seoul and Toronto. This year, he will be involved in a breakout session in Hamburg and on the panel at the WASRAG World Water Summit in Hamburg as well. He is also a member of the Rotary Foundation Cadre of Technical Advisors, having just returned from a two-week assignment in Guatemala. Eighteen months ago, Mark was inducted to the World Toilet Organisation by Jack "Mr Toilet" Sim, who many Rotarians will remember as a keynote speaker at the RI Convention in Sydney.

"Six years ago, I thought Rotary was old men sizzling sausages outside Bunnings," Mark says. "Let's say that my understanding of our organisation has changed somewhat."

Mark recently published a book, *Toilet Warrior*, chronicling his humanitarian journey into the wonderful world of toilets. Profits from sales of the book will be donated to The Rotary Foundation.

"In the telling of this tale, it becomes clear that it is also a story of dramatic personal change. The unveiling of my own inner humanitarian came as one of the most unexpected surprises of my life. And let me tell you from personal experience, if you are ever introduced to your own inner humanitarian, grab on to them and don't let go. You're unlikely to ever meet a better version of yourself."

To purchase your copy of* Toilet Warrior *visit www.toiletwarrior.net

Green Geckos get water

After a presentation by SkyJuice Foundation at the District 9820 conference, the Rotary Club of Frankston Peninsula 2.0, Vic, was inspired to apply to Disaster Aid Australia for a SkyHydrant for the Green Gecko project it supports in Cambodia.

Registered with Rotary Australia World Community Service (RAWCS), Green Gecko aids former street children and their families in Siem Reap. Through mentoring, training, health initiatives and social enterprise, the families are assisted to successfully break the cycle of begging and dramatically reduce the many negative consequences of living in poverty.

When the club's application was successful, Rotarian Russell Poole attended training on how to install and maintain the SkyHydrant, but the matter of how to transport it safely was a slight dilemma. Russell and his wife Trudy, also a member of the club, were travelling to Cambodia to undertake further work on the Green Gecko project, but were already overladen with donations to transport.

"I thought I would give DHL a call to see if they could transport the SkyHydrant to Cambodia, as they had kindly helped me previously with Days for Girls hygiene packs," Trudy said. "Happily, they were all too eager to help. DHL Express picked up the Hydrant from my front door here in Frankston and generously delivered it completely free of charge to the project's front gate in Siem Reap."

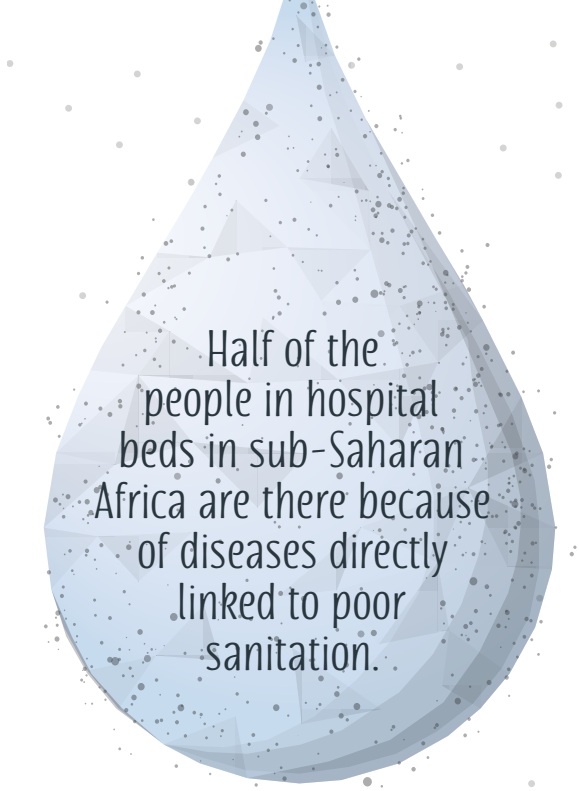
With the help of Hounham, an apprentice plumber from the Green Gecko program, they purchased the plumbing materials needed and installed the SkyHydrant on site. The Green Gecko maintenance team built a cage around the system to keep it secure.

Hounham further put in a set of taps, so the Geckos now have easy access to fresh water for drinking and cooking every day, making an enormous improvement to their daily lives. The water has been professionally tested and certified as being of excellent quality.

There is now discussion around the prospect of using the SkyHydrant to start a micro-business in which the Gecko Action Team, a youth group modelled on Rotaract, will fill and refill water bottles for sale to the local community to raise funds for community projects.

For more information, visit www.greengeckoproject.org

Rotarians Russell and Trudy Poole travelled to Cambodia to oversee the installation of a SkyHydrant as part of the Green Gecko project their club supports. Trudy's mother, Audrey Mutton (pictured), of the Rotary Club of Frankston chose the occasion to celebrate her 90th birthday with the Geckos.



Sanitation for rural Zambian schools

The urgent need for water and sanitation infrastructure at the Luyando School in rural Zambia has been met through the efforts of Rotarians in Australia, New Zealand, the United States and Zambia.

Children in rural Zambia usually live in impoverished circumstances, unable to receive schooling due to a serious shortage of government-provided education. This locks them out of work in the main Zambian economy, and consigns them to a life of poverty.

The Auckland-based Limapela Foundation has been working for the past decade to assist poor children to overcome their disadvantage, running two schools providing basic primary education. The first of these is Cedric's School near Kitwe, owned and run by the Limapela Foundation. The second is Luyando School, administered by the Limapela Foundation on behalf of the British-based Give Hope International Foundation. From these schools, children can, and do, graduate into the Zambian secondary school system.

In 2014, Rotary clubs in NSW District 9710 used a matching grant to provide a water tank, toilet and shower block for Cedric's School. Previously, students had no option but to use pit latrines that were particularly dangerous for young pupils, who could easily fall. The Rotary project installed an ablution block with toilets, showers and hand washing basins.

In 2018, the Rotary Club of Canberra, ACT, initiated a second project to install water and sanitation infrastructure at Luyando School. They received extensive support from the ACT Rotary clubs of Hall, Belconnen, Canberra East, Canberra City, the NSW clubs of Jerrabomberra and Bateman's Bay, and the Rotary Club of Invercargill East, NZ. District Designated Funds came from District 9710, and US Districts 7360 and 7300.

The Limapela Foundation engaged and supervised local builders, with the Rotary Club of Kitwe, Zambia, working closely alongside to provide project oversight.

The 400 children at Luyando School now have a high standard of sanitation, with on-site toilets and washing facilities now in place.

In March, Rotary Club of Canberra member Paul Street and his wife Sue visited Luyando School. They were welcomed as guests of honour at the opening of the new ablution blocks, with students and representatives of the community and the Rotary Club of Kitwe all taking part in the celebration.

There is an urgent need for sponsorship of children's very modest school fees so that they can attend school. The Limapela Foundation is trying to improve pay and provide better accommodation for its dedicated teachers. The Foundation would welcome club sponsorship to assist with teachers' salaries.

For more information, contact Desmond Woods via desmond.woods51@hotmail.com or call 0427 663 449. To learn more about the work being done and how to engage with the children and teachers, visit: www.limapela.org

The 400 children at Luyando School in rural Zambia now have a high standard of sanitation, with on-site toilets and washing facilities, thanks to the efforts of Rotarians in Australia, New Zealand, the United States and Zambia. The school's new ablutions block was officially opened in March, with students and representatives of the community and the Rotary Club of Kitwe all taking part in the celebration. The project was initiated by the Rotary Club of Canberra, with member Paul Street and his wife Sue welcomed as guests of honour at the opening ceremony.

The gift of clean water

Women and girls are responsible for water collection in 80 per cent of households without access to water on premises.

Rotarian Judy Charnaud has been working in the enclave of Oecusse, Timor-Leste, since 2001. Judy set up non-government organisation GREEN TL over a decade ago, with well-known and respected local leader Luis Armando coming on board as director.

Judy's current project, Sustainable Villages, is registered with Rotary Australia World Community Service (RAWCS), and supported by several Sydney Rotary clubs, including Brookvale, Epping, Eastwood-Gladesville and the e-Club of Greater Sydney, of which Judy is a member.

Judy and Luis work closely with villagers to assess their community and lifestyle and how it might be improved. Villagers are also educated on the impact of environmental degradation, a big problem in the region, and its impact upon their livelihoods.

Together, Judy, Luis and the community come together to vision a future in which the village is sustainable, healthy and prosperous, with children having a positive outlook to the future. Villagers design site-specific plans and actions to make this a reality, with ongoing work towards their goals supported by GREEN TL.

Lack of clean drinking water presents itself as a continuous problem in villages, leading to constant diarrhoea, ill health, malnutrition and one of the highest childhood morbidity rates in the world. Connected to the lack of a reliable water supply is the deficiency of good quality food, leading to hunger and malnutrition. The World Health Organisation ranks Timor-Leste the nation with the third largest percentage of stunted growth in children under five internationally, better only than Afghanistan and Yemen. The result is poor educational standards and lethargy, as well as long-term health problems.

Water issues are also affected by deforestation in catchments due to unsustainable agricultural practices. This leads to severe erosion, landslides and the lowering of the water table.

Judy and GREEN TL have rehabilitated wells, provided household bio-sand filtration units and supplied over 4000 food and timber tree seedlings for replanting on hillsides and riverbanks. Once established, coconut, mango and banana trees will also provide food. Mahogany, teak and trambesi trees will eventually become an income source when sustainably harvested on maturation.

"Our water looks better, tastes better and our children are not as sick. We no longer have to constantly take them to the clinic, which is a long distance from our village," said one grateful villager.

When the local government made electricity available to some of the outlying regions in Oecusse, pumps and piping were provided to irrigate community vegetable gardens in the villages of Bocosse and Passabe.

"The smiles on the faces of the children when taps were turned on for the first time was something to see," Judy said. "Better still, the gardens are flourishing and providing fresh food for local families. In time, they will also provide much-needed income as excess vegetables can be sold in the local market."

Rotarians from supporting Australian Rotary clubs have visited Timor-Leste to see the transformation in communities supported by the Sustainable Villages project firsthand. The work of Judy and GREEN TL continues across multiple villages, to provide as many people in Timor-Leste with clean water and reliable food sources as possible.

Children in the enclave of Oecusse, Timor-Leste, delight in playing in water from a tap for the first time. OPPOSITE: John Corney, Bruce Jacobs and Peter Garrard, of the Rotary Club of Epping, along with Judy Charnaud, of the Rotary e-Club of Greater Sydney, and Luis Armando, of GREEN TL, testing the water from a bio-sand filtration unit.

Water for 'Eua Island in the wake of Cyclone Gita

Cyclone Gita hit Tonga on February 13, 2018, inflicting major damage to the main island of Tongatapu and the southwest island of 'Eua.

The Rotary Club of Papakura, NZ, was alerted to the need for help by club member John Ross, who works for the Heilala Vanilla company and liaises with vanilla growers on 'Eua. As the majority of relief efforts would overall be channelled to the main island, the Rotary Club of Papakura decided to focus their assistance on the more remote 'Eua.

Many buildings sustained major damage. Those that survived with their structure, roofing and water tanks intact in many cases had completely lost their spouting and down piping, meaning the community was unable to properly access water.

The Rotary Club of Papakura quickly developed a project to install spouting and down pipes to buildings with overall minor damage, including houses, schools and community buildings. Club members have extensive experience in such endeavours, having completed numerous water projects installing pumps, solar pumps and water pipes throughout whole villages on the Tongan island of Vava'u over the past 16 years.

Working with the Rotary Club of Tauranga and Heilala Vanilla, the Rotary Club of Papakura secured a 20ft container, which was packed with 1400m of steel spouting and 450m of Marley downpipe, along with all the fixings, bends, accessories, tools, ladders, timber and sealing necessary for installation.

Funding of NZ$35,000 for this was raised between the three main project partners. The Rotary Club of Papakura contributed $15,000 of their own funds, and $5000 each was put in by the Rotary Club of Tauranga and Heilala Vanilla. Additional funds were derived from the Harold Thomas Trust and a grant from The Rotary Foundation.

Local people from Heilala Vanilla arranged local shipping requirements, including customs release and ferrying the container to 'Eua from the mainland.

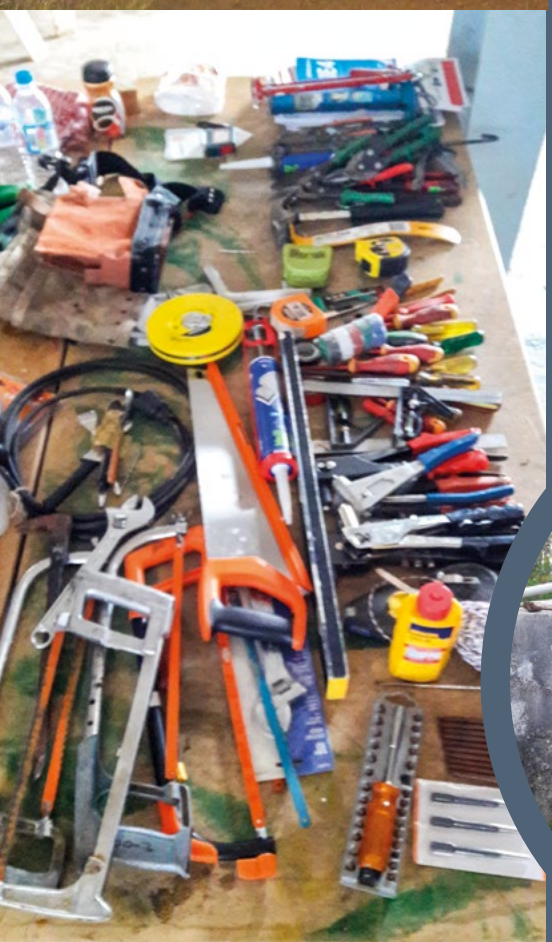
Along with all the supplies required, Rotarians had to bring almost everything necessary to equip an empty house, organised by Heilala Vanilla, which they were provided with for the duration of their 10-day stay. This included bedding, portable showers, refrigerator, microwave, barbecue, food and utensils – all of which was donated to the community after they left. This was necessary as, even before the cyclone, 'Eua Island had very little tourist infrastructure and is only accessible via a three-and-a-half-hour ferry ride, running three times a week. A light aircraft service is also available, but this was out of action at the time.

During their time there, the Rotary team installed spouting and down pipes on three classroom blocks and 48 houses, coordinating with MORDI (Mainstreaming of Rural Development Innovation, Tonga Trust), which was already preparing to carry out Cyclone Gita repair work.

The tools and materials required to equip another 100 houses were left behind, with locals trained on how to accurately utilise equipment, fabricate steel spouting, and install brackets. Ongoing work will be monitored by contacts on the island.

The team finished their work on June 7, 2018, less than four months after the Cyclone struck.

About 90% of all natural disasters are water-related (floods, landslides, tsunamis, storms, heat waves, cold spells, droughts and waterborne disease outbreaks).



CLOCKWISE FROM TOP: A house on 'Eua Island, Tonga, with its new spouting and down pipes, installed by the Rotary Club of Papakura following damage sustained by Cyclone Gita; The school on 'Eua Island also received new spouting; Garth Boggiss, of the Rotary Club of Tauranga, NZ, installing new piping on a local home; Some of the tools brought over to the island for the project, which were later donated to the community.

Water works in Timor-Leste

In September 2018, a team from the Rotary Club of Phillip Island and San Remo, Vic., travelled to Dili, Timor-Leste, to install a SkyHydrant filter and two clean water tanks at the AHA SOLS 24/7 School.

In April this year, team members Duncan Hedditch and Max Bird, of the Rotary Club of Kwinana, WA, returned to check on the operation of the system, as well as others previously installed by Rotarians. They were also on the lookout for further opportunities to improve water access in the area.

The pair were pleased to find the school's new water infrastructure has been working flawlessly. Since it was installed, the school has never run out of clean drinking water. The school administrator and teachers look after the daily maintenance and care, with no problems experienced.

"From what we saw, this system should continue to provide reliable, clean water for many years," Duncan said.

Following this, Duncan and Max travelled to Baucau, where they were hosted by the Salesians order at the Catholic parish. Using this as a base, they visited numerous schools and villages in the vicinity, as well as further east to Laga, to audit other Rotary installations.

Schools typically serve several hundred students, with some also hosting boarding students living on site.

"There were all high-quality installations, properly engineered, with the capability to provide good water supplies to these schools and communities for many decades," Duncan said.

It became clear the most successful operations fulfilled three main criteria. First, access to pipelines, tanks and pumps was restricted to only those who own or maintain them. Second, there was a single owner of the system, such as a school or individual, who had a vested interest in its continued operation. Finally, the project had been professionally engineered and executed, with only high-quality components utilised.

"This is not an environment where 'good enough' is good enough," Duncan said. "Sadly, many millions of dollars have been wasted in Timor-Leste. Examples of this are everywhere."

The pair further scoped out two new project sites. Planning has commenced to undertake re-plumbing of downpipes and the installation of a new tank system at the high school and orphanage at Quelicai.

Work is now taking place to develop a new concept created by Max and Duncan to provide safe water using 20ft shipping containers as fully enclosed, standardised clean water systems. Fitted within the container would be two 3000L water tanks, a SkyHydrant, sink and service counter. A third tank and tank stand would travel inside the container and be mounted on top at the site, to serve as the dirty or feed water tank. It would be possible to have the system operational within an hour of arrival, once a local water supply was connected.

"There are many difficulties putting in tanks and filters in remote locations. Local construction skills are not always what they should be. The weather isn't always good and poor roads mean returning to get another length of pipe can easily add two days to a simple three-day project. Add to that the vulnerability of systems to damage by curious and careless people, means sometimes significant lengths are needed in order to keep systems safe," Duncan said.

"The container could be secured by simply locking it at night. In village locations, the container could be the basis for a village-run business, potentially a much more sustainable approach than relying on responsible and civic-minded people."

For more information, contact Max via email maxbird@bigpond.com.

Duncan Hedditch and Max Bird check on the operation of the SkyHydrant filter and water tanks the Rotary Club of Phillip Island and San Remo installed at the AHA SOLS 24/7 School in Dili, Timor-Leste.

Water runs clear for Nepalese school

The Rotary Club of Pokhara-Fishtail, Nepal, together with the local Janasewa Sanskrit Secondary School, instigated an engineering report into the feasibility of running pipeline from a nearby spring to the school. At the time, the school and village in which the students lived had no easily accessible water for drinking or sanitation – the only option was to walk the 8km round trip to the spring.

The Rotary Club of Pokhara-Fishtail approached their friends at the Rotary Club of Grovedale Waurn Ponds, Vic, to help fund the project. The US$38,000 required was beyond the Rotary Club of Grovedale's means, however, with some ingenuity they managed to acquire the full amount using contributions from their district's fund and a global grant.

The Rotary Club of Grovedale Waurn Ponds personally contributed $4000, with an additional $3000 put in by the neighbouring Rotary Club of Highton. The Rotary Club of Pokhara-Fishtail added an additional $400. Through applications for matching grants from district and global grants, an additional $31,000 was received.

The pipeline was laid, and water connected to an existing toilet block and houses in the community. A number of school staff along with selected locals were trained in basic plumbing to enable them to do maintenance and repairs. Locals were to be paid for their work, creating a new form of employment in the community. All students and staff were provided with hygiene education and the importance of proper sanitation practices.

The Rotary and Rotaract clubs of Pokhara-Fishtail both helped oversee the project's implementation. Now, over 1200 students and teachers and nearly 1500 local villagers have water for drinking and sanitation needs.

Paul Desbrowe-Annear, of the Rotary Club of Grovedale Waurn Ponds, travelled to Nepal to attend the official handover ceremony with his friend Leon. Leon, who had previously had little to do with Rotary but saw firsthand how valuable and life-changing the project was for the community, ended up joining the Rotary Club of Grovedale Waurn Ponds on his return to Australia.

Over 1200 students and teachers and nearly 1500 local villagers in Nepal's Pokhara region now have water for drinking and sanitation needs, thanks to a joint project between the Rotary and Rotaract Clubs of Pokhara-Fishtail and the Rotary Club of Grovedale Waurn Ponds.

Small Grants Project (East Indonesia)

The Rotary District 9710 Small Grants Project (East Indonesia) supports the work of Nusa Tennggara Association (NTA) East Indonesia Aid in providing funding to assist the purchase of local materials to aid a range of water, sanitation, agriculture, education and weaving cooperative projects. Grant recipients complete all construction work, with East Indonesia Aid providing monitoring, evaluation and technical support to ensure quality and sustainability.

The East Indonesia population is among the poorest in the world. The eight-month dry season is known as the "hunger season", with poor crop yields responsible for extensive malnutrition. Lack of food is responsible for stunted growth in over one third of the population.

Poor sanitation and hygiene further results in some of the highest rates of child mortality and lifespans in Indonesia. Around 14,500 children under five die from diarrhoea in the region every year.

The Rotary District 9710 Small Grants project provides grants for local households and communities to construct sustainable wells, tanks, toilets and washing blocks. This enables access to good sanitation and fresh drinking water, helping to maintain health standards and free up time previously spent retrieving water, for education and work.

Water is additionally used to sustain plant nurseries and personal vegetable gardens, increasing income generation and food security. The project also funds grants towards improving educational facilities, infrastructure and resources within schools.

The project is registered with Rotary Australia World Community Service (RAWCS) and backed by several clubs in District 9710. Clubs involved make annual contributions. This year's commitments to date include the Rotary clubs of Belconnen ($4000), Burley Griffin ($2000), Canberra Sunrise ($530), and Goulburn Argyle ($500), as well as $1000 each from the Interact Club of Narabundah and the Rotaract Club of Canberra. Additional funds have been raised from individual Rotarians who have sponsored toilet blocks and the raffle of a handmade quilt.

A total of $30,000 has been committed for the span of the project - $10,000 split over three years, which supports roughly 30 projects each year.

Strategic Partner NTA East Indonesia Aid has worked for three decades implementing aid programs to improve the level of health, livelihoods and food security for small rural households in East Indonesia. Strong volunteer support means costs are kept to a minimum, and a continual rotation to new villages ensures assistance is broadly spread throughout the area. They currently work with 202 cooperatives, known as "kelompoks", with 10-25 households in each, as well as 65 schools and kindergartens.

Kelompoks and schools determine their own priority needs, which NTA works to facilitate. Construction supervision is provided by NTA;

however, beneficiaries are expected to participate in the project through providing labour and some materials themselves. So far, NTA has supported the construction of 3500 toilet units and 1200 water tanks.

Project manager John Mercer and his wife Yvonne journeyed to East Indonesia to view various water, sanitation, agriculture, education and enterprise projects funded by the Rotary Small Grants project. The overall field trip was 32 days – an exhausting but wonderful experience.

Transport included everything from trucks with slats of wood for seats over unsealed, bumpy tracks to a motor launch to Samau Island. Their journey included visiting 200 community groups and 52 schools, and the inspection of numerous water tanks and toilet blocks, agricultural fields and the NTA plant and tree nursery.

Meetings took place with project partners the Indonesia Agricultural Research Institute and University Seminary Tinggi.

Monika and Arnoldus, who live in a 36m^2 bamboo house with their son and two daughters, were just one of the many families the team met with on their travels. Their small farm is a 40-minute drive from the city of Maumere, a location known for its extreme dryness, with no rainfall for five months of the year the norm. The family's main income derives from peanuts, green beans and maize, earning them around AU$250 a year.

With funding for materials from the Rotary project, Monika and Arnoldus completed construction of a new 15,000 litre water tank in 2018.

"Me and my husband are very happy we now have a water tank," Monika beamed. "When the tank runs dry of rainwater, we can buy water from the water truck. Rainwater is free and of much better quality than the water we used to collect from the local well. The water from the well often has a bad smell and taste, even if we boil it for a long time before using it.

"We are also very glad not to have to carry water from the well to our house anymore. Carrying water in the big buckets was hard work, when we were already tired from a day's fieldwork and the children walking the long distance to and from school. Now we have a tap right next to our house."

The family are members of the Bunga Kukak B Kelompok, an agricultural cooperative comprised of 10 families who combine in farming activities. They have been supported by NTA since January 2012 and agree on priority projects amongst themselves. To date, eight of the 10 families have received support to build water tanks, which collect enough water during the rainy season to support them if they are conservative in their usage.

"The trip reinforced that this is a worthwhile international project with still more help needed, especially in water and sanitation projects," John said. "Besides continuing our financial support for projects, we agreed to assist NTA in developing an Australian Rotary Agricultural Expert Advisory Panel for project agricultural support and put together a Rotary Donor field visit for one or two weeks in November 2019."

For more information on the project contact John Mercer via john.mercer47@gmail.com or 0474 792 217.

The Rotary District 9710 Small Grants project provides grants for local households and communities in East Indonesia to construct sustainable wells, tanks, toilets and washing blocks. Water is additionally used to sustain plant nurseries and personal vegetable gardens, increasing income generation and food security.

Success for Disaster Aid Australia at international awards

Disaster Aid Australia (DAA), a charity started by the Rotary Club of Endeavour Hills, Vic, was recently invited to the Energy Globe World Sustainability Awards to present its Safe Water for Every Child (Philippines) project.

The Project

The Safe Water for Every Child project has involved installing high-quality Australian SkyHydrant water filters in schools, villages and displaced persons camps.

Each SkyHydrant water filter can remove all bacteria from 10,000 litres of water a day, without the use of electricity or chemicals.

The estimated life of the ultrafiltration membrane is 10 years, before a replacement membrane needs to be fitted.

In order to further maximise sustainability and keep costs down, the physical installation work in the Philippines is carried out by a local partner of Disaster Aid Australia, the Balay Mindanaw Peace Foundation.

Disaster Aid Australia won the 2018 National Energy Globe Award for its 'Safe Water for Every Child' project in the Philippines.

Director of Disaster Aid Australia Brian Ashworth presenting on DAA's Safe Water for Every Child project at the Energy Globe Awards.

An installation costs $5000 for a community of over 500 people, or 1000 school pupils.

That means the cost of safe drinking water is less than one dollar, per person, per year.

With the exception of the filters, all other material involved in the installation is purchased in the Philippines.

The Energy Globe Awards

Energy Globe was founded in 1999 by Austrian energy pioneer Wolfgang Neuman to provide international recognition for successful sustainable projects.

The Energy Globe Awards are the premier international awards for environmental achievement.

The goal of the award is to present successful sustainable projects to a broad audience.

Each year, projects that conserve and protect our resources or employ renewable energy are invited to participate.

The DAA project was one of more than 2300 entries from around the world that entered the 2018 awards.

In June 2018, the National Award for the Best Australian Project was awarded to Disaster Aid Australia.

World Awards in Yazd Iran

In December 2018, Disaster Aid Australia was invited to the World Awards in Yazd Iran, to be held in January 2019, as one of the four best water projects from the 2300 sustainability projects submitted worldwide.

During the awards ceremony, each of the 16 nominated organisations were asked to present its project as in Energy Globe's view, all the projects were of World's Best Practice in sustainability.

The presentation of Brian Ashworth, a director of DAA, described:

- DAA's development of its aid delivery over several years to deliver cost-effective, safe water in a sustainable manner;
- The successful health outcomes of the project;
- DAA's current projects providing safe water to communities around the world.

The Future

DAA is happy to talk to all Rotary clubs and individuals that would like to support its aim of Safe Water for Every Child, including the following initiatives:

- Personalised individual holidays in Bhutan for two people (see back cover of this issue of *RDU*);
- Opportunities for clubs to participate in Foundation global grant projects in Bhutan and the Philippines that are currently being prepared;
- Partnerships with Rotary clubs and charities that would like to incorporate safe water into their projects.

Contact DAA via 1300 881 913, 03 9706 9171 or email admin@disasteraidaustralia.org.au.

Delivering water to Timor-Leste East

Rotary Projects Timor-Leste East has been delivering water supply improvements to villages and schools in rural areas of eastern Timor-Leste for the past seven years.

The aim has been to bring water closer to villages and schools to remove the need for water to be carried from sources often long distances away. The task typically falls to young girls, who use items like old cooking oil containers to haul water, in many cases along treacherous pathways. The girls are required to collect the water before school otherwise they are not allowed to attend.

Numerous Rotary clubs and external donors have supported the project, including the Western Australian clubs of Albany Port, Byford & Districts, Cockburn, Kojonup, Kwinana, Mandurah Districts, Palm Beach, Rockingham and Southern Districts. This has been bolstered by a number of global grants successfully obtained from The Rotary Foundation.

Rotary Projects Timor-Leste East's latest project was carried out in October 2018 following 18 months of planning.

Previously, the sub-district centre of Baguia, Timor-Leste, had virtually no water source towards the end of the dry season. The project consisted of connecting a collection tank to a local spring. Polyethylene piping was then laid from the collection tank to storage tanks in Baguia, previously constructed by the Rotary Projects Timor-Leste East to collect rainwater.

The gravity pipeline was some 4000m long, constructed part way down a steep mountainside and crossing a number of ravines. A team of local Timorese were vital in assisting with installation, their dedication and familiarity with the local landscape was essential in achieving the gravity connection between the spring and Baguia. Each 150m roll of pipe weighed 60kg and had to be carried down the hillside for hundreds of metres.

Following this, distribution pipes and standpipes were laid along the main street of Baguia. Water is now available to the community on a timetable, with running water on tap for two hours a day.

It has made an immediate difference to the lives of the women forced to collect water daily. There has also been an increase in the number of visitors to the area due to the enhanced amenities, with running water operating in tourist accommodation helping grow the village's economy.

"On behalf of Baguia community, thank you for all your hard work and big support to us in Baguia during dry season," said local lady Leopoldina Guterres, who wrote a letter of thanks to the Rotarians who made the project possible. "You understand our life and our difficulties. You are very supportive and give us water when there is no water. The community is feeling very safe."

"There is always more work that needs to be done in Timor-Leste and receiving thanks from the local people is what keeps us going," said the Rotarians of Rotary Projects Timor-Leste East contact Max Bird.

For more information, contact Max via maxbird@bigpond.com.

Rotary Projects Timor-Leste East has been delivering water supply improvements to villages and schools in rural areas of eastern Timor-Leste for the past seven years.

WASRAG

The Water & Sanitation Rotarian Action Group (WASRAG) was formed in 2007. Since then it has facilitated hundreds of projects – helping clubs find partners, ensuring sustainability, stressing the importance of a needs-driven approach, and developing best practices. WASRAG encourages a holistic, integrated approach in which water is not the end in itself, but is rather the means to a better life and livelihood in the community. Most importantly, WASRAG links water and sanitation to improved hygiene, better health, and empowerment of the community – especially women, irrigation and agriculture, education and literacy, and, ultimately, child mortality. To find out more visit www.wasrag.org

The power of collaboration

It all started with a conversation.

PDG Stephen Lamont was having coffee with Bryan Humphrey, of the Rotary Club of Geelong East, Vic, when he expressed his desire to build wells for people in Veal Veang District of Pursat Province, Cambodia. It would build on a previous, successful project providing clean water to a Cambodian village.

Stephen committed funds from the district's Foundation funding and Bryan volunteered to visit nearly every club in District 9780 to talk about the project and ask for financial support as groundwork for a global grant application for The Rotary Foundation. To his credit, Bryan achieved contributions from 22 Rotary clubs. Individuals from within and outside Rotary also provided further donations. The global grant was approved in February 2017, with total funding of US$56,234.

The project came to be overseen by Rotarians drawn from a variety of clubs within the district. The Rotary Club of Phnom Penh in Cambodia signed up as the international and host club, as well as agreeing to act as project manager.

The Cambodian Organisation for Children and Development worked with Rotary to implement the project. They undertook tender processes to select suppliers, provided ongoing monitoring, and trained all relevant parties.

Bryan himself visited the project, prior and during completion. In February 2018, a larger group of Rotarians from District 9780 travelled to Cambodia to visit a number of the sites where the project was making a difference to the lives of the Cambodian people, including members of the Rotary clubs of Highton, Grovedale Waurn Ponds, Geelong East, Colac and Wendouree, and the Rotaract Club of Warracknabeal.

"Much to our delight, the project was completed six months ahead of schedule, bringing clean water to almost 5800 people," Stephen said.

"Twelve wells with pumps were installed for communities and schools overall, some at a depth of nearly 40m. All water was tested and is guaranteed to be pure. Families previously forced to drink dirty water, travel long distances to collect water or purchase it for a significant amount of their monthly income, now have a safe, reliable and convenient supply. This project has improved health, increased incomes and raised school attendance, particularly by girls, who were often tasked with water retrieval duties."

Five rainwater collection systems have also been installed in schools. In one of the largest high schools in the area a bio-sand filtration system is now in place, enabling dirty reticulated town water to be purified. This has resulted in clean, running water for over 600 students and teachers.

More than 80% of human wastewater is discharged into rivers and the ocean without any pollution removal.

Management committees have been formed to ensure the upkeep of wells and water tanks over time to ensure long-term sustainability. Participants have been trained in maintenance and hygienic usage, as well as equipped with a maintenance budget.

"This project exemplifies Rotary's capacity to make a difference in the lives of communities who require assistance," Stephen said. "Most importantly, it demonstrates the strength of partnerships and collaboration to realise large-scale, meaningful projects that change lives."

Aquabox: A life-saving project

LEFT: Contents of an Aquabox Family. BELOW: Cambodian school children with a life-saving Aquabox. BELOW LEFT: An Aquabox delivered to Cambodia in 2016

Established by the Rotary Club of Eltham, Vic, Aquabox Australia provides emergency relief to people affected by disaster by sending essential provisions to devastated areas around the world. Over the past 19 years, more than 3500 of the life-saving boxes have been shipped to victims of disasters, primarily in the Asia Pacific region.

Aquabox is essentially a life-saving water tank with water filters and water treatment tablets that convert polluted water into safe drinking water. There are two types of boxes: the Aquabox '30', which can produce up to 30,000 litres of clean water, and the Aquabox 'Family', which can produce up to 2000 litres of clean water and includes a variety of humanitarian aid items. Each box is assembled by Rotary volunteers in Eltham.

While primarily a first response solution in areas where the local water supply has been adversely impacted by a disaster, Aquabox has also been used to address pre-existing water issues that were causing illness and death in developing countries. Aquabox has been deployed in response to the Boxing Day tsunami; the Black Saturday bushfires (see page 18); disasters in the

Philippines, cyclones in Samoa and Vanuatu, the Nepal earthquake, and floods in Chennai, India.

One of the major recipients of Aquaboxes, particularly in the past 10 years, has been Cambodia. The Rotary Club of Phnom Penh approached Aquabox Australia for help after severe flooding struck Cambodia in 2011. A shipment of boxes and two members of the Aquabox team were sent to Cambodia to assist. Aquabox Australia has had a close working relationship with the club ever since, enabling the prepositioning of boxes and ensuring their rapid distribution after a disaster.

With a supply of Aquaboxes on hand, which is replenished when required, the Rotary Club of Phnom Penh has responded promptly to a number of disasters in recent years, including two fires in the Steung Meanchey district of Phnom Penh that left more than 96 families homeless and flooding in Banteay Meanchey province in the west of Cambodia.

Having the Aquaboxes on hand overcomes many of the problems that have been encountered with getting the boxes into a country rapidly in the wake of a natural disaster. Aquaboxes are also currently prepositioned in the Philippines and Fiji, with other sites in the Asia Pacific region being explored. With the ongoing aim of enabling Aquabox to be more responsive to disasters while reducing transport costs and time, other initiatives, such as in-country assembly of the boxes by local Rotary clubs, are also under consideration.

Donations and partnerships with other Rotary clubs or districts to extend the good work of Aquabox are welcome.

For more information, visit www.aquabox.org.au or contact Aquabox Australia via 0410 982 031 or aquabox.au@gmail.com.

The people of Komosawa, Tanzania, now have access to safe, clean drinking water for the first time in their lives, thanks to a well installed in their village.

Glenorchy provides water in Tanzania

A life-changing well has been installed in the village of Komosawa, located in Tanzania's Mara region, thanks to the Rotary Club of Glenorchy, Tas.

Tanzania is the largest country in East Africa, and one of the world's poorest. Due to its harsh climate, around half of its 52 million people lack access to safe drinking water.

"In a country like Tanzania, over 3000 children under five die each year from preventable diarrhoeal diseases caused by poor water quality and sanitation," John Berry, of the Rotary Club of Glenorchy, said. "Our club felt we should do something tangible to address this issue and make a difference in that part of the world."

Tanzanian women and children typically spend over two hours a day collecting water. In some remote areas it can take up to seven hours. The installation of a well, therefore, produces immediate change in the lives of families in the surrounding area.

"The people of Komosawa now have access to safe, clean drinking water for the first time in their lives. This is having a direct impact on their health and wellbeing and even such factors as attendance at school by local children," John said.

Monitoring to assess the functionality of the Komosawa well found over 800 people now collect water from it daily. This translates to around 3000 people being provided with clean drinking water. It has also freed an enormous amount of time for women and children to undertake education, employment and other tasks.

People are also walking for kilometres from neighbouring areas to use the Rotary-funded well – a reduced distance from previous water sources in the region.

Long-term sustainability was an important element in the club's decision to commit to the project. The well descends 31 metres below ground, to a bore fed from long-lasting, deep-seated water sources.

Diana Butler, CEO of the Care for Africa Foundation and member of the Rotary Club of South Launceston, Tas, acted as the Rotary Club of Glenorchy's African liaison for the project. She officially opened the well on their behalf, with an excited reception from the locals.

"The water flows from dawn to dusk," Diana said. "It is such a joy to see children constantly at the well, either drinking directly, filling up their buckets to take home for their families or just washing under the crisp clean water."

Since the well's installation, school attendance has increased by 20 per cent, rising from 469 to 567 students. There were also only two cases of water-borne diseases, such as diarrhoea, recorded in clinics in the area, whereas previously up to a third of school children were presenting with these conditions.

"This has been a major undertaking by the Rotary Club of Glenorchy and a tribute to the people of Glenorchy, who tirelessly support our fundraising activities," John said. "The well was made possible by the generosity of our local community, who continue to back us in our international outreach projects."