Water, Sanitation and Hygiene in Ethiopia

A REGION ON THE BRINK

Tigray’s lowest point is 700 metres above sea level and 80 per cent of its 4.6 million people are rural. Their need for clean water and sanitation is considered particularly urgent due to the devastating effect of climate change on the landscape and population.

Since 2006, the European Union (EU) has been supporting UNICEF water, hygiene and sanitation projects countrywide – in 78 woredas (districts) of Ethiopia’s nine regions. As part of an accelerated programme towards achieving Ethiopia’s Millennium Development Goals (MDGs) for water and sanitation, the EU has contributed 10.8 million euros, out of the total 21.6 million euro cost of UNICEF’s water, sanitation and hygiene programmes targeting 1.4 million people countrywide. Ethiopia’s ambition for the MDGs was to extend clean water to 85 per cent of the population. By 2008, coverage was about 52 per cent, up from 28 per cent in 2000. UNICEF’s water, hygiene and sanitation teams are working in eight districts of Tigray and five of the district projects are supported by the EU.

Parched Earth

Two thousand years ago, Tigray was a verdant kingdom in a trading powerhouse. Climate change and deforestation have turned it into a parched landscape battling to reach the Millennium Development Goals

Meses Gebregziabhere, 84, cannot remember how many great-grandchildren he has. But his memory is a treasure trove for the children who gather to hear his recollections of their village, Tsahilo, in northern Ethiopia.

“This was an evergreen area with many different kinds of indigenous trees, some of them tall. There were rivers!” he exclaims.

“We had adequate land for grazing our cattle and growing our crops. We could even plant slow-maturing crops like millet and sorghum, and we had two harvests every year. We had milk for everyone.

“Those were very nice days.”

It is a good thing children believe in fairy tales. Tigray, the once-lush region that in the first millennium hosted a wealthy international trading empire, is now a dustbowl circled by jagged crystalline rocks swept bare of topsoil. Only pocket handkerchiefs of land are cultivated by 3.7 million rural people living among the humblest existences on the planet: Oxen draw ploughs, mud roofs remain more common than corrugated iron sheeting and, in homes, earthenware pots and bowls still have not been replaced by plastic.
On the outskirts of Hawzien, children and women collect water from an unsafe water source. Meles Gebregziabhere (centre) remembers trees and rivers in the village of Tsahilo. At Gebrealta in Hawzien district (right) the landscape is littered with vestiges of history, including Italian graves from the second world war.

In the past 30 years the Biblical landscape of Tigray has turned apocalyptic, as marching deforestation, coupled with the unpredictable rains of climate change, have pushed the environment to the limits of habit-ability. A key concern is how – against these odds – to bring water and sanitation to pastoralists and subsistence farmers whose survival becomes more precarious with every season that passes.

Six districts of Tigray and a further 72 in the rest of Ethiopia are currently being targeted by UNICEF, the European Union (EU) and the government in a 23.1 million euro programme aimed at bringing water and sanitation to one million people in the five years leading up to 2011.

In the village of Chila, Letay Gebregiorgis, 32, used to have to get up before daybreak to collect water from a river that was sometimes polluted. She and her donkey braved hyenas and other dangers that stalk the valley in the half light of dawn. But in November 2009, under the EU-UNICEF initiative, a broken pump less than 15 minutes’ walk from her house was repaired. Earlier last year, after district officials supported by UNICEF came to the village and explained the benefits of sanitation, her husband built a latrine for her and their four children.

“The access to water and the latrine at home have meant great improvements to our lives,” says Gebregiorgis who is a member of the village water committee which – since the pump was rehabilitated - collects

“A POWERHOUSE OF ANTIQUITY

The apocalyptic landscape that is Tigray today jars with its historical heritage. In classical Antiquity – the millennium that included the birth of Christ – its main city, Axum, headed a kingdom that was the most powerful Red Sea state between the Eastern Roman Empire and Persia. The Axumite Kingdom traded with Egypt, Palestine, Arabia, India and Ceylon and adopted Christianity in the 4th century. Axum’s Saint Mary of Tseyon (Zion) is, according to Ethiopian tradition, the repository of the biblical Ark of the Covenant.

THE FALL OF AN EMPIRE

No one can date the decline of Tigray but as recently as the 19th century, Emperor Johannes IV had a throne the size of a house built for himself by an Italian carpenter using locally-grown juniper wood. It stands today in a museum in the administrative capital, Mekele, and is evidence that the excesses of empire may be the root cause of the deforestation that began destroying Tigray even before climate change compounded the environmental crisis. In 1985, pop stars Bob Geldof and Midge Ure organized Live Aid to raise funds for famine relief for the area.

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Letay Gebregiorgis, housewife, Chila
contributions towards its upkeep. "I use the pump water for baking njera (teff bread) and for food preparation. But to be economical, I still wash our clothes in the river. The biggest improvement has been in the family’s health. The children never get diarrhoea any more," she says.

Epidemiological records show that before the EU-UNICEF programme got under way in 2006, 80 per cent of all diseases affecting children in targeted areas were a result of lacking water and sanitation. One of the objectives of the sanitation programme is to reduce rates of diarrhoea and trachoma by 40 per cent. In Ethiopia, the under-5 mortality rate is 123 per thousand and nearly half those deaths (46 per cent) are as a result of diarrhoea.

Illnesses linked to poor sanitation not only keep children out of school on sick days but are known – in the case of parasitic amoebas – to impair their ability to learn. Schools have been a focal point of the EU-UNICEF effort in Tigray, with 156 of them having been equipped with girls’ and boys’ latrines.

At the top of a parched hill, 40 kilometres from Mek’ele, headmaster Getachew Kiros talks with pride of how the EU-UNICEF’s sanitation programme – including the building of latrines and the introduction of entertaining activities teaching handwashing and hygiene – has changed the fortunes of Birki school. "We started in 1998 with 70 pupils from two villages. Since then, 824 children have passed through and recently we have expanded the curriculum. Since 2009, when we began our water and sanitation activities, the learning environment has improved enormously. Clean children hold themselves better and seem more keen to be good students."

Since 2006 in Tigray, the influence of the EU-UNICEF partnership – in particular the hygiene training and the construction of demonstration latrines – has encouraged more than 750,000 households to build their

**Illnesses linked to poor sanitation keep children out of school on sick days and can impair their ability to learn.**

**With EU support, UNICEF has equipped 25 schools in Tigray with girls’ and boys’ latrines**
With EU support, UNICEF has rehabilitated 200 water supply schemes and drilled or dug more than 1,200 wells in six districts of Tigray.

own facilities. As a result the number of homes with latrines has increased from 60 per cent to 90 per cent. Gebrehiwot Smur, the acting administrator for Kilte-Awelailo, says the programme – which has hinged, for implementation, on the support of his staff – has produced tangible results. “In our district since 2006, we have seen a reduction of 64 per cent in cases of communicable diseases while 74 per cent of people have gained access to safe water.”

In a country where 80 per cent of the population remains rural, the overall number of people with access to clean water stands at around 52 per cent. Denis Thieulin, head of cooperation at the EU Delegation in Addis Ababa, said the figure marks a great improvement. “In 2000 coverage was about 28 per cent so the situation is already twice as good as it was. But we are still a long way from the target of 85 per cent. Despite government enthusiasm for working towards the Millennium Development Goals, one of the challenges we have faced is the lack of capacity in the local administration,” he said.

Another challenge, in a country where climate change is so brutal, is to convince sceptics of the viability of bringing water and sanitation to people living in a dustbowl. UNICEF water and sanitation officer Kinfe Zeru admits to sometimes asking himself the question. But he adds: “The way we are working is the best approach to ensure our work is sustainable. We are not simply turning up and building shallow

“When drilling machinery needs to get through, the community builds the access road. The communities have devised latrine ventilation made from a stem of sisal”

UNICEF water and sanitation officer Kinfe Zeru

Since 2006 when EU/UNICEF-supported health extension work began in five districts of Tigray, more than 30,000 latrines have been built.

Percentage of households in the five districts which now have latrines:
- Hawzien, 66 per cent
- Alaje, 72 per cent
- Emokeni, 81 per cent
- Enderta, 87 per cent
- H/Wajirat, 90 per cent

- 924 water, sanitation and hygiene committee members, pump operators and community representatives have been trained.
- 74 shallow wells drilled and equipped with hand pumps.
- 33 wells dug and equipped with hand pumps.
- 32 on spot springs developed.
- 14 existing water supply schemes rehabilitated.
wells or latrines for people. When drilling machinery needs to get through, the community builds the access road. When households are helped to construct latrines, they supply their own stones and sand. The communities have even, themselves, devised latrine ventilation made from a stem of sisal.

"We are working with climate change in mind. Our shallow wells generally go at least to 50 metres, which should protect them from drought. In some places we are able to introduce micro dams and we are finding, through them, that springs are returning. I very much hope that our work will not only prove to be sustainable but will help reverse the environmental degradation in Tigray."

To the old storyteller in Tsahilo, the environmental degradation in Tigray is God’s work. But Meles Gebregziabhere nevertheless holds up a glimmer of hope for his great grandchildren: "What has happened is God’s work because humans did something to make him angry. Humans now must make him feel happy again."
What has happened is God’s work because humans did something to make him angry  
Meles Gebregziabher, 84

AT LAST

The ‘belg’ rains that fall from March until May are keenly awaited. At Edgaehelus in Simitret district (above) the rain finally arrives in April but the thunderstorm that brings it creates instant rivers (below right) and ground conditions mean little of the water is absorbed. The area’s geology is clay-like mudstone, sandstone and granite. UNICEF water, sanitation and hygiene project officer Leul Fisseha says: “Rainfall frequency and intensity are increasingly erratic and the underlying geology is hard rock. The solutions are in terracing, reforestation and the construction of dams. The government – through its safety net programme that gives rural people a small income in return for carrying out public works – has initiated projects in all these areas but more needs to be done as urbanization and population growth are increasing the requirement for water.”

Nevertheless Fisseha believes Tigray may have turned the corner. “The worst ravages happened between the 1960s and about 2005. In the past five years we have begun to see improvements as a result of positive man-made intervention. Thanks to microdams that can store water, we are seeing the re-emergence, downstream, of springs. In areas where rehabilitation has been going on, the water table is rising.”

While excessive levels of fluoride in water – and even arsenic and uranium content – represent health problems in some parts of Ethiopia, Fisseha says Tigray’s groundwater is largely of good quality. Nevertheless, hardness caused by limestone is a handicap in some areas of the region.

Top and centre right: An Orthodox priest helps his brother roof his house. Roofs are made using traditional methods – layers of wooden poles, soil, curved slate and hay. The materials have the advantage of being local but they are absorbent and, as a result, do not offer the same potential for rainwater run-off. In areas where it is suitable, UNICEF is introducing rainwater-harvesting by using roofs made from corrugated materials.
Since this school introduced lessons and games around the subject of water and sanitation (above), teachers have noticed an overall improvement in school attendance and in children’s desire to study. Children bring water containers to school for drinking water and often arrive in class at midday after a morning of doing household chores or working in the fields. UNICEF has constructed girls and boys’ latrines at 25 schools in Tigray (top right).

Schoolgirl Askual Gebremeden (bottom, on right) and her friends. The 18-year-old dropped out of school to work in the fields but later regretted her decision. Girls who have access to latrines at school are more likely to finish their education.

“Since we began our water and sanitation activities, the learning environment has improved. Clean children hold themselves better and seem more keen to be good students”

School headmaster Getachew Kiros
Before the EU-funded UNICEF programme began in Tigray, 80 per cent of all diseases affecting children were a result of poor sanitation.
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Gebrehiwot Smur, acting administrator for Kilte-Awelailo

AT WORK

Community health extension worker Kidane Gebremeden is supporting efforts towards making her village, Tsahilo, defecation-free. “We have explained the public hazards of open defecation and even the children bury their faeces now,” says Gebremeden who is paid a salary of 680 Birr (38 euros) and is one of two permanent health workers for the 286 households of Tsahilo. “I am mostly kept busy by cases of diarrhoea, pneumonia, malaria and eye infections. But the diarrhoea is going down now,” she says, adding that her main message to villagers is that “80 per cent of all cases of illness are preventable and linked to water and sanitation”. Community health extension workers are deployed all over Ethiopia and paid by local districts. They receive one year’s training, including one month spent at a teaching hospital. The health extension workers represent a key link between UNICEF and local government.

At a clinic in Edgasehelus, health extension worker Aynalem Assefo dealt with an outbreak of typhoid fever in 2009. “The outbreak was linked to lack of access to reliable water and that situation is directly connected to erratic rainfall. Across three villages we recorded 161 cases of typhoid, including one fatality. The villagers who were affected gather their water from a pit in a riverbed which is also used by animals. They do have access to clean water but the distance to it is really too great and they prefer to go to the pit,” he said.

Assefo said that in Edgasehelus, where the clinic is located, there is good access to clean water. “Generally, in towns, there is better access to safe water. But rural villages have done better when it comes to building latrines.”