



Alain Gachet, who will feature in a French TV documentary later this month, has already successfully found water underneath Kenya

# Diviner intervention: French geologist has the Moses touch

Having found an underground lake the size of Windermere in Kenya, Alain Gachet tells **JOHN LICHFIELD** how his radar scanning technique could alleviate drought all over the world

*“And Moses lifted up his hand, and with his rod he smote the rock twice: and the water came out abundantly, and the congregation drank, and their beasts also.” Numbers, chapter 20, verse 11.*

Alain Gachet is a modern-day Moses. His hair is biblically white but unbiblically short. He has produced water “abundantly” from the rock in some of the world’s most pitiless deserts – Darfur in the western Sudan, northern Kenya and now in Ethiopia.

Mr Gachet is not a prophet but a French geologist. His instrument is not a rod but radar images of Earth taken from satellites. He has devised a computer programme which can unscramble surface obstructions and expose water “shining” far underground.

Mr Gachet, 65, says that his process (metaphorically) “peels away the rocks like an

onion” and reveals unsuspected underground rivers and aquifers of fresh water lying hundreds of metres below the most drought-stricken parts of the planet.

In 2013 his method located a lake bigger than Windermere up to 300 metres below the parched northern tip of Kenya. He has helped NGOs locate the sites for scores of wells in Darfur.

He has recently helped US government engineers to discover immense water resources far below the deserts of northern Ethiopia. This finding has been little publicised, partly because the Ethiopian government wants to avoid claims on the resource from groups, including the extremist al-Shabaab.

Just like the water-divining activities of Moses, Mr Gachet’s work can lead to political arguments, jealousies and misunderstandings. He sometimes feuds with relief

charities and with Unesco but his work has been praised, and his expertise frequently sought, by the US government and the United Nations.

He is less well-known in his native France and in Europe – although he has recently received France’s highest civilian honour, the Légion d’honneur.

Mr Gachet has now written a book which describes his extraordinary career – from meeting Colonel Muammar Gaddafi to dodging al-Shabaab extremists. He hopes the book – *L’homme qui fait jaillir l’eau du désert* (The man who makes the desert gush with water) – will help to lift his work to a new level.

“Water – or the lack of it – in Africa and the Middle East is the source of almost all the terrible problems that we see in the news today,” Mr Gachet told *The Independent*. “Why are migrants pouring into Europe from Africa? Because

drought means that their animals are dying and their families are dying and they have no choice but to seek a living elsewhere.”

He also believes drought has contributed to conflicts across the Middle East. “The failure of crops from Tunisia to Syria, caused by shortages of water, is largely responsible for the conflicts which have spawned Daesh [Isis],” he said.

And yet, Mr Gachet believes – and has proved – that some of the most barren and impoverished territories on Earth sit atop immense reservoirs of water. This “deep water”, he says, is constantly replenished and 30 times larger than all the world’s rivers, lakes and man-made reservoirs.

The only problem is that the “deep water” lies very deep indeed – almost as deep as oil. To extract it is a very expensive business and, since “water is not a market-quoted commodity”, there is no proper commercial infrastructure for finding it and pumping it to the surface.

Mr Gachet – once a prospecting geologist in the oil, gold and diamond industries – believes that his invention could be the basis for a global programme, potentially funded by the World Bank and the UN, to defeat drought.

He and a colleague operate his business from Tarascon in the Rhône delta, but Mr Gachet pursues his scientific findings to the ends of the Earth, as a documentary on France 5 TV will show this month. “My philosophy has always been that you must have your eyes in the sky and your feet in the mud – or in the sand,” he said. Mr Gachet was

present in July 2013 when jets of water from 120 metres, 200 metres and 330 metres deep proved his assertion that there was a lake the size of Windermere below the Turkana desert in northern Kenya.

More recently, he has been exposed to the predations of al-Shabaab jihadists from Somalia to supervise exploratory drilling funded by USAid in northern Ethiopia.

“The drillers are the real heroes, facing al-Shabaab terrorists scavenging and taking hostages,” Mr Gachet said. “My process allowed the drilling teams to work quickly and accurately, improving their security as they did not spend time drilling blindly.”

The exploration proved the existence of a “Karamara East Aquifer”, 200 kilometres long and 50 kilometres wide, with water stretching to 700 metres below the surface. The US geological service in a recent report said that the aquifer could contain up to 30 billion cubic metres of water.

Mr Gachet devised his system, which he calls “watex”, in 2002. Radar scans from satellites or aircraft can detect humidity up to 30 metres below the ground. The problem is that the humidity is often masked by surface obstructions, from houses to



boulders. Over two years, Mr Gachet invented an algorithm which strips away the surface interference and reveals the water below. “Just like the Hubble telescope can look further into deep space because it is outside the Earth’s atmosphere, my process allow us to see deeper into the ground,” Mr Gachet said. “When you apply the watex programme to radar scans, the water glows. You can see the shining veins of the edges of aquifers and underground rivers.”

Although radar can only detect water up to 30 metres deep, the “water glow”, if matched with geological surveys, can infer the presence of lakes up to 700 metres or more below the surface. The system’s real benefit, however, could be to make drought a thing of the past – climate change or not – in some of the most planet’s desiccated areas.

NGOs operating in the Third World are in the business of solving emergencies and crises; they can potentially see expensive long-term “solutions” as a distraction. Hence, in part, Mr Gachet’s occasional feuds with relief organisations. He wants to make the case for a long-term watex-led international programme to conquer, or at least diminish, drought. As a first step, he is looking for an English-language publisher for his book.

“Over a billion people have no easy access to drinking water,” Mr Gachet said. “In another half century, there will be 5.5 billion – two thirds of the population of the planet.”

And yet there is plenty of water available if we only look – and drill.