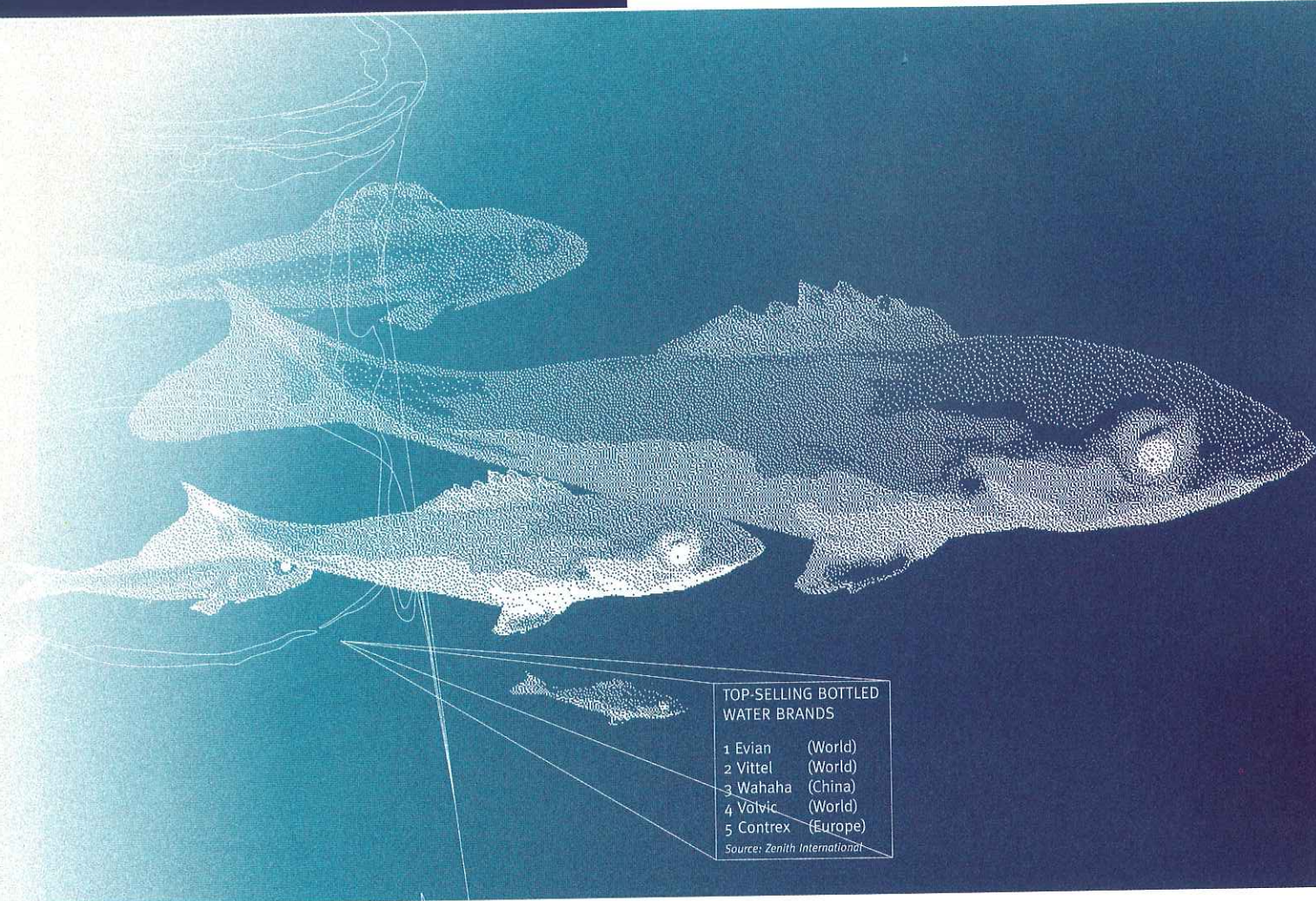


writer Eric Enno Tamm
illustrator Vår

THROUGH A GLASS DARKLY

That gulping sound you hear is the world's population thirstily quaffing the last drops from Earth's aquifers. It's inconceivable if you live in rainy old Blighty or Bergen, but fresh water could become the luxury item of the future. *Wallpaper** plunges into the crises surrounding the planet's splashiest resource



TOP-SELLING BOTTLED WATER BRANDS	
1	Evian (World)
2	Vittel (World)
3	Wahaha (China)
4	Volvic (World)
5	Contrex (Europe)

Source: Zenith International

NO matter how you look at those two handsome hydrogens in bondage with that lonesome oxygen, the ménage-a-trois molecule called water has brought us an almost infinite supply of refreshment and fun. We love it in all its forms – in its gaseous state during our sensuous Helsinki sauna sessions; as white, velvety snow on the slopes of Mont Blanc and as that thirst-quenching liquid we so love to drink, douse and dip in to. In fact, H₂O flows through every facet (and faucet) of our lives.

Yet when you distil all the facts, the reality is that there isn't that much drinkable water in the world. About 97.5 per cent is too salty to consume, a point memorably made by Samuel Taylor Coleridge's ancient mariner. About two-thirds of the remainder is frozen in the polar caps or glaciers. Of the stuff falling from the sky as part of the hydrological cycle, about 75 per cent pours down in floods and monsoons or drenches places too remote for us to get to. This all boils down to one dry little fact with huge consequences: less than 0.08 of one per cent of total water in the world is actually available for drinking.

Sitting in *Wallpaper's* HQ, the swollen Thames raging outside, our Puma trainers soaked as a result of the wettest 12-month period (April 2000-March 2001) in England since records were first kept in 1766, we have a hard time imagining that the world is in the midst of a water crisis. But the global picture tells us something else.

'The extremes of droughts and floods will get worse and worse,' says William Cosgrove, vice president of the World Water Council (WWC). 'It's clear that climate change will further exacerbate the problems of managing water.' Already one billion people lack safe drinking water and another three billion don't have proper sanitation. A recent report co-authored by Cosgrove gives us an even gloomier forecast for 2025: 'Water stress will increase significantly in more than 60 per cent of the world,' it concludes.

The World Commission on Water for the 21st Century, a group of global water experts appointed by the WWC, has found that 'the arithmetic of water simply does not add up'. It's a supply-and-demand equation whose sum is a pretty parched planet by 2025, if we continue 'business as usual'. Our insatiable demand is expected to jump as the result of a 2.5 billion population rise. We'll need about 70 per cent more water for our household needs, plus another 20 per cent more for industry and 17 per cent to grow more food.

Meanwhile our per capita supply of renewable water will plummet by 27 per cent from 6,600 cubic metres today to 4,800 by 2025. The world's wetlands were already halved over the 20th century. Around 50 per cent of freshwater bodies in Europe and North America are seriously polluted. Some of the world's largest rivers – the Yellow, Colorado, Nile, Indus – are bone-dry before they reach the sea for part or all of the year. The Worldwatch Institute estimates that we are over-pumping groundwater aquifers each year by about 160 billion cubic metres or the amount of water needed to grow grain for the entire European Union.

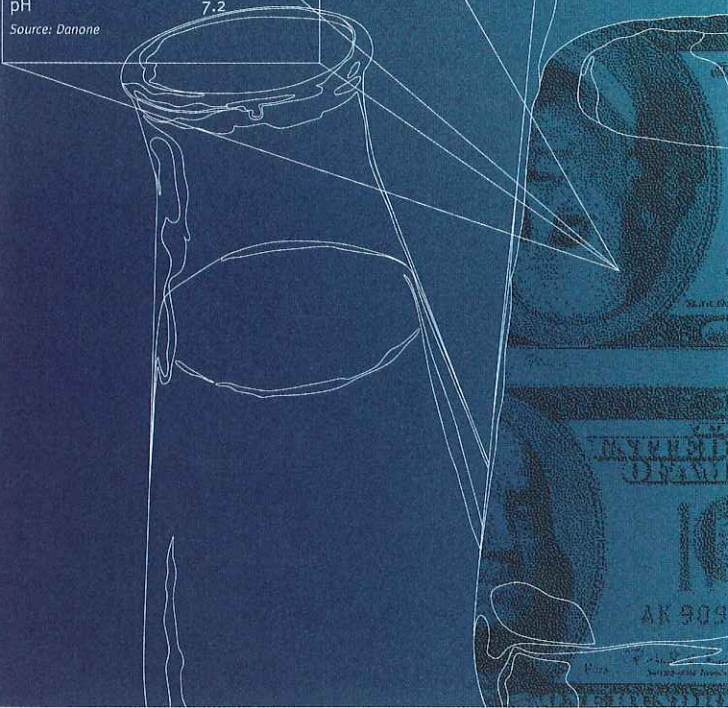
'The era when water could be considered a cheap and plentiful resource is virtually over,' says Asit Biswas, president of the Third World Centre for Water Management in Mexico City. Many Middle Eastern states already withdraw 100 per cent or more of their renewal freshwater resources. According to one assessment of 'water futures', the only places on Earth that will face absolutely no increase in water stress or vulnerability in the next two decades are Canada, Sweden, Finland and Switzerland. We've already put in calls to our estate agents.

Water is holy. Almost every religion in the world assigns sacred status to the stuff: Hindus and Buddhists believe rivers originate from the mythical Mount Meru, home of the gods. The Koran tells us that everything is made from water. (Actually, about 70 per cent of your

WHAT'S IN YOUR WATER?
Composition of a bottle of Evian

Bicarbonates	357 mg/l
Calcium	78 mg/l
Magnesium	24 mg/l
Sulphates	10 mg/l
Sodium	5 mg/l
Chlorides	4.5 mg/l
Nitrates	3.8 mg/l
Potassium	1 mg/l
pH	7.2

Source: Danone



WATER WORLD
RENEWABLE FRESHWATER RESOURCES PER CAPITA

WETTEST	COUNTRY	CUBIC METRES/CAPITA
1	Congo Republic	298,963
2	Papua New Guinea	177,940
3	Gabon	138,942
4	Canada	92,142
5	Norway	88,673
6	Paraguay	61,750
7	Venezuela	57,821
8	Lao PDR	56,638
9	Panama	52,961
10	Brazil	42,459

DRIEST	COUNTRY	CUBIC METRES/CAPITA
1	Kuwait	0
2	United Arab Emirates	73
3	Saudi Arabia	116
4	Libya	151
5	Israel	184
6	Singapore	193
7	Jordan	198
8	Yemen	254
9	Oman	439
10	Tunisia	439

Source: World Bank, 2000 World Development Indicators

SATURATION POINT
WATER NEEDED TO PRODUCE ONE SERVING OF...

PRODUCT	GALLONS	PRODUCT	GALLONS
Tomatoes	3	Cherries	90
Lettuce	6	Margarine	92
French fries	6	Watermelon	100
Sugar (from beets)	8	Eggs (2)	136
Cola soft drink	10	Pork	408
Almonds	12	Chicken	408
Wheat bread	15	Hamburger	1,303
Apples	16	Steak	2,607
Oranges	22	Typical breakfast	209
Rice	36	Typical lunch	1,427
Cantaloupe melon	51	Typical dinner	2,897
Corn	61	Typical day's meals	4,533
Milk	65		

Source: 2001 International Bottled Water Association

gorgeous, blessed body is H₂O.) Jesus walked on it and now Catholics use it as a sacramental. And Taoism often sounds more like hydrology than theology – with Lao Tzu telling us to act like water: be good, benefit all and go with the flow.

But, like religion, where there's water there's rivalry. The first mention of water and conflict comes from a Sumerian legend in 3000BC which, like the story of Noah's ark, tells of a deity who punished man by flooding Earth. The Bible chronicles Moses' ingenuous, if not miraculous, use of water when he parted the Red Sea, then swamped his pursuers. In 1503, Leonardo da Vinci teamed up with Machiavelli and the dynamic duo planned to divert the Arno River away from Pisa during a battle between the city-state and Florence.

AS the world population tripled and our water use jumped sixfold in the 20th century, water became embroiled in a torrent of conflicts. By the mid-1980s US intelligence services had pinpointed ten global hot spots where 'water wars' could erupt. So when the Cold War ended, the 'red scare' quickly became the 'blue scare'. Hawks and doves alike warned that the wars of the next century would be fought over water. So far, water hasn't been the sole 'cause' of any wars, but it certainly has been a target or weapon in many (see 'Making Waves', page 34).

Of course, Israel is the exception. Border skirmishes in the 1950s and 1960s were fought over water. Control over the River Jordan and Sea of Galilee helped precipitate all-out war in 1967. Today, the major stumbling block to a peace treaty with Syria is the Sea of Galilee, which is at its lowest level ever. This spring, when Lebanon began to construct a pumping station on the Hasbani River (which flows into Galilee), Israel's army chief of staff huffed and puffed. An ultra-nationalist government minister warned: 'Because of water, wars break

out.' Still facing a water shortfall, Israel is now negotiating with water-rich Turkey to build a 'peace pipeline' between the two countries to meet 2.5 per cent of its water needs.

'Upstream-downstream conflicts are going to grow, of course, when the population expands and its water needs expand,' says Malin Falkenmark, professor of the Stockholm International Water Institute. 'But that's not to say that violent conflicts will increase. The tendency now is to see water not as a cause of conflict, but as a catalyst for peace.'

There are 261 transboundary river basins in the world and most of the 145 riparian states realise that a 'water war' with neighbours would be mad, or more precisely MAD (mutually assured destruction). Blowing up dams, poisoning rivers and diverting waterways will only succeed in making everyone thirstier when the dust finally settles. Again, let's look at Israel. When mayhem broke out in the West Bank and Gaza Strip this winter, the Israeli-Palestinian Joint Water Committee issued a 'declaration for keeping the water infrastructure out of the cycle of violence' because it is mostly intertwined and serves both Jews and Palestinians. On 29 March, Egypt also signed a 'watershed' cooperation agreement with eight other countries in the Nile basin. India and Bangladesh have followed suit with agreements of their own.

For most of us in wet, northern countries, water is really a crisis of confidence in quality, not quantity. Which is why we're buying so much

MAKING WAVES

A CHRONOLOGY OF RECENT CONFLICTS

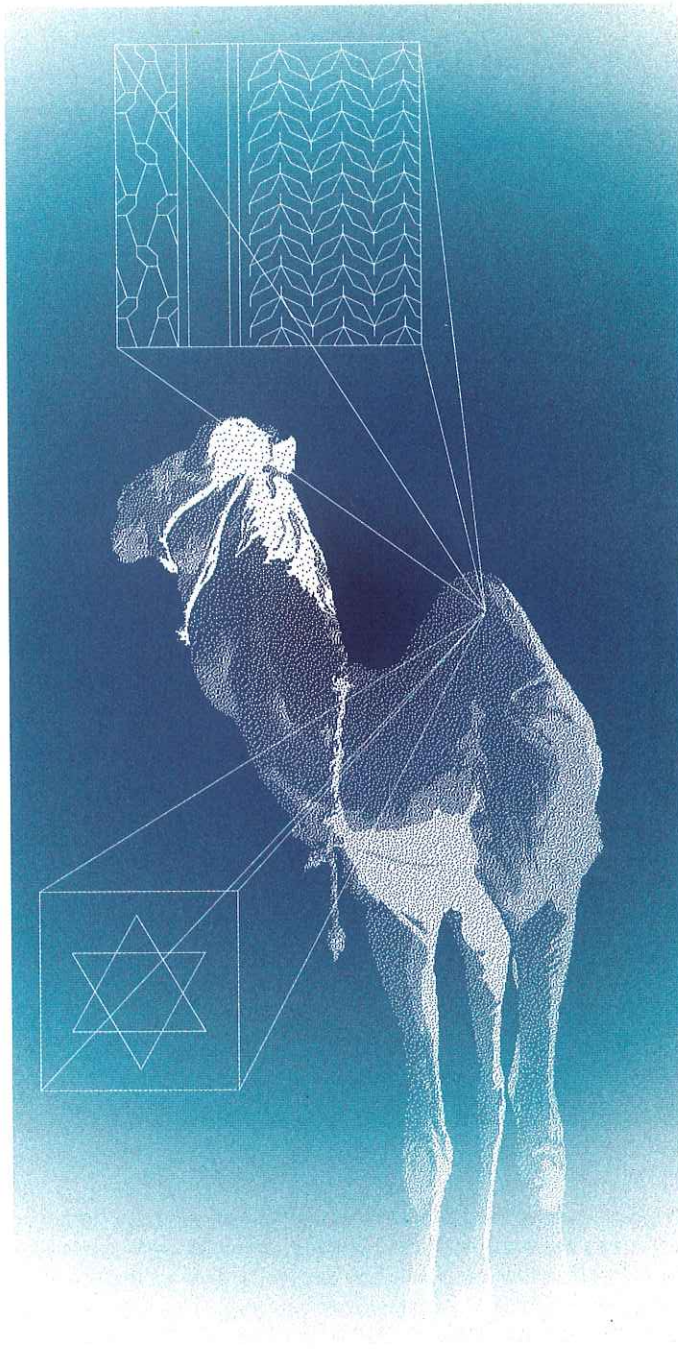
YEAR	PLACE	DESCRIPTION
1999-2000	Namibia	Dispute over border and access to water
1999-2000	Botswana	Dispute over the Zambezi-Chobe River presented to the International Court of Justice
1999	Kosovo	Contamination of water supply by Serbs disposing of corpses of Kosovar Albanians in local wells
1999	East Timor	Militia opposing East Timor independence kill pro-independence supporters and throw bodies in water well
1999	Puerto Rico	Protesters block water intake to Roosevelt Roads Navy Base in opposition to US military presence and Navy's use of the Blanco River, following chronic water shortages in nearby towns
1999	Angola	Around 100 bodies are found in four drinking-water wells in central Angola
1999	Yugoslavia	Belgrade reports that NATO planes are targeting a hydroelectric plant during Kosovo campaign
1999	Bangladesh	Fifty people are hurt during strikes called to protest power and water shortages
1999	Yugoslavia	NATO targets utilities and shuts down water supplies in Belgrade
1999	Yugoslavia	Yugoslavia refuses to clear war debris on Danube River unless financial aid for reconstruction is provided; European countries on Danube fear flooding due to winter ice dams. Diplomats decry environmental blackmail
1999	Kosovo	Serbian engineers shut down water system in Pristina prior to occupation by NATO
1999	Zambia	Terrorist bomb blast destroys the main water pipeline, cutting off water for the city of Lusaka (population: 3,000,000)

Source: Peter Gleick, Water Conflict Chronology: September 2000, Pacific Institute for Studies in Development, Environment and Security

Ramlösa, Evian, Aquafina, Bonaqua. 'Bottled water is the fastest-growing category in the beverage industry. It has become a substitute for tap water because of the general dissatisfaction with its taste and quality,' says Gary Hemphill, senior VP for the Beverage Marketing Corporation, who adds that, within the next three years, water will be the second most popular drink in the US. And the marketing campaigns are only just beginning: at a polo match in the Hamptons last June, a Norwegian company launched the world's first luxury artesian-well water, Voss, at £2.50 for a sleek, 375ml glass bottle designed by Neil Kraft of Calvin Klein and Ralph Lauren.

TREND-SETTING niche marketing aside, water really got its biggest PR boost in 1992 with a water conference in Dublin and then the Earth Summit in Rio that same year. These forums spawned not one, but two international bodies in 1996 – the World Water Council in Marseille and the Global Water Partnership in Stockholm, which are working together to implement a 'world water vision' for 2025.

So how will this vision ensure water security for everyone? As the Green Revolution boosted crop yields in the 1960s and 1970s, so too does a 'Blue Revolution' now need to increase water productivity. For



starters, the world water vision sees agricultural output increasing by 40 per cent – through better farming and irrigation techniques and biotech breakthroughs that yield 'more crop per drop' – to feed an extra 2.5 billion people with only 9 per cent more water. Desalination plants, fog collectors and bag-and-drag technology (tugboats towing enormous, ocean-going sacks of freshwater) are solutions for some chronically arid regions. Annual investments of \$180bn will also need to be made to fix all the world's leaky pipes and construct new waterworks. This cost will be offset by one of the more controversial recommendations of the WWC: full-cost pricing of water, meaning you pay for every drop you use. 'Free water leads to wasted water,' the commission concluded. 'When water is metered, consumption drops.'

Making people pay for water (traditionally seen as 'God's gift'), promoting GM crops to harvest more food and abating agricultural pollution won't be election-winning policies anytime soon, especially among fiery farmers. We'll probably need a few 'water shocks' (think the 1970s Oil Crisis), a conflict or two and apocalyptic footage of draughts in Europe on CNN before we act on all these dire forecasts. It's the same old story about human nature: you can lead a horse to water, but you can't make it drink. Unless, of course, it's dying of thirst. ✨