

Water is life

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Human activity is polluting water in the oceans, rivers, aquifers and lakes. In mid-February 2000 a cyanide spill from a gold mine in Northern Romania entered the river Tisza, a tributary of the Danube, destroying aquatic life for hundreds of miles down stream¹. Pollution and lack of water is also a problem in Asia. The Indus, one of the great rivers of Asia is heavily polluted. Many of the rivers in the Philippines are polluted with agricultural and human waste and mine tailings. The Pasig river which runs through Manila is little more than an open sewer.

More than 97 per cent of all the water on Earth is sea water. During the UNESCO proclaimed International Year of the Ocean, in 1998, it emerged that the oceans are being over-fished and polluted at an unprecedented rate. Important areas of the oceans, close to the continental shelf, are contaminated with human, agricultural, industrial and radioactive waste. Much of this is toxic and carcinogenic. Because we have tended to treat the oceans as sewers the Baltic, Mediterranean, Black, Caspian, Bering, Yellow and South China Sea have all been seriously damaged in recent decades. The waters of the Black Sea, once a flourishing eco-system, is now considered to be 90 per cent dead. Each year the Danube dumps an estimated 60,000 tons of phosphorus and 340,000 tons of inorganic nitrogen into its waters. It has little chance of being flushed clean since it takes 167 years for the water from the Danube delta to reach the Mediterranean, and much longer to reach the Atlantic. By the mid-1990s the Aral Sea has diminished by one half compared to what it was in 1960. What remains is now heavily polluted with agricultural chemicals. The Amu Darya and Syr Darya that used to flow into the sea were diverted to irrigate the cotton fields of Uzbekistan. Wind storms blow the toxic sand from the exposed seabed on to villages, contaminating crops and exposing humans and animals to the poison. Destroying rivers was not the sole prerogative

of communist regimes. The dams on the Columbia river and its tributaries in the 1930s and 1940s destroyed one of the richest salmon rivers in the world.

Depleting the oceans

On another front over-fishing is depleting the oceans and leaving them barren. Many people felt that the oceans are so vast and the variety of fish so abundant that there would always be quantities of fish in the sea. We are now learning how false those assumptions were. According to a report by the UN Food and Agricultural Organisation (FAO) in 1995 over 70 per cent of the world's marine fish stocks are either 'fully-to-heavily exploited, overexploited, or slowly recovering'². The depletion is most notable in many of the world's most productive fishing grounds. These include the Grand Bank of Canada and New England. Cod fishing has collapsed in the North Sea.

Most of the damage to the oceans was done in the last century. Fish catches increased from three tonnes at the beginning of the 20th century to almost 90 million tonnes in 1989. Most of the increases happened after World War Two when sonar and radar tracking technology, which had been developed for military purposes, was now used to locate and catch fish. Furthermore, super-trawlers the size of a football field were built to accommodate nets thousands of feet long. In a single netting these boats can take up to 400 tons.

As a direct result of overfishing the oceans' fish catches peaked in 1989. By 1998 they were down over 30 per cent despite improved gear, tracking and snaring technology. Daniel Pauly, the author of a new study on global fishing trends, predicts that 'if things go unchecked, we might end up with a marine junkyard dominated by plankton'³. Dishonesty and corruption are rife. Between 1986 and 1992 more than six times the quota for cod, flounder and redfish were taken from the Grand Bank off the Canada coast. When Spanish ships were boarded by Canadian police in 1995, the Canadians found two sets of books on board. One recorded the true tonnage of the

catch for the owners. The second set of books – with false, reduced figures – were meant for the authorities if the ships were challenged.

It is essential that human beings begin to recognize that the destruction of the oceans impoverish the planet for all future generations. The main losers in the human community are 200 million small scale fishermen in Third World countries. These have lived for generations off the catches they have made around their native shores. Fish has also helped to feed these communities and has often provided the main source of food, especially protein.

The oceans in the Bible

Because the Israelites were not seafaring people like the Phoenicians or the Vikings the oceans get very little attention in the Bible. The fearsome nature of the ocean and the dangers facing seafarers riding in fragile boats is emphasised. 'He spoke and raised a gale, lashing up towering waves. Flung to the sky, then plunged to the depths, they lost their nerve in the ordeal, staggering like drunkards with all their seamanship adrift' (*Psalms 107.25-27*). Jonah's trip from Joppa to Tarshish, the lone sea journey in the Old Testament, reinforces this negative image of the sea as a dangerous place, possibly not far from the gates of the underworld (*Jonah 2.7*). Even in the New Testament the sea is presented as a dangerous place. The demons that terrorised the Gerasene demoniac beseeched Jesus to allow them to enter the swine who then 'charge over the cliff into the lake, and there they were drowned' (*Mark 5.13*).

There is, of course, a more positive approach to the oceans in the Bible. The oceans are created by God (*Genesis 1.9-10*). Because they are God's creatures the Psalmist invites the 'oceans and all that move in them' to praise God (*Psalms 69.34*). We find the same theme in the Song of the Three Young Men 'seas and rivers! Bless the Lord' (*Daniel 3.78*). As Christians living in a world where the oceans are under threat from human activity we need to develop this positive strand in the biblical teaching in order to shape a positive theology of the oceans which will help us to protect the seas in our modern world.

Problems with groundwater

In recent decades humans have been depleting and polluting groundwater at an unprecedented scale. Until very recently humans relied mainly on streams, rivers and lakes for their water needs. Except in particularly arid places they did not have to pump water from the ground. Now we are doing that at an alarming rate forgetting 'that the average recycling period for ground water is 1,400 years as opposed to only 20 days for river water'⁴. Groundwater is now the major source of water for over 1.5 billion people in both First and Third World countries. The demands on ground water from agriculture have also increased in California and the Southern Great Plains of the United States. In India 'the number of tubewells used to draw groundwater have surged from 3,000 in 1960 to 6 million in 1990'.⁵ Industry has also led to groundwater depletion in recent years. In most continents aquifers are being drawn down much faster than they are being refilled.

Because groundwater takes so long to recycle, polluting it, is much more serious than polluting rivers. Heavy rains can flush out rivers whereas it will take generations to clean up aquifers. Right around the world humans have polluted groundwater with a variety of chemicals from industry and agriculture. Organochlorines like DDT are still contaminating groundwater in the US 30 years after the pesticide has been banned. Organic waste from sewage and animal waste is also a huge problem. It is often forgotten that in a country like the US for example farm animals produce 130 times more waste than the entire human population. Much of this ends up in streams and rivers and some seeps into the ground water. The level of nitrates in groundwater has also increased in recent years⁶. High concentrations of nitrates in drinking water can cause infant methemoglobinemia or the blue-baby syndrome. Seepage of petroleum from underground storage tanks at both filling stations and homes is also causing concern. Some of the chemicals involved are known to cause cancer. Industry, globally, is also to blame by allowing heavy metals, solvents and radioactive material to leak into aquifers.

The chemical experiment

Unfortunately the 'full consequences of today's chemical-dependent and waste-producing economies may not become apparent for another generation'⁷. In December 1999, Dr. John Peterson of the W Alton Jones Foundation in the United States told a conference of scientists in Japan that 'a hundred or more novel chemicals are swilling around in our bloodstream, chemicals which, before this century, were not found in human beings. It makes all of us, as well as our children and grandchildren, a walking experiment – one with completely unknown results'⁸.

Some of these chemicals disrupt the endocrine system and as a consequence affect all aspects of human and other animal development from the embryo onwards. Because the chemical and pharmaceutical industries are so central to modern economies, governments have been slow to investigate, regulate and ban these substances. Scientists and NGOs like Friends of the Earth are worried about the long term consequence of these chemicals and have demanded that substances that are suspected to act as endocrine blockers and that accumulate in the human tissue should be banned.

Fresh water

World wide the demand for water is doubling every 21 years. Supply cannot keep pace with demand as populations soar and cities explode. At present the global population is over 6 billion. This is expected to rise to eight or nine billion by the year 2025. Access to clean water is also not equitable. While rich people around the world can afford the luxury of fresh-water swimming pools, poor women in the Third World have to walk miles to fetch water for their basic family needs. Today the water situation in the Middle East and North Africa is precarious. North Eastern China, Western and Southern India, Pakistan, much of South America and countries in Central America like Mexico face water scarcity. Somewhere in the region of 260 rivers flow through two countries or more. Only a handful of these countries have signed treaties regulating their respective access to the water⁹. As a result competition between adjacent countries for

access to water resources is causing friction which could lead to outright hostilities in the future. For example, Egypt and Ethiopia seem to be on collision course over access to the waters of the Nile. The river originates in Ethiopia. Until recently the Ethiopians used only a small fraction of the river's water. They are now building small dams. The Egyptians fear that this will effect the water supply to their farmers. It is no wonder that Ismail Serageldin, The World Bank's Vice President for environmentally, sustainable development, is on record as stating that 'many of the wars of this century (20th) were about oil, but wars in the next century (21st) will be over water'.

Water in Britain

Problems with water and rivers are not confined to the Third World. Over 4,000 rivers in Britain are polluted. During the 1960s and 1970s a lot of attention was devoted to improving the quality of water in Britain's rivers and canals. Improvement programmes came to a standstill during the 1980s. As a result, according to the National Rivers Authority (NRA), the levels of industrial and agricultural pollution in many important rivers increased dramatically. An EU report on water in Europe conducted in 1998 found that Britain has more cities and towns dumping raw sewage into the sea than any other country in the European Union. Among the 11 towns and cities are Torbay, Hastings, Hull, and Dundee. The sewage treatment in other major cities like Edinburgh, Glasgow and Liverpool is considered to be inadequate. The EU has threatened to bring the British government to the European Court of Justice where it could be forced to pay a sizeable fine unless it cleans up its act quickly. British officials claim that improvements have taken place since then¹⁰. The Mersey, once considered one of the most polluted rivers in the world, has still not been fully cleaned up despite efforts in recent years to treat the raw sewage that used to be discharged into the river. However there are hopeful signs. In 1976, 77 tonnes of mercury was flushed into the estuary. By 1989 this had fallen to 4 tonnes. Finally, everyone draws some comfort from the efforts that have been made in recent decades to clean up the Thames.

Water in Ireland

Anyone who lives here knows that Ireland is blessed with a plentiful supply of rain. While the level of pollution in Ireland has not reached that of Eastern Europe there is no room for complacency. An editorial in *The Irish Times* (March 14, 2000) stated that 'Ireland's rivers have gone, in little more than a generation, from being almost pristine pure and clear to overblown imitations of open sewers and chemical drains'. The editorial was in response to a report published by the 'Three Rivers Project' which chronicles the decline in water quality in the Liffey, the Boyne and the Suir. The quality of water in many Irish rivers and lakes has clearly deteriorated in recent decades. Fish kills, unfortunately, still happen each summer. This is due to the increased levels of phosphorus entering our rivers from a variety of sources, including sewage treatment plants, factories and farms. The subsequent algal bloom depletes the supply of oxygen and kills the fish.

Water conservation must become a way of life, especially for those of us living in First World countries. Many suggestions have been made on how to cut down on water used. These include using low-flush, more efficient toilets to installing water-saving nozzles on showers and employing water in a more targeted and sparing way in agriculture. All of these options must be explored and we must continue to put pressure on local and national governments to introduce policies that will reduce pollution from animal, human and industrial sources.

Water in the Christian Churches

In the Christian Churches the different symbolic functions of water are highlighted in the blessing of the baptismal water in the Catholic Rite of Baptism. At the very beginning of creation 'your Spirit breathed on the waters, making them the wellspring of all holiness.' 'The waters of the great flood you made a sign of the waters of Baptism, that make an end of sin and a new beginning of goodness.' Water is also a sign of liberation 'through the waters of the Red Sea you led Israel out of slavery, to be an image of God's holy people, set

free from sin by baptism.' Christ's own baptism in the Jordan is linked to his mission to bring about justice and peace for all. 'In the waters of the Jordan your Son was baptised by John and anointed by the Spirit.' Father Killian McDonnell writes about the cosmic dimension of the baptism of Jesus. He recalls the picture described by Gregory Nazianzus who has Jesus 'carrying the cosmos with him as he ascends out of the water of the Jordan'. He goes on to argue that 'the cosmic dimensions of the baptism of Jesus are part of antiquity's broader conviction, rooted in incarnation and resurrection, that the material universe, as the home of a redeemed humanity, is destined for transfiguration through the power of the Spirit manifested in the risen body of Christ.'

McDonnell is very aware that 'the unity between creation and the cosmos and their common destiny raises questions about pollution, the depletion of the ozone layer, the waste of natural resources, the denuding of our forests, the contamination of our rivers, the release of harmful agents into the air.' He goes on to argue that the ecological movement should have as its goal not only the preservation and restoration of the natural environment because we live and die here. Creation should be worthy of its vocation to praise. 'Praise him, sun and moon... Praise the Lord ... mountains and all hills, fruit trees and all cedars! Wild animals and all cattle, creeping things and flying birds.' (*Psalm 148*). The cosmos lives in hope. The Universe is destined for God and for transformation. As the cosmos has a true historical past with God, which is part of 'anamnesis,' the cosmos also has a real future in God.

Water was important in Jesus's teaching mission. The incident with the Samaritan woman at the well in St John's Gospel afforded Jesus the opportunity to present his life-giving message for all people. 'Whoever drinks this water will thirst again; but anyone who drinks the water that I shall give will never be thirsty again: The water I shall give will turn into a spring inside him/her, welling up to eternal life.' (*John 4.14*). Baptizing with water was to be a sign of entry into the Christian community. 'After his resurrection he told his disciples:

go out and teach all nations, baptising them in the name of the Father and the Son and the Holy Spirit.' (*Matthew 28.19*) In a world where water is being polluted and abused one could argue that the symbolic connection between living water and the power of the Holy Spirit to incorporate those who are baptized into the Body of Christ is being compromised in a significant way.

Water is important even at the end of time. When reconciliation and restoration takes place in the New Jerusalem, living, clear and clean water will be abundant and sweet. 'Then the angel showed me the river of life, rising from the throne of God and of the Lamb, and flowing crystal-clear down the middle of the city street'. (*Revelation 22.1*).

Water is life. All the creatures in our world emerged from a watery environment and we carry around this water with us in our bodies. Human beings are almost 70 per cent water. If we continue to abuse and poison water then humans and all other forms of life will be adversely affected.

Caring for water globally and locally is a major ethical and religious challenge for Christians today. There is an onus on each local Christian community to ensure that the water they use for baptism is really 'living water' with the ability to carry all the symbolic dimensions highlighted and not merely industrial water or H₂O. We need to respect water as Jesus did and do all in our power to ensure that it remains living water and continues to be a source of life for all creation.

Notes

- 1 Juliette Terzieff 'Romania counts the cost of cyanide river disaster', *The Sunday Times*, 20 February, 2000, p.27
- 2 Don Hinrichsen 'The Ocean Planet', *People and Planet*, 1998
- 3 Originally published in *Science*, February 1998 and quoted in Peter Mongatuge, 'Oceans without Fish', *Third World Resurgence*, April 1998
- 4 Payal Sampat, 'Groundwater Shock' *Worldwatch*, January/February 2001

- 5 *ibid*
- 6 *ibid*
- 7 *ibid*
- 8 Paul Brown, 'Contamination – gender-bender chemicals are now inside all of us' *The Guardian* 12 January, 2000, Supplement
- 9 Dr William Reville 'Water, water everywhere – but not for everyone', *The Irish Times*, 15 May, 2000
- 10 Osborn, Andrew and Ward, David, 'Britain's towns top European pollution poll', *The Guardian*, 20 March, 2001

About the author

Father Sean McDonagh SSC is currently the Researcher for Justice, Peace and ecology for the Columban Society worldwide. After studies at the Catholic University and Georgetown University in Washington, he worked for many years at Mindanao, Philippines among the T'boli people where he became involved in environmental campaigns to protect what remains of the tropical forest in Mindanao. He is the author of a number of books including '*To Care for the Earth*', '*The Greening of the Church*', '*Passion for the Earth*', '*Greening the Christian Millennium*' and is a frequent contributor to journals such as '*The Tablet*' and '*Doctrine & Life*'.