

The ethical sustainable use of water

We welcome the newest member of the Commission for the Environment with this column. **Nick Hutchins** has joined the Commission from the Diocese of Riverina, where he works as an agricultural consultant.



SHRINKING RESOURCE: Goulburn's Pejar Dam, still with only 20% usable capacity despite recent rains, graphically illustrates the importance of efficient water use in a dry continent. Agricultural consultant Nick Hutchins argues that modern technology can not only reduce water needs for irrigation, but can also lead to increased productivity.

"In the beginning, God created the heavens and the earth. The earth was without form and void and darkness was over the face of the deep. And the spirit of God was hovering over the face of the waters." (Gen 1:1&2).

"And God said, 'Let there be an expanse in the midst of the waters, and let it separate the waters from the waters.' And God made the expanse in the midst of the waters and separated the waters that were under the expanse from the waters that were above the expanse. And it was so." (Gen 1: 6&7).

So water was God's building block for creation itself.

That water is necessary for the existence of plants, animals and all living things on earth is axiomatic. It is the most important commodity on earth. We can live for a considerable time without food, but will only survive a few days without water. Water is also a major source of fun and recreational activities; it is a source of enjoyment and food.

We abuse our waterways; we allow sewage and other effluent to flow into them, often with inadequate treatment. We throw rubbish into the water and it disappears out of sight and out of mind.

God gave us water to use, not to abuse. It is there to meet our every day needs and for our enjoyment, we should revere water as the lifeblood of our society.

What must we do?

We must recognise that water along with soil are our most precious resources.

Without water we have no food, no drink and no life. We must do everything we can to preserve the health of our waterways. The solutions are not straightforward. We must set priorities and be conservation minded in our use of water. We must ask ourselves, is it:

- ◆ Environmentally responsible?
- ◆ The best use of a scarce resource?

It behoves us all to have a critical look at our water use and decide for ourselves if we are responsible water users. I like fresh vegetables and consider that

to be a responsible use of water. I like a beautiful garden, but is that selfish? All the evidence is that God provided us with a beautiful world and a beautiful environment, anything that contributes to that beauty is in accordance with God's will, but does that include:

- ◆ Growing water-hungry plants that are exotic to our environment?
- ◆ Maintaining a larger garden than is reasonable?
- ◆ Growing water-efficient exotic plants such as cacti, date palms, etc which may and often do become invasive in our bushland?

All these are difficult questions. They are intended to make you think, not to be prescriptive. So what in principle is beneficial to humanity? I suggest the following questions as guidelines: -

- ◆ Does it contribute to God's purpose?
- ◆ Does it contribute to the well-being of society?
- ◆ Our priorities must surely be:
 - ◆ Provide for essential human needs, such as high quality potable water.
 - ◆ High quality nutritious, healthy food etc.
 - ◆ Protection and enhancement of the environment.

Difficult to reconcile? Yes but we must prayerfully and rationally make a decision as individuals.

The result

I suggest that the priorities are, the use of water to the en-

hancement of:

- ◆ The environment in all its aspects, beauty, bio-diversity, healthy waterways, productive lands, healthy soils, healthy forests, healthy rangelands etc.
- ◆ Human wellbeing, be it recreational, nutritional, spiritual, economic, and the support of vibrant and progressive communities.

How do we achieve this?

There are many competing influences.

- ◆ The green movement will have you believe that the forests and the need for pristine waters are paramount.
- ◆ The rural communities will tell you that employment and prosperity of their communities are important. We should not forget the human element.
- ◆ If we overexploit our resources of soil, water, forests, fisheries etc the communities will suffer and probably disappear in the long run.

We have to strike a balance, we cannot pursue our individual passions to exclusion of other interests, and importantly we must continually review our decisions to ensure that we are maintaining the balance.

A few facts

- ◆ 50% of the profit from agricultural comes from 0.5% of land (*National Water Resource Audit*). This production is from irrigated agriculture.

- ◆ 80% of extracted water is used for irrigation.

Agriculture is the major user of water, should water used for irrigation be diverted to relieve the overstretched water supply for Sydney and Goulburn? Unfortunately the water could not be physically delivered to them.

The world's population has to be fed, but if this is to be achieved the additional food has to come from irrigated agriculture. We cannot push agriculture into more marginal country without causing massive environmental damage in the form of soil and vegetative degradation. Some of you will ask; what about salinisation and land degradation caused by irrigation?

Poor irrigation management can and does cause salinisation and land degradation, but modern technology and efficient management can reduce water use and increase the efficiency of irrigated agriculture.

I will give you an example. Last April I was asked to inspect a maize crop in Boort, Victoria, which was stated to be very high yielding. I checked the yield, which was approximately 20.5 tonnes/ha with a water use of about 7.25 ML/ha including effective rainfall.

This is an Australian record and represents a production of 2.82 tonnes/ML of water or 28.2 kg/mm of water. This compares with a maximum of 20 kg/mm and an average of 15 kg/mm/ha of water for wheat and a maximum 1 kg/mm/ha and an average of 0.75 kg/mm/ha of water for rice. This was achieved by optimising the use of technology.

Naturally there were other factors involved such as soil and climate, but technology was the main factor. Good management and the use of technology can and does prevent the adverse effects of irrigation.

More facts

It takes:

- ◆ 4,657 litres (L) of water to produce 227 grams of beef steak
- ◆ 1247L to produce 227 grams of chicken.
- ◆ 238L to produce 1 egg.
- ◆ 60L to produce 28 gm of brown rice
- ◆ 11L to produce 1 cup of lettuce.
- ◆ 30L to produce 122 gm of tomatoes.
- ◆ 42L to produce 1 slice of white bread.
- ◆ 42L to produce 77 gm of fresh broccoli.
- ◆ 60L to produce 130 gm of oranges.
- ◆ 136L to produce 57 gm of pasta.

(Source: *Water Education Foundation of California*)

These figures are indicative and will vary with location and circumstances.

The above figures suggest that we may be able to modify our diet to the benefit of our health and the environment. If we also eliminate water waste, cut out unnecessary runoff into our waterways, improve our water recycling, we will go a long way to solving our water quality and shortage problem.

We all have our part to play; will you play your part?