# Water Management

Because water is such a vital resource it is important to learn how to harvest, filter and reuse water to best effect. To do this we need to rethink our attitude to water and redesign our homes and cities to maximise the use of:

- Development and landscaping on contour (to catch water as it runs down the hill and can create moist conditions even in arid areas)
- Terracing (to fully utilise water on steep slopes)
- Soil storage (by increasing the water holding capacity of the soil through building structure with organic matter)
- Small ponds, dams (ponds and dams double as habitat for fish, ducks and frogs, can be used for aqua-culture or to grow azolla and other nutrient rich plants for mulch)
- Rain water tanks (provide high quality water)
- Mulching (decreases evaporation and improves soil structure)
- Water channelling (to divert water to where it is needed)
- Trees (to decrease evaporation, increase condensation, draw up water with their deep roots and can also 'seed clouds')
- Filtration using water plants and reeds
- Grey water systems (these can be simple or complex)
- Windbreaks (decrease evaporation and draw water from deep down)

Storing water in as many different forms as you can is important. This way you will get as many different uses from your water as possible. For example, a large proportion in ponds and troughs, rather than the whole lot in sealed tanks, will serve you better by providing habitat for insect eating birds, frogs and lizards. Ideally 15% of your total space should be dedicated to water storage.

The water holding capacity of the soil is directly connected to the amount of organic matter in it. Healthy, living soil with good structure and deep root penetration holds water like a sponge. With surface mulch, evaporation is reduced and water in the soil is available to plants over a long period.

By slowing the flow of water and filtering it through suitable vegetation and soils, you can reduce erosion and pollution in the rivers. This is called bio-filtration and is an essential aspect of water sensitive urban design on both the site and precinct scale.

You can also reduce water usage by developing surface or sub-surface drip lines and using household grey water safely and sustainably. Learn to use water as many times as possible before it leaves your property and try to ensure that it leaves in a drinkable condition. This will take some practice!