Land & Water fact sheet

Sustainable land management

What is it?

Sustainable land management ensures your land is still productive in years to come. Land management in this context refers to managing the soil, vegetation and water assets of your property as they are all interlinked.

As a land manager, your basic obligations are to meet your legislative requirements, preserve and enhance your assets (land) to ensure viability of your business and industry. However, preserving natural resources can benefit the wider community maintaining productivity on your own farm.

There are a number of elements that contribute to sustainable land management. These are:

- managing salinity and sodicity
- vegetation management
- water use efficiency
- soil health
- managing erosion.

The key to sustainable land management is identifying potential problems before they become difficult and expensive to repair. As they say, prevention is better than cure.

How does this help me?

The benefits of adopting an integrated land management system are healthier land and waterways and long term and sustainability for you in the horticultural industry.

The fewer inputs you rely on to run at a profit the better off you will be financially. Effective pre-emptive management of vegetation issues, potential salinity and erosion problems is beneficial for your farm's health and will also improve the quality of the water that leaves your farm. A Farm Management System (FMS) or other risk based approach can help you identify potential problems and ways of dealing with them. The use of a monitoring and information management system could assist you in some of your decision making.

Managing salinity

There are two forms of salinity: primary and secondary. Primary salinity refers to the naturally occurring salts in the ground water table while as secondary salinity is caused as a result of human activity. Secondary salinity is a major problem across much of Australia.

The removal of vegetation from the land has resulted in the ground water table rising in many places. Consequently the salts in the earth have risen to the surface. Salinity can have devastating effects on crops, waterways and the land.

To reduce the effects of salinity on your crop, either avoid salty irrigation water if possible or mix salty water with fresh water during irrigation or practise crop rotation with more salt tolerant crops. An evenly distributed irrigation system will prevent excess water and salt being added to the soil. For further information on salinity and how to deal with saline ground water, refer to the Water for Profit fact sheet – Managing irrigation salinity.

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On-farm eco-efficiency measures continued

Irrigation sodicity

This may be a bigger problem than salinity, as approximately one third of all land in Australia, including horticultural/agricultural land is affected by sodicity. Sodicity refers to an excess amount of sodium in the soil. Poor water infiltration, surface crusting, erosion and water logging are all associated with sodic soils. These soils do not bind well and these conditions are not ideal for plant growth. Gypsum can help alleviate these problems however this may only be beneficial in the short term.

Preventing erosion

Erosion through both water and wind means loss of topsoil, nutrients and organic matter. Application of fertilisers to replace nutrients such as nitrogen, potassium and phosphorus adds more to your production costs. A better approach is to prevent the problem before it occurs. Ground covers such as grass, green manure (cover crops), organic or plastic mulch are useful in helping to reduce the impact of wind and water on soil erosion between crops. Ground covers can provide good mulch when ploughed into the soil, to increase the organic matter content of the soil. Planting trees around the perimeter of the property or individual paddocks reduces the speed of the wind and lessens soil erosion. These options are far less costly than trying to restore fertility through the addition of fertilisers.

Organic matter in the soil

Vegetation is vital for keeping the soil together by stopping wind and water erosion. The decomposition of vegetation also returns nutrients and carbon to the soil. Organic matter helps bind the soil to reduce erosion and create greater crop stability.

Protecting water courses

The quality of the water leaving your farm will depend on what practices you put into place on your land. To keep waterways healthy, riparian and stream bank vegetation need to be protected and maintained so they can naturally create a barrier to stop eroding soil entering the creeks and rivers. If you are using these waterways for your pumping operations good water quality will prevent clogging of your equipment. Proper farm planning can incorporate the most appropriate ways to deal with water run off across your farm.

Intact riparian vegetation can also reduce the amount of fertilisers and pesticides entering the river by providing a natural filter of soil to pass through.

To find out more about Farm Management Systems contact Growcom on 07 3620 3863 or visit www.growcom.com.au/knowledgeplant

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