North Otago Sustainable Land Management Group: Assisting the North Otago community to move towards the goal of sustainable land use

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Abstract

The North Otago area has a climate that often fluctuates from severe drought to flood in a short space of time. The climatic extremes, and some unsustainable land use practices can put the area's fragile loessial soils at risk of water and wind erosion. This paper outlines an approach used in North Otago which has enabled the community to identify its sustainability and environmental issues and begin to make changes to land use and farmer attitudes. A group of key farmers was brought together to oversee the preparation of Sustainable Land Management Guidelines for the downlands. (This group became the North Otago Sustainable Land Management Group – NOSLaM Group.) From this grew a wide-ranging community-driven project with a full-time co-ordinator, and a vision to have most land users adopting sustainable farming systems. This should ensure the area is ready to meet the world market demands for environmental quality in food and fibre production. The Group will promote individual environmental farm plans which will have a monitoring component. Some farmers will work towards some form of property accreditation such as ISO 14001. This pilot project will be highlighting the economic benefits of environmentally sound farming methods, through seminars, field-days, newsletters and a demonstration farm. The Group is working in partnership with farmers, the processing industry and marketing people to identify market opportunities for the area's food and fibre produced by environmentally friendly farming systems.

Keywords: cultivation, environment, Environmental Farm Plans, erosion, guidelines, ISO 14001 accreditation, market opportunities, monitoring, sustainable land use, sustainability

Introduction

North Otago is a challenging and diversified place to farm. I own a dairy farm, while my neighbours run Merino sheep, bull beef, some produce crossbred prime lamb and others grow barley crops.

Climatic extremes mean that pasture growth can go from 14 000 kg dry matter (DM) per ha to only 3000 kg DM/ha from one year to the next. Dry years were the norm in the 1960s and the 1980s. Floods occur regularly every 2 to 3 years and several can occur in any one year. Farmers, farming systems and pastures have to be very adaptable to cope with the extremes that are the norm here.

Erosion and movement of soil is one of the most serious sustainability challenges here.

The erosion types are:

- **Rill erosion**, where rain washes the soil off cultivated sloping ground. Soil losses of up to 250 tonne/ha are not uncommon.
- **Flood erosion**, where soil is stripped off cultivated, flood-prone paddocks. Losses of up to 1500 tonne/ha have been recorded.
- **Wind erosion**, brought about during long dry periods with our dry, north- and south-westerly winds.
- Old time methods of continually **ploughing soil downhill** so that we now have soil one metre deep at the bottom of the hill and only 50 mm at the top.
- **Tunnel gully erosion**, whereby water enters the underlying loess silt, dissolving it away, putting silty sediment into rivers, and leaving holes for stock to get stuck in.

In late 1994 the Otago Regional Council (ORC) brought together a group of seven farmers and several technical people from ORC and MAF Policy to prepare some soil management guidelines for the downlands. The purpose of this process was to address the area's erosion and other environmental issues in a new way.

We were all well qualified, having intensively cropped the country through the 1960s and 1970s and had seen paddocks lost to erosion over the years.

Initially we were somewhat sceptical and suspicious, thinking the ORC was using us to rubber stamp some regulatory controls on what we could and could not do. However, the ORC insisted from the outset that farmers would determine what was in the guidelines and that they would be driven from the grassroots level.

Methods

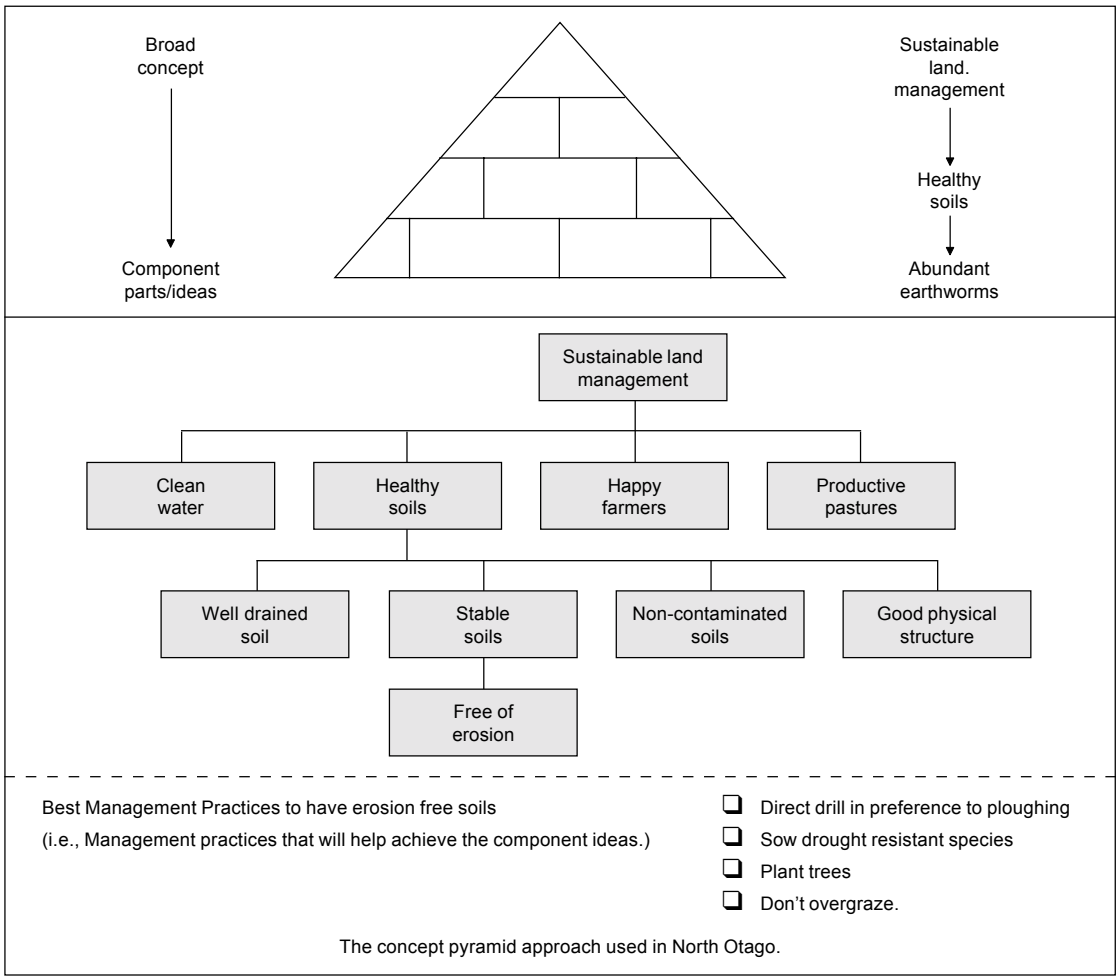
Because we wanted this project to be owned and driven by the community, it was essential to get a wide cross-section of the community to identify their environmental and sustainability concerns, as well as involving them in the whole process. To allow this to happen, the Group used the concept pyramid system developed by Terry Parminter of AgResearch, Whatawhata.

The **Concept Pyramid** approach was used at a series of six workshops. This system enabled the participants to define what a complex topic like 'sustainable agriculture' actually meant in this area. The process broke the sustainability topic down into increasingly simple components so that the ideas were small enough to prepare specific management guidelines (Best Management Practices).

Drawing up land management guidelines

Armed with the sustainability issue information from the workshops, the Group set about writing practical management guidelines (Best Management Practices), which dealt with each topic. We commissioned experts to write sections where the Group lacked information. The Guidelines document quickly grew from what was initially envisaged to be a 10-page document to something that was over 100 pages, in ringbinder format incorporating the following main topics:

- soils (structure, organic matter, nutrients, residues, management guidelines)
- erosion (types and control guidelines)
- direct drilling (these are very comprehensive and practical guidelines based on much local experience)
- vegetation (pasture species and trees fact sheets)



The concept pyramid approach used in North Otago.

- farm wastes and chemicals (managing silage leachate, silage wrap, and agrichemicals)
- weeds and pests

The ORC played a major part in the development and funding of the Guidelines, along with MAF Policy, Monsanto and Ravensdown Fertiliser Co-op Ltd.

Life after guidelines?

NOSLaM Group was to disband after the guidelines were completed at the end of June 1995, but the Group unanimously decided to carry on. Being involved with the project opened our eyes to the enormous opportunity open to the North Otago community if it co-ordinates its activities on environmental issues and sustainable land management.

The Group realised that just producing a set of guidelines on its own was not enough. If we were serious about sustainability in our area, we would need to lead people into a new way of thinking.

We could see that if the farmers did not begin to deal with environmental issues such as soil structure breakdown, soil agrichemical contamination, pollution of aquifers and soil erosion, we could find our market access becoming severely restricted in the near future. As farmers, we do not want to have another issue such as DDT develop and catch us unaware.

NOSLaM project formulation

The Group realised that little would happen unless we had someone working full time on promoting the guidelines and working with marketing people. So Group applied to the Ministry for the Environment's (MfE) Sustainable Management fund to pay for the employment of a full time co-ordinator to work in our area.

The process of preparing the funding application to MfE was invaluable, as it made the Group clarify its **vision** and **goals**. The initial application was unsuccessful, but MfE suggested we reapply with a modified proposal. The Group sought professional help with its second application, the deal being that if we were unsuccessful there would be no consultancy fees payable. Fine tuning the proposal and writing the application with the right words made the second attempt successful. The project has received funding for 3 years from MfE, along with in-kind support from the ORC, MAF Policy and Waitaki District Council.

The Group's vision

- To have most land users in the area adopt environmentally friendly, sustainable land management systems.
- To have North Otago recognised for its contribution towards achieving sustainable land management nationally, and to be in a strong position to meet increasing market demands for environmental quality in food and fibre production.

Over the medium term the project seeks to bring about changes in land user attitudes and management practices, so the environment and the land's productive capacity is protected for future generations.

Key components of the NOSLaM project

- The appointment of a full time sustainability–environmental co-ordinator (appointed late May 1996)
- The co-ordinator will help land user families to prepare **environmental plans** for their properties, and work towards an environmental 'warrant of fitness' or an internationally recognised accreditation system (e.g., ISO 14001)
- A mix of other methods will be used to facilitate adoption of sustainable practices, e.g., high quality newsletters, field-days, seminars and a demonstration farm
- Encouraging land users to monitor their own natural resources (each environmental property plan will have its own monitoring component, e.g., soil, and water quality)
- Involving the whole community in the process, including iwi, business interests and environmental groups. This would be achieved through additional public workshops
- Processors, product marketers and financiers will be involved in order to try to find markets for the areas sustainably produced produce
- There will be an emphasis on the **economic benefits** of more sustainable land use to farmers, growers and financiers. Having the financial benefits of good environmental management clearly documented will ensure the momentum for change continues after the project is finished
- Funds have been allocated to enable the Group to share what is learnt with the rest of New Zealand. This will ensure that the project's benefits can be spread nationwide.

NOSLaM Group's recent activities

The Group has recently expanded its representation to include members from:

- Vegetable growers from around Oamaru (NOVsEG – North Otago Volcanic Soils Environmental Group)

- Dairy farmers on the Waitaki Plains (Waitaki Landcare)
- Kakanui Rangecare Group (this was an existing group).

The NOSLaM Group is now working with land users who control the management of the environment from the mountain tops of the Kakanui Range across the plains and downlands to the sea.

Each of the above groups is working on its own specific environmental projects and issues.

- Between January and July 1996 over 300 people have attended the Group's 10 seminars, workshops and field-days.
- Topics have included 'Knowing your Soils' field-days where farmers gained insights into how their soil works and learnt how to assess soil structure for themselves.
- Dairy effluent, farm waste disposal and ISO 14001 accreditation.

Heeding market signals for greener products and accreditation systems

All the market signals we are receiving point to the fact that customers want food which is safe to eat, and is produced with minimum impact on the environment. The BSE scare in the UK should be a object lesson to us as to how quickly market requirements can change within the global market place.

BSE has resulted in farm accreditation becoming almost mandatory in the UK in the space of just 6 months. These accreditation systems have had minimal support over the previous 5 years, but now food chains are requiring accreditation and tracability of products right back through the system to the farm where they were originally grown. One accreditation scheme in Scotland, which had only 1500 participants, has gone to 8000 in a matter of months. Farm accrediation will soon be in New Zealand. NOSLaM hopes to be taking a lead in the development of farm accreditation, so we are prepared for the inevitable.

We now have a unique opportunity to tidy up New Zealand's environmental performance. We could then capitalise on our "clean green" image and upgrade it to **being clean and green in practice as well as image**. Consumers could then be assured that what they buy from us meets food safety and environmental requirements because the produce is backed up by monitoring information and farm accreditation systems.

For too long we have assumed that doing the right thing by the environment will be less economic. Large companies are beginning to see how wrong this assumption is. Leif Johansson, the CEO of Electrolux, is one person who sees the economic benefits of a different approach. He said, **"Ecology and economics are the two sides of the same coin. This means we must strive for greener solutions for environmental reasons and because it is economically profitable and good for the Electrolux Group".**

If Electrolux thinks it is worthwhile financially to look after the environment, how much more should we farmers who are producing food off the land contribute?

NOSLaM Group intends to encourage farmers to look after their environment because this will ensure that the future productive capacity of farming businesses is maintained.

The process of developing individual environmental farm plans which can be ISO 14001 accredited should identify on-farm cost savings and efficiencies. Examples of this are savings on drench and fertiliser made possible by using more intensive monitoring. Meetings with processors and marketing people have been organised so that market opportunities can be identified and capitalised on.

Conclusions – Strengths of the NOSLaM approach

- The ORC was the catalyst for the whole process. It brought together key land owners and encouraged them to lead the sustainable land management promotion.
- Forming new groups that were focused specifically on environmental issues was probably more successful than trying to work through existing farming groups, which have a wider brief.
- Preparing the guidelines and funding applications required the Group to clearly define its **vision** and **goals**. This process was very beneficial.
- Seminars have given farmers access to scientists and researchers who have been previously cut off owing to the "user pays" requirements.
- Having local land owners running events has meant farmer attendance at field-days has been much better than if agencies had run them.
- Farmers accept other farmers' experiences more readily than information coming from scientists.
- ORC's provision of seeding finance and staff time was important to enable the group to get up and running, and actually produce some tangible results from the time Group members invested (e.g., successful field-days, and the Guidelines publication).
- Groups need some technical assistance to keep the project moving along. There needs to be someone to do the donkey work, find necessary information,

expertise, organise meetings and to carry out any writing jobs. (Farmers are busy people who don't like putting pen to paper!)

- The 10 farmer Group members have put into the project a total of over 800 hours of voluntary time for the 6 months since January 1996.
- The field-days and seminars have opened farmers' eyes to the importance of facing up to environmental issues. The process has given them the contacts, information and confidence to stand up and speak to their peers.
- A key feature of the whole project has been excellent co-operation between farmers, local authorities (ORC, WDC), scientists, consultants, commercial sponsors, and marketing organisations such as Tradenz.

Summary

We feel the process undertaken here is moving us in the right direction as we strive to improve our ecosystems and environment.

Farmers are the nation's greatest environmentalists, with their goal of leaving the land in a better state for the next generation. However, we must continually question our farming practices – in the 1960s it was good management to apply DDT, but in the 1990s those properties that did so are penalised.

The markets will determine at the end of the day what happens back on the farm. Right now the signals are saying our customers want food and fibre produced from sustainable farming systems, by responsible farmers caring for a wide range of issues (from the environment to animal welfare), and in such a way as to meet the social needs of the people in our communities.

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