

Federal Senate Inquiry into Managed Investment Schemes

Roderick Davies

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This submission relates to the establishment of large irrigated agribusinesses along the Murray River, particularly in western Victoria, by Managed Investment Schemes.

Press coverage has made the point that these developments may have been established inappropriately, in ways that focused too heavily on the short term rather than on long term sustainability.

This note looks at the need for high quality soil mapping data when planning large, long-life agricultural enterprises. The author presumes that the MIS schemes were established in line with government regulations as they relate to irrigation developments but looks to inform the enquiry that there are flaws in the prescribed practices. Practices that could be easily modified ensuring that all future irrigation developments, and large-scale enterprises in particular, have an improved chance of long-term viability.

The MIS schemes, because of their financial muscle created by the federal government's taxation rules, have had a dramatic effect in western Victoria. Not least in their impact on the water market and this impact looks likely to be profound into the future.

Without detailing specific examples the submission explains current practices and ongoing issues and invites the inquiry to look further into these matters so that past mistakes are not repeated.

The Murray Valley has been a target for the establishment of large agribusiness operations over the past decade. In almost all cases these operations were established by making new plantings (wine grapes, almonds, olives) and, although some were redevelopments of earlier irrigated enterprises, by and large they involved the development of dryland farmland or areas previously covered in native vegetation.

These operations are entirely dependent on water from the Murray Darling rivers and in all cases very large amount of 'new' water was purchased through the water market.

When these operations were being established it was recognised that the developments were capital intensive and that they represented a different approach to agriculture along the river.

This submission relates to developments on the Murray River, in western Victoria, where the author can claim some knowledge through work undertaken in South Australia in 2003 and 2004 for the South Australian government; specifically, as the developer of a significant upgrade of rules relating to the selection of sites for the establishment of irrigated agricultural enterprises.

The South Australian government were seeking to increase the efficiency and sustainability of irrigated agriculture along their part of the Murray River and began by looking at the basic resource all agriculture is dependent on, the soil. The SA government therefore evaluated the quality of soil mapping data that developers used during the site selection and then in the detailed planning of these developments.

My role was review the situation, as it was in 2003, and make recommendation that would improve the quality of soil surveying that forms the basis of irrigation developments and expansions.

I brought to this task 'fresh eyes' as this was my introduction to agribusiness, but considerable experience in natural resource management and natural systems having worked as a geologist in the mining industry for many years.

What I found was very surprising.

At a property management level there was great consensus that soil character dictates how plants perform during the season and from year to year. No surprises here, every gardener recognises this.

What was a surprise was that the process of establishing the soil characteristics of a site before the development occurred was flawed in a number of ways.

The mapping of soil characteristics is a well-established science and there are a number of highly qualified, experienced, soil survey professionals active in Australia. There are however a much larger number of established operators who are less knowledgeable, having no specific background training in the science of soils. In developing a scheme to improve the quality of soil information available to developers it therefore became apparent that a regulated body of 'Soil Survey Professionals' would be an effective first step in lifting standards across Australia.

This idea was received with enthusiasm by the highly qualified professionals but was received with suspicion by those less well trained, quite naturally. But real progress seemed possible amongst a core group of Soil Surveyors, based out of South Australia and NSW. *The enquiry, when considering the operational performance of the schemes along the Murray, should look into the quality of the basic data collected prior to these schemes issuing their financial projections that, because these projections relate to agricultural productivity, are directly related to soil properties.*

Soil Surveyors tend to be either independent contractors or members of small groups. All are in competition for work. It became obvious that the market for their services was not a level playing field in all parts of Australia. There was, and still is as far as I know, a curious anomaly in western Victoria, along the River Murray.

In the Sunraysia Irrigation District, the government rules state that you cannot get an irrigation license without first undertaking a soil assessment. These assessments had to be completed by a soil surveyor who had successfully completed an approved training course under the supervision of the approved soil surveyor. All good, except that in the case of Sunraysia the approved soil surveyor, although having considerable

experience as a practitioner, has limited formal soil science education. The Victoria government department responsible for overseeing irrigation development saw no reason to change its surveyor vetting procedure.

Of perhaps greater concern was a move by the CSIRO's Precision Viticulture group to promote the use of geophysics for soil mapping using a system for measuring soil conductivity. The method was being actively promoted by the CSIRO as an adjunct to the work of the soil surveyor and in most cases being suggested as a way of reducing the total cost of soil surveying by reducing the amount of surveyor time that was needed.

Soil conductivity relates to at least five (5) natural variables within the soil profile that vary independently. A typical soil survey targets each hectare with at least 1 soil pit but if there is local variability then the number of pits can increase. The CSIRO encourages the reduction in the number of pits providing the area has first been mapped using geophysics.

The problem is the soil geophysical map describes a single parameter that is controlled by 5 variables making such a map an unreliable representation of soil property over anything but a small area.

What is most problematic is the encouragement to reduce the amount of time the Soil Survey Professional should spend on the property during their assessment. This is best considered by looking at the cost of new irrigation development which is broken down as follows; \$2,500 per hectare to buy the land and \$22,000 to establish an irrigated vineyard. A Soil Survey Professional might recommend a single pit for each hectare and in 2004 the cost of assessing this pit was \$150, or 0.6% of the cost of establishment of the enterprise.

The area covered by the MIS developments would mean the total cost of single development would be in the \$10s millions of dollars; is it reasonable to spend such a low percentage of this development cost on collecting information about the key natural resource variable, the soil? Basic risk management dictates this is irresponsible. Established science overwhelming confirms what the farmer knows, soil is the key.

As soil is the key element on which the enterprise is based any encouragement to reduce the quality of the soil mapping should be avoided. *The enquiry, when considering the operational performance of the schemes along the Murray, should look into the quality of the basic data collected and specifically how much geophysics was undertaken and how effective this work has proven to be.*

It would be no surprise to hear that the process of establishing the very large irrigated operations in northwestern Victoria was flawed by poor site selection and inappropriate irrigation design resulting from low quality soil mapping.

These enterprises were established and then purchased considerable volumes of water, driving up the price of this precious commodity and therefore threatening the viability of entire communities.

Sustainable irrigation expansion should have started with a detailed Economic and Environmental Impact Study. Irrigation development (or redevelopment) should never be undertaken without first compiling high-quality, detailed soil mapping completed by suitably qualified and experienced professionals.