

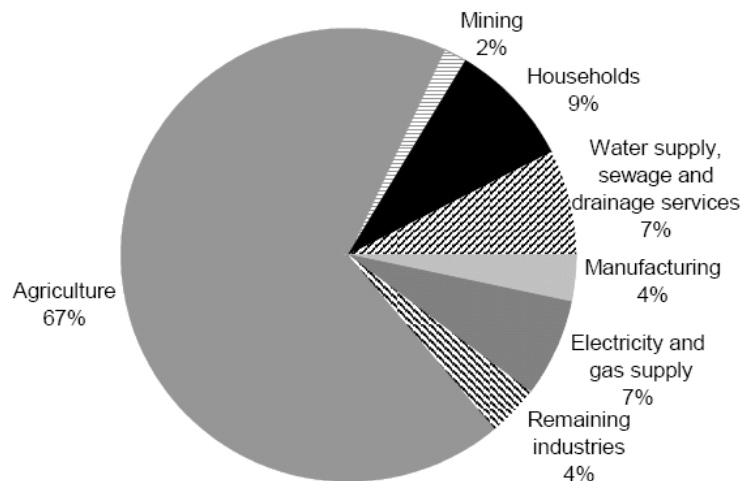
### Water, Water, Everywhere – An Operator’s Perspective

Community awareness of the scarcity and value of water has probably never been as high as it is in the first years of the 21<sup>st</sup> century. This awareness has been aided by years of drought, water restrictions in many capital cities and some rural areas, together with regular announcements by federal and state government. There are even nightly announcements on some TV news broadcasts of water storage capacity in percentage terms, making water the last thing many of us think of before we reach for something stronger to sip on.

The National Water Initiative (NWI) was agreed to and signed at the June 2004 meeting of the Council of Australian Governments (COAG). At this meeting, COAG “noted the imperative of increasing the productivity and efficiency of water use and the health of river and groundwater systems in Australia”. More recently, in March 2006, a research paper *Water and Australia’s future economic growth*<sup>1</sup> was released on the Federal Treasury website. The paper said:

*“... the fact that water resources are scarce means that water, like other limited inputs to economic production, needs to be used efficiently and allocated to its highest value uses in order to improve both economic and environmental outcomes”.*

**Chart: Water consumption**



**Source: “Water and Australia’s future economic growth”, Treasury, March 2006**

The Treasury paper used 2004 ABS data on consumption and gross value added per megalitre. The bad news is that the mining industry features prominently, though the author has been unable to determine if the mining data included quarrying. The good news is that mining had the highest “value added” per megalitre of all industries, at over \$80,000 per megalitre, with agriculture having the lowest value added of around \$2,000 per megalitre.<sup>2</sup>

In 2004 in Victoria, a state government White Paper on water aimed to “bring greater certainty to the water allocation process by having all water sources under the allocation framework including recycled water, formalising the environment’s share of water resources by creation of an Environmental Reserve and capping the amount of water that can be extracted from catchments and aquifers”.

Around this time, Dick Pratt, Australian packaging billionaires, established Pratt Water Solutions to “address the need for significant new investment in water saving infrastructure in Australia, develop and deploy technologies for water recycling and enhanced water use efficiency in regional and urban areas, and provide sustainable, long-term benefits to the environment, communities, and the economy from better water management”.

Not only is there a vote in it, there would seem to be a buck in water too.

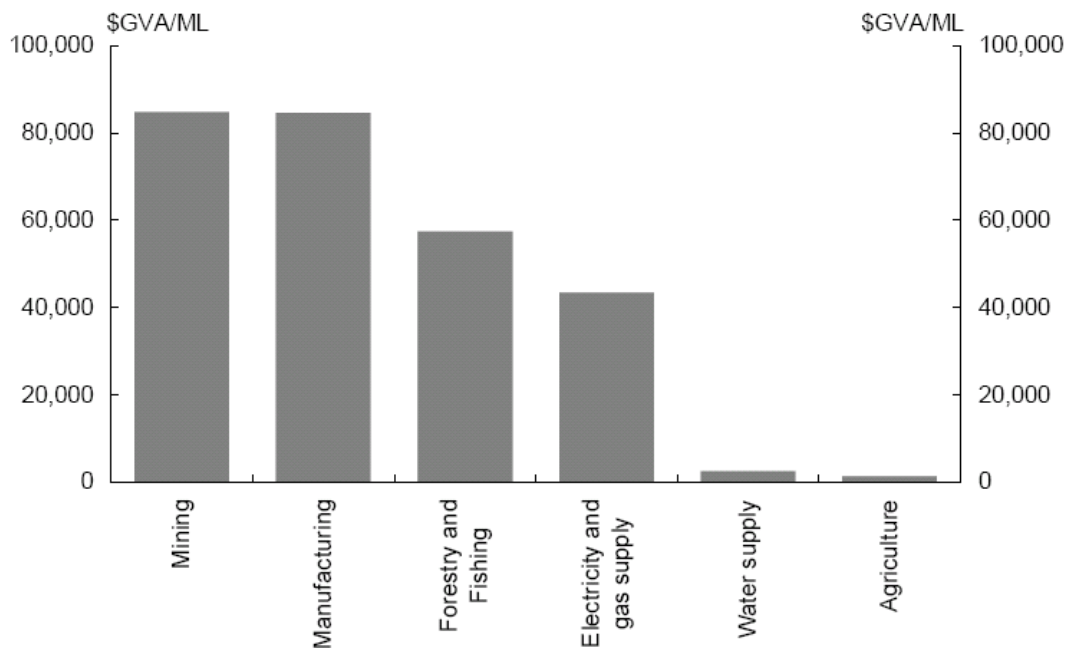
When I mentioned this article to an industry colleague I was strongly cautioned against writing anything that would encourage greater regulation over water management in the quarry industry. A valid point, but the reality is that the level of regulation and control, (admittedly, speaking from a Victorian perspective) is already significant, and community expectations will become even more demanding as water looks more and more likely to become a barbeque stopper.

However, as this paper is only a prelude to some “meatier” papers by technical experts, I better get on and set the scene. There is no doubt that water-related issues certainly touch every aspect of quarry establishment, management, expansion and end use.

<sup>1</sup> Summer 2006 edition of Treasury’s Economic Roundup

<sup>2</sup> Of the agricultural categories measured, vegetables and fruit had the highest value added, and sugar and rice the lowest.

Chart: Gross value added per megalitre of water used in selected industries



Source: "Water and Australia's future economic growth", Treasury, March 2006, referenced to ABS, 2004 data

Impact on water catchment areas from quarry design, location and stormwater and discharge management must be considered. Groundwater impact from dewatering or discharge is also relevant, and there is also a focus on "catchment-groundwater balance interaction" placing further onus on operators to understand the sources and behaviour of surface and groundwater around their operations. Alluvial gravel operations and washed sand operations also require significant planning to reduce negative environmental effects of clay and fine silts waste management, and such operations also require ongoing access to water. Downstream businesses which are frequently co-located with aggregates operations such as concrete and asphalt plants also have water and discharge management implications.

Quarry decommissioning and end use requires consideration of discharge, catchment and groundwater impacts, in particular land fill operations, and use of a quarry void for water storage may also have implications for local catchments and groundwater systems. Depending on topography the increasing trend towards site redevelopment into commercial and other redevelopment will probably require a detailed longer term water management plan for the site.

Finally, a personal perspective. A recent extension application for a 200,000 tpa hard rock quarry in central Victoria required consultation with the EPA, the local catchment authority, the groundwater authority and a water retailer. We also had contact with the corporate owner of adjacent water infrastructure. Some authorities were referred the application twice, due to overlaps between planning and extractive regulation in Victoria. The final local council planning permit was required to list all conditions of all referral authorities – including slightly conflicting conditions from different authorities. The direct and opportunity cost of the approval process was significant.

It is debateable whether the multiplicity of regulators is producing better community outcomes in terms of sustainable water use or the environmental impacts of water management. It would be interesting to hear other perspectives... However, here is a sobering reminder of the community's role in quarry water management. We were fortunate that our planning permit was issued without appeal. **The only significant community interest in the quarry extension application came months prior when the groundwater authority advertised our application for an increased dewatering licence.** The licence was issued following hydrogeological advice, extensive community consultation and establishment of monitoring bores. The lesson is clear – in the future, quarry operators may find there is more community interest in our approach to water management than in the combined impact of noise, dust and blasting.

References:

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