NSW DEPARTMENT OF
PRIMARY INDUSTRIES

Irrigation Profile - Readers' Note

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http://www.dpi.nsw.gov.au/agriculture/resources/water/irrigation/regions

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NSW Mid-Coast Region Irrigation Profile

Incorporating Hunter, Manning, Karuah and Central Coast catchments

compiled by Meredith Hope
for the Water Use Efficiency Advisory Unit, Dubbo

The Water Use Efficiency Advisory Unit is a
NSW Government joint initiative between NSW Agriculture and the
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1. EXECUTIVE SUMMARY

The NSW Mid-Coast Region Irrigation Profile was developed from a study to obtain regional and industry-based assessments of water use efficiency. The *Profile* details (where possible, by water source) what is known about:

- the number of irrigators
- the number of licences
- the entitled volume or area authorised for irrigation
- the area irrigated and water used in total and by crop type
- irrigated crop yields
- irrigation methods
- the value of irrigated agriculture

in the NSW Mid-Coast region.

The NSW Mid-Coast region includes the Manning catchment, the Karuah, Great Lakes and associated catchments, the Hunter catchment, and Lake Macquarie, Tuggerah Lakes, and Brisbane Waters catchments (also known as the Central Coast catchments). Irrigation data in the public domain were collected from State and Commonwealth sources, published research and industry reports and unpublished reports. These data were assigned a reliability rating using a system developed by the National Land and Water Resources Audit (1999).

This report does not attempt to calculate or analyse regional and industry-based estimates of WUE. This will be carried out in a subsequent report.

1.1 An overview of NSW Mid-Coast irrigation

Approximately 80% of the irrigated area in the NSW Mid-Coast region is in the Hunter catchment. The remainder is scattered along the major rivers and streams throughout the Manning, Karuah, Great Lakes and associated catchments and the Lake Macquarie, Tuggerah Lakes, and Brisbane Waters catchments. Approximately 14% of the State's irrigation licences exist in the NSW Mid-Coast region and 12% of the enterprises that irrigate are this region. Only 2% of the total area irrigated in New South Wales is in the NSW Mid-Coast region (Table 1).

Wine grapes and pasture for dairy cows are the two most important irrigated industries in the region. Eighty percent of the total area irrigated in the NSW Mid-Coast region is pasture, and 7% is wine grapes. The area irrigated on individual farms is small compared with the rest of the State. Broadarea and dairy properties in the NSW Mid-Coast region irrigate an average of 43 ha, compared with 189 ha on broadarea and dairy farms in the rest of New South Wales. A typical vineyard may irrigate 50 ha. The dominant method used to water pasture and lucerne is spray irrigation, while wine grapes are irrigated using drip.

EXECUTIVE SUMMARY

Table 1. Summary of irrigation data for the NSW Mid-Coast region in 1996–97

Source of water	Total irrigated area (ha)	Total water used by irrigated agriculture (ML)	Number irrigation licences	Number enterprises irrigating	Yield of major irrigated crop (t/ha)	Value of irrigation ($ m)
NSW total	1,150,000	7,700,000	24,000	7,846	cotton 1.8	2,496
All sources, NSW Mid-Coast region	26,582	nd *Estimate 114,700–146,400*	3,347	972	perennial pasture 15	nd *57, Hunter catchment only*
Regulated, NSW Mid-Coast region	nd *10,704 – 22,053 (1989–90 to 1990–91)*	nd *25,638 (1989–90)*	788	nd *reg & unreg. 1,414 (1993–94)*	nd	nd
Unregulated, NSW Mid-Coast region	17,298 (40% is perennial pasture)	nd *13,099 to 44,758 (1989–95)*	1,759		nd	nd
Groundwater, NSW Mid-Coast region	nd *7,817 (1993–94)*	nd *76,000 (1980)*	800	nd *228 (1993–94)*	nd	nd
Farm dams, NSW Mid-Coast region	nd *4,829 (1993–94)*	nd	na	nd *232 (1993–94)*	nd	nd
Town water supply, NSW Mid-Coast region	nd *262 (1993–94)*	nd	na	nd *32 (1993–94)*	nd	nd

nd = No data, na = Not applicable

The total value of irrigated agriculture in the Hunter catchment was $57 million in 1996–97. This represented roughly 2% of the total value of irrigated agriculture in New South Wales. A large proportion of this irrigated value can be attributed to livestock products ($31 million). Wine grapes were the next most valuable industry ($14 million).

1.2 Irrigation data issues

There were a number of data issues raised in the NSW Mid-Coast region Irrigation Profile. Generally, these relate to the scarcity of data, the lack of data at useful scales and the reliability of available data.

1.2.1 Scarcity of data

In the past, data have been collected for purposes (for example, DLWC billing and regulation requirements) which are different from the current needs for natural resource planning and for the planning and management of irrigation industry: data collected for these purposes are scant or missing.

Collection strategies affect the usefulness of data. Strategies employed by the ABS (Australian Bureau of Statistics) mean that only years with the same EVAO[1] can be compared.

1.2.2 Lack of data at useful scales

Point-scale data collected by ABS and ABARE (Australian Bureau of Agricultural Resource Economics) are confidential and have been reported at SLA, catchment or Agro-Ecological Region scales (AER). These scales limit how usable these data are for local users, who often need information at much smaller scales such as river reach or subcatchment.

1.2.3 Reliability

Reliability varied with collection strategy and by source of water. For example, irrigation data from regulated rivers were more reliable compared with irrigation data from unregulated, groundwater and farm dam sources. Extraction from regulated rivers is metered and data are collected for DLWC billing purposes. For all other sources, there has been no requirement by the DLWC to collect information about extraction. Voluntary surveys were used to collect data from the unregulated system. Poor survey return rates and farmer estimates of water use (rather than metered water use) reduce the reliability of the captured data.

The reliability of data is not always reported by State agencies. It is difficult to know what level of confidence to place in data-sets obtained from agencies.

Animosity by irrigators toward data-collecting agencies may downgrade the reliability of captured data.

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[1] The population to be surveyed is determined from the Estimated Value of Agricultural Operations or EVAO is estimated from a procedure that takes into account the value of the area of crops sown and the numbers of livestock on holdings at a point in time as well as the crops produced and the livestock turnoff during the year. The resultant aggregation of these commodity values is termed the EVAO.

1.2.4 Storage of data not centralised

Storage of data is not centralised. Information on yields, areas, water use, methods and value were drawn from many different sources.

1.3 Conclusion

A more comprehensive and consistent approach to the collection of irrigation statistics is needed. This would help to ensure that data are comparable across different water sources and industries. The following are needed to improve the situation.

- Crop data are needed, that is, crop water use and irrigated area. Better monitoring is needed to help develop strategies to manage and effectively balance environmental and irrigation industry water needs.
- Data are needed at scales that are large enough to protect point-scale confidentiality (for example, enterprise level) but small enough to allow users to aggregate information to useful scales.
- Protocols for provision of data to users are needed. For example, information providers need to attach reliability ratings to data. This will help users make better decisions about the usefulness of the data and will help prevent users manipulating data inappropriately.
- Two-way flow of information between agencies and irrigators needs to be fostered. Typically, data have been extracted from irrigators by agencies. These data need to flow back to irrigators in forms that might assist them make better water management decisions. This could in turn, over time, improve the reliability of information that is collected from irrigators.

Finally, such a comprehensive approach can only be developed with the full involvement of the many irrigators, agencies and community groups that require these data.