

82. THE PRODUCTIVITY IMPERATIVE – RESEARCH AND ITS CONTRIBUTION TO THE COMPETITIVENESS OF RURAL INDUSTRIES

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To remain globally competitive, rural industries must respond and adjust to several dimensions of change, aspects of which have been intensifying in recent times. These dimensions may be broadly categorised as follows – globalisation of markets and associated intensifying competition, terms of trade, environmental sustainability, food safety, supply chain transformation and advancing technologies. These pressures are not new and rural industries have been responding to them since commodity trading began. For example, during the period 1980 to 2000 the following changes occurred in the Australian dairy industry – the number of farming enterprises halved from 25,000 to 12,000; milk output per cow rose from 3500 L to 5000 L p.a.; total milk output rose from 6 bn L to 11 bn L p.a. During this same period terms of trade declined by 1.2% p.a.; to offset this total factor farm productivity rose by 1.6% p.a. There are 3 core factors contributing to improved economic productivity – these are scale economies (i.e. bigger farms, more cows per proprietor), bought-in economies (e.g. bigger cow sheds, tractors, etc) and improving the output yield from farm resources such as pastures and cows. It is in this latter grouping that science contributes. For example, the genetic merit of the national herd rose significantly in the above 20-year period, although the fertility of the herd actually declined in the same period. The challenge to rural industries to remain competitive is intensifying – there are a number of causes – a major one is deregulation of markets and intensifying competition and speed of change. Others are environmental sustainability and food safety – both of which place considerable demand on supply chain transformation. Continuing declining terms of trade means farm enterprises will have to continue to improve productivity – science will have to provide the underlying technologies that will deliver performance improvements. For example, there is ample opportunity for the reproductive and the genetic sciences to jointly deliver faster better directed genetic gain. To remain relevant and competitive, both the farming and the science industries have to adjust rapidly to the changing science paradigm, which includes principally the rapid evolution of the molecular sciences and issues of critical mass and integration, but also evolving policy and economic paradigms in governments and commerce. The capacity of science to aid the transformation of industry will be sorely tested in the period ahead. Aspects of the above will be illustrated and discussed.