

# THE FUTURE OF AGRICULTURE IN THE PERI-URBAN FRINGE OF SYDNEY

N.L. Johnson, F.M. Kelleher and J.J. Chant

Farming Systems Research Centre, University of Western Sydney, Hawkesbury 2753

## Abstract

The Sydney hinterland is agriculturally very important to NSW, delivering high quality produce to the nation's largest centre of population. However, it is limited geographically by natural boundaries, and faces major threats to the survival of its agricultural industries in terms of urban encroachment, planning policy, and environmental legislation. These pressures, and increasing costs, have led to rapid intensification. This indicates a trend to reduced reliance on 'prime' agricultural land and a need for planning policies which break the nexus between "agriculture" and "agricultural land". Survival of agriculture in the Basin generally is under threat without specific development of policy formulated to respond to both urban and environmental pressures, and on an industry by industry basis. It is considered that by targeting intensive industries as "light industry," within common perceptions of the term, normal planning precautions applied in this context would defacto protect such industries.

*Key words: Agriculture, peri-urban, rural planning, intensification.*

Growing concern has recently become evident over the vulnerability of agriculture in peri-urban regions to incursions by various forms of urban activity (1, 2, 3, 7). The value of producing fresh, high quality goods close to major centres of population is obvious, not only in economic terms, but, depending on the industry, also in terms of catchment protection and environmental and scenic amenity.

Although such fringe agriculture would appear to be a highly visible activity, baseline data on both its extent and structural changes taking place were not available. It was felt that agriculture was poorly supported by the planning provisions, but this could not be evaluated without large scale acquisition of relevant data.

There is legitimate competition for agricultural space. Rutherford *et al.* in 1967 (8) noted the 'rolling wave' development of the Sydney hinterland where extensive, low profit agricultural activities were replaced by more profitable ones, and then the general termination of these activities by residential development. Much of this was unplanned. The authors documented concentric zones of diminishing land use intensity around the city, which they characterised as :

- inner zone of market gardens;
- intermediate zone of poultry-horticulture; and,
- outer zone of dairy or mixed farming.

Thirty years later, the physical environment and growth of Sydney as a major centre have combined to create a dramatic example of the pressures on fringe agriculture. The Sydney region is effectively locked into a basin by geographical features, the Blue Mountains to the west, river and catchment systems to the north and south, and the Pacific Ocean to the east. Agriculture has been forced to compete for a finite supply of space with other land uses, most demonstrably that of urban development and associated planning, but also increased community pressures for landscapes dedicated to natural environmental purposes, and free from agricultural chemicals. Reports of complete loss to the area of industries such as sheep and cropping, continued reductions in dairies, pigs and fruit, and the changes resulting in turf farms, mushrooms and shedded poultry, for example, indicated major changes under the perceived land use of "agriculture".

The Department of Planning has not championed the cause of agriculture in recent planning documents for the region. The 1988 "Metropolitan Strategy" (4) makes strong statements on protection for parks, forests, catchments and minerals, but not agriculture. The 1993 "Sydney's Future" (5) looks to regional concerns in terms of water quality, waste management, bushland and landscape conservation only. It notes that most future urban development will be within the Hawkesbury-Nepean catchment, but does not recognise present agricultural uses. The 1995 document "Cities for the Twenty first Century" (6) has moved towards recognition of the "prime land" component of agriculture, but strategically integrates such agricultural resources into environmental planning, which hardly recognises modern intensive agriculture, with characteristics requiring special consideration and potential separation from natural environments.

Agriculture presently enjoys a very uneasy relationship with "the environment". The Sydney area has become a microcosm of this balancing of conservation causes with farming, with the ideal of often quite unrealistic notions of "sustainable" development. In recognising the fact that growth, harvest and removal of materials from natural systems must create profound change, the problem becomes one of determining what extent of change is permissible. Since the 1970s there has been massive development of Environmental Legislation in NSW, most notably the Environmental Protection and Assessment Act of 1979, but legislation across all areas of protection of air, water, noise, vegetation and catchment has implications for agricultural practice.

These environmental instruments have become another factor with which fringe area farmers must juggle. As pointed out, the history of agriculture in the region has seen changes in business activities enabling substitution of high value capital inputs for natural resources. This means more concentrated outputs, in terms of pollution *per se*, but also in terms of noise, traffic and odour, for example. The consequences in "degree of permissibility of environmental change" before prohibitive responses are triggered is poorly conceptualised and documented, and often not framed with an awareness of farming problems.

## Methods

As a subset of a larger project which examined agricultural land uses in the local government areas of Hawkesbury, Mudgee and Wollondilly, this project aimed to examine changes taking place in the Sydney Basin, in the context of constraints from Environmental and Planning Legislations. The major source of data was from the Australian Bureau of Statistics. Data were obtained for relevant statistical subdivisions to a small unit level, for major industries in the basin. These data had not previously been analysed. A set of divisions were chosen with radial development from central Sydney. These were : Inner Sydney, Inner Western Sydney, Lower Northern Sydney, Central Western Sydney, Hornsby-Kuring-gai, Blacktown - Baulkham Hills, Gosford-Wyong, Outer Western Sydney and Outer South Western Sydney.

The study was made of census year 1984-5 on an annual basis through to census year 1993-4 (*ie.* March to February). Financial data were adjusted for movements in the consumer price index. Data used were: all agricultural industries, dairy, beef, vegetables, fruit, piggeries, poultry, flowers and turf. Data categories were: number of industries, area, farm gate values and stock numbers. All data were tabulated, and analysed for each industry in terms of time and radial movements in each of the categories listed.

## Results and discussion

The main trends from this analysis will be presented.

### *Flowers and turf*

During the 10 year period, these industries have been almost entirely lost from inner regions, maintained in intermediate areas, and increased in outer areas. The production area has dropped in inner areas, but increased markedly in outer areas. The overall impression is of an industry generally maintaining a presence in the Sydney fringe, though with a fairly rapid outwards movement over the 10 years surveyed.

### *Fruit*

There has been a marked downturn in the fruit industry. Total values of production have been reduced by about 15%, while area and enterprise numbers have dropped by 50%. This indicates intensification, with fewer producers working more intensively on smaller areas but increasing productivity. The rapid drop in all indices suggests that this industry is withdrawing from the fringe. It is unlikely that any change in production methods will occur in time to maintain a sufficient industry presence in the face of existing pressures.

### *Piggeries*

All indices show rapid decline. Over the 10 years, values have dropped by 30%, enterprise numbers have dropped by 50% and areas by over 66%. However, stock numbers have declined only slightly. Intensification is indicated, with fewer, housed systems in outer areas maintaining a presence. There has been a rapid change in all factors of pig production in the region.

### *Dairies*

During the 10 year period, all indices show a downturn, except CPI adjusted values. Greater productivity has been achieved with less stock, area and enterprise numbers. The high productivity and increased farmgate values indicate increased levels of ration feeding and decreased reliance on pasture production.

### *Beef*

The changes in the industry are difficult to evaluate, with some indications that the levels are in response to drought. There is movement to outer areas. Beef appears to be the choice of small rural residential style farming, with stock bought and sold depending on climatic conditions. The minimal enterprise plant costs ensure continued use for this purpose.

### *Vegetables*

Total gross values for the region have been maintain-ed, with a decline of about 30% in area and operator numbers taking place over the 10 years. There are believed to be many marginal and unreported operators in this industry. Transport costs of maintaining supplies of bulky and perishable goods indicate that replacement of these goods from outside the area would be at high costs to consumers.

### *Poultry*

The most significant changes in the poultry industry have been those resulting from deregulation in 1989. Values show a steady decline from this time and the number of operators is also dropping. Overall decrease in area is shown with some counter cyclic rises in outer areas. This is believed to be due to a movement by consumers towards "organic eggs", which command premium prices.

### *Conclusions*

Agriculture in the Sydney region can be characterised as a diverse set of changing industries with a decreasing reliance on soil resources. However, present planning policy only appears to recognise agriculture in terms of valuing "prime agricultural land".

The data for the industries examined showed rapid intensification occurring over the 10 year period, with the exception of the beef industry. The ABS was not able to supply separate material to document development of new initiatives such as mushrooms, glasshouse flowers and hydroponic vegetables, however all of these are strongly intensive in nature.

The development of planning instruments to protect present and developing agriculture, to service the needs of Sydney, will require different approaches for different industries. An objective might be to protect the broad acre, pleasant and rural residential value of the remaining beef industry - which has a strong relationship with the preservation of land in terms of space. The poultry industry, by contrast, has virtually no relationship to prime agricultural land, has none of the aesthetic values conjured up by rural descriptors, yet has huge economic importance and a need for space and locations zoned away from residential encroachment. An entirely different set of planning objectives would be required to meet these needs.

The conflict which develops in peri-urban areas, through adjacent, incompatible land uses is seen to be as a result of the failure to understand, and properly plan for, the complexity of modern agriculture.

The proposition is made that intensive agriculture should be zoned in a similar way to light industry. All industries studied show indications of intensification, with the exception of beef, which has achieved a particular relationship with rural residential dwellers. Intensification means that smaller areas are producing more by increasing inputs. This translates into structural problems in terms of increasing outputs of traffic, noise, odours and polluting by-products. These problems require confrontation, otherwise appeals for agricultural preservation based in traditional terms on aesthetic, catchment and amenity values can have little currency.

For example, industries such as intensive horticulture and intensive stock operations would be protected by light industry zonings which recognise that high traffic, structures, noise and odours are part of day to day operations. Investment could be made without the concern of community objections based on misconceptions arising from present agricultural zonings which inter-weave production with rural residential areas. On the other hand some industries are recognised by planners as conferring high scenic amenity in the landscape. Extensive grazing activities, for example, are probably best preserved by addressing the community value of "open space" rather than "agriculture" or "prime land", as presently does occur in the planning literature. These industries are seen by the community as acceptable within low density residential areas. The situation for industries such as flowers, turf and orchards is less clear. However, in the Sydney region the evidence of intensification in operations would indicate that increasing objections may be made to associated activities.

The future of agriculture in Sydney will depend on the recognition of its changing nature and planning for the reality. Prime land is not the issue in the fringe. The issue has become that of space for a set of industries which are of value to the city. These industries will use land as a resource to varying degrees. There is likely to be little protection for Sydney's present rural industries in ascribing to them broad acre rural values.

In terms of agronomic implications, the role of the agronomist may become increasingly polarised. On the one hand, expert input will be required to intensive forage production (eg. dairies), turf growers and horticultural crops. The high potential value of these requires optimised resource use. On the other hand, there is a continuing and probably expanding need to service the pasture improvement requirements of hobby farmers conducting non- or marginally viable grazing enterprises.

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