

*Short Communication***Integrating Education, Extension and Research for the Development of Sustainable Grazing Systems – Australian Landcare and the PROGRAZE™ training programmes**

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**Introduction**

The continued downturn across the agri-sector evident by indicators such as loss of farm income, low produce prices relative to retail prices, increased management costs of production and declining contribution of agriculture to the National Gross Domestic Product (Marsh, 2001). During this period it has become evident that the importance of grassland farming is not just limited to production of livestock products for the food chain. For example, opportunities within the grassland sector have emerged during this period including the value of eco-system services (Costanza *et al*, 1997) provided by grassland farmers in the UK (Bignal and McCracken, 1996, and, Bignal and Baldock, 2002). These services can be diverse and extremely difficult to quantify but include the utilisation of grasslands as carbon sinks (MAFF, 2000), sources of biodiversity (Johnston, Poulton, Dawson and Crawley, 2001), areas of conservation value, areas associated with tourism and areas that have inherent wealth associated with landscape value (Dart, 2002).

At this point, it is useful to be reflective on the writing of Sir George Stapledon, whose memorial trust has made this report possible, from over half a century ago on the point of rural wealth potential (Stapledon, 1964). Stapledon clearly saw the integration of food chain, dietary requirement, rural wealth and sufficient production to provide and stimulate rural wealth creation. Furthermore, in his writings, the farmer is the essential link between each facet of integration. Stapledon is perhaps most remembered for developing the importance of rotational ley systems for the most productive grassland systems and the use of varietal selection of grasses for different grassland systems (Stapledon, 1939). However, his comments on the reconnection, diversification and integration of farming into the food chain were insightful.

A current review of UK government policy within the livestock and agricultural sectors provides clear messages that the value of grassland farming is not limited to intensive food production. This is perhaps most evidently seen with DEFRA's England Rural Development Plan (DEFRA, 2001). Diversification and reconnection of farm products with markets is an area of opportunity that has been given intense attention in the Policy Commission report on Food and Farming published in 2002 (Policy Commission on the Future of Farming and Food, 2002). Specific case studies of market and consumer based reconnection have been reported for a range of grassland based and livestock

product enterprises (Dart, 2002) and these provide clear examples of marketing successes.

An essential part of reconnecting of farming enterprise with markets, the establishment of frameworks for environmental care and the diversification of business outlook will be their inclusion in communication and education strategies that will facilitate changes in current practices that will be required on many UK livestock farms. The development of stakeholder approaches can strengthen educational and communication programmes in such scenarios. The focus of the stakeholder approach is the learners lead agendas and develop training programmes from their own professional requirements.

### **Creating stakeholder frameworks that link producers to markets and environmental responsibility; can the Australian Landcare model work in the UK?**

The Landcare movement in Australia has had a huge impact on how land owners view their commercial operations and social responsibility. The Landcare movement in Victoria, Australia has offered clear models of successful technology and knowledge transfer processes across the livestock sector that could be potentially used globally.

The Landcare system of community involvement started in Australia at the end of the 1980's and has established itself in New Zealand and South Africa (Campbell, 1994; Landcare Australia, 1999). The Landcare movement has developed with the farm group or community Landcare group being central to decision making processes that tackle environmental issues such as the impact of agricultural production on landscapes.

Environmental issues that are central to many Landcare groups include soil degradation and soil erosion and they have provided a focus for many Landcare activities. The agricultural context is only one aspect of the Landcare movement and it is discussed specifically here. Many of the broader issues of Landcare can be found in reviews and books elsewhere (Campbell, 1994).

This interest in environmental sustainability within Landcare has occurred against a background of many income problems associated with livestock farming we have seen in the UK and Landcare has been successful. The educationally based approach has helped to facilitate flexibility and diversity into whole farm planning. These issues are clearly placed in the hands of the individuals within the Landcare group so that it is in effect learner led. The Landcare Group is the basic working unit of the movement, with its own charter and ability to hold its own activities to generate wealth. It is generally formed from the enthusiasm of concerned stakeholders drawn from communities and such groups will represent a range of views, skills and decision making goals.

One of the most exciting outcomes of Landcare has been the fact that farmers and producers are central to an environmental research process and they

have developed research programmes along-side commercial enterprises. This has been done with integration to agricultural institutes and research bodies but there are many examples of the direct generation of data and management information by farmers and farm groups themselves. These notably include the selection of salt tolerant grass ecotypes to grow in salinated gulleys on farm land; the conservation of native trees and implementation of agroforestry programmes; assessment of biodiversity on farmland; the development of animal genetics programmes; and, the generation of business benchmarking and environmental auditing data that can generate sources of income and sponsorship. For example, communicating the value of biodiversity on farms in the UK is generally seen as a difficult task because biodiversity is not easy to measure and there may be no clear financial benefits. However, the benefits of re-vegetation in many Landcare projects have been demonstrated in groups in providing shelter and shade, and dealing with rising water tables and salination of soils. The biodiversity benefit of re-vegetation is also recognised with respect to harbouring predators in Integrated Pest Management programmes and potentially providing buffers to loss of nutrients into watercourses (Campbell, 1994).

### **The essential educational components of creating a sustainable livestock sector**

A further development in the Australian livestock sector in the last 15 years has been the development of training programmes that have integrated research and practical farm management. These have included the 'Pasture Manager' syllabus that has developed into the PROGRAZE™ educational standard (MLA, 2002). The PROGRAZE™ educational systems now include the beef, sheep and dairy sectors and they are supported through levy funding via Meat and Livestock Australia (MLA, 2002). Most importantly, the initial 'Pasture Manager' syllabus was developed by farmers and farm consultants and it provided a clear practical approach to developing complex management systems such as assessing dry matter accumulation of pastures, clover content and weed survey. The importance of integrating practical management scenarios with principles that are founded on research data is central to the PROGRAZE™ syllabus and the associated suite of qualifications. For example complex processes such as dry matter accumulation are practically simplified and integrated to livestock nutrient budgeting to provide a producer with clear targets in the use of fertiliser, feed and grass. This type of approach is central to the success of PROGRAZE™.

The principles that support the PROGRAZE™ programme and the earlier 'Pasture Manager' syllabus grew out of farmers viewing sustainable grazing systems that were demonstrated on farms. This included the experimental farm of the Pastoral and Veterinary Institute near Hamilton in Victoria. The particular experiment on this farm that provided so much interest was a 30-year long term experiment that demonstrated phosphate management strategies available to grassland farmers (Saul, Cayley and McCaskill, 1999). It demonstrated how stocking rates could be increased with sufficient nutrient planning and clear attention to pasture composition.

PROGRAZE™ is clearly farm system (livestock and grazing) focussed. It therefore provides a clear standard for the livestock production operations and whole livestock product food chain. It does not specifically deal with fertiliser or agrochemical quality and advice but encompasses them along with many other issues related to livestock production.

### Conclusion

A clear opportunity in potentially decreasing expenditure to the farmer is to encourage farmers and producers to develop their own consultancy and advice schemes. Further more, there is little evidence that this type approach decreases the importance of external advisers and consultants. In many cases it can strengthen business relationships between adviser and farmer.

Stakeholder approaches offer an opportunity for extension workers to develop case studies from which land managers can act with more security in decision making processes. Technology transfer and the knowledge held in our research infrastructure is able to provide confidence in making new decisions that diversify from pure production based goals in farm business planning. Extension programmes must provide a means for land managers to interface technical and the scientific literature to their day to day practices. The Landcare model provides a clear example where land owners are brought together to develop their own means of solving problems and developing policies for sustainable management. This type of process may provide a good extension medium that can be used in the UK.

The development of a PROGRAZE™ syllabus in the UK could also support the development of professional awareness within the livestock sector and increase the development of responsible environmental management.

Long term experimental and trial sites offer an opportunity for extension workers to develop case studies from which land managers can act with more security in decision making processes. Technology transfer and the knowledge held in our national research infrastructures will hopefully provide confidence in making new decisions that diversify from pure production based goals in business planning. Data from demonstration and experimental land management sites can be used to place financial planning data into current policy or environmental payment schemes.

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