Communication with the farming industry has been a strong feature of IGER research activities, especially in plant breeding and pasture improvement technologies, since the early days of the Welsh Plant Breeding Station. Recently IGER’s capacity to deliver the outputs of its research programmes to the agricultural industry has been significantly enhanced. This has been done by establishing a small team (Figure 10.1) dedicated to the task of technology transfer.

The need for change
IGER’s remit for grassland and environmental research closely matches today’s key issues for UK agricultural systems of food production within an environment in which consumer aspirations for safe and healthy food, pollution avoidance and countryside and ecological enhancement, are satisfied.

One of the major recommendations of the Policy Commission on the Future of Farming and Food, 2002, highlighted the need for “a new drive on research and technology transfer to match the best in other countries - including a new national network of demonstration farms”.

Grassland remains the cheapest source of feed for ruminant livestock; research shows it to have other favourable qualities for the production of safe and healthy human food and the potential to contribute attractive and bio-diverse landscape.

There is clearly a strong case for a substantial and direct interaction between IGER and farmers, food processors, retailers, other land managers and countryside agencies.

Technology transfer innovations
IGER has responded to these new opportunities by initiating a number of programmes which have extended the scope of its extension activity. These were made possible by funding from the European Agricultural Guidance and Guarantee Fund (EAGGF), Department of Environment, Food and Rural Affairs (DEFRA), the National Assembly for Wales and from revenue generated from commercial licenses, grants and contracts.
Wales Agriculture Department (NAWAD), and the Welsh Development Agency (WDA), together with private and industry levy funds.

Use is made of direct and indirect means of communication with the farming industry. The direct and interactive methods include contact with individual farmers but also more particularly with farmer groups. Both of these have an emphasis on “participatory” activities on commercial farms and a two-way exchange of information between researchers and farmers (Figure 10.2). The indirect methods enable contact with a larger audience through articles and fact sheets transmitted through traditional media as well as the newer web-based channels.

Practice into profit

This collaborative technology transfer programme (funded through a consortium of commercial and industry levy bodies and DEFRA) established and demonstrated a series of livestock production systems using the latest relevant research. These systems were designed to make more efficient use of grassland without increasing costs. IGER contributed to a heifer beef system at North Wyke and upland sheep system at Bronydd Mawr (Figure 10.3).

Grassland Technology Transfer Programme (GTTP)

This programme (funded through the EAGGF Objective 5b rural development programme with
support from the WDA), which began in 1999, will be concluded in June 2002. Ten Focus Farms were established each having an associated “farmer group” of local farmers. Farm performance monitoring, target setting and benchmarking are key elements. The ten Focus Farms have a total associated membership of over 200 farmers who attend and participate in on-farm meetings typically at 6-8 week intervals. The farms include seven beef and sheep farms, two dairy farms and two organic units. Some are run in association with other EAGGF 5b projects (Welsh Sheep Strategy and Quality Beef in Wales). This confers benefit in providing the widest possible range of interests to the farm’s development.

The approach has a high degree of “participation” and “bottom up” character in its information flow (see Figure 10.4) and implementation of new technology. Ideas are generated from within the group and encompass broader issues of family and business objectives as well as farming practice.

Improvements on these farms are extended to a wider audience through transfer to group members’ farms, public open days and newsletters. Extension is even wider through farm walks on Focus Farms and at IGER research farms, discussion and training events with other farmer organisations and groups, and by publicity at the major Welsh farming shows and events. Fact sheets specifically designed to provide practical farm application information from research reports are used to support all these activities. One-to-one information exchange at farm visits (Figure 10.5) provides for the particular needs of individual businesses.

This is an expensive form of extension but is considered sufficiently valuable to be worthy of retaining as a part of the overall mix of activities.

Figure 10.4 Information flow to and from researchers and farmers

Livestock Knowledge transfer (KT)

DEFRA invited a consortium of IGER, ADAS and Bristol University to undertake a 15-month programme of technology transfer to livestock producers in England and Wales. This project commenced in November 2000 and was part of a £1m initiative to provide technical support to the agricultural industry in England and Wales. A consultation process involved distributing some 120,000 questionnaires to industry organisations, individual farmers, farmer associations and technically innovative “benchmark” farmers. In addition to identifying technical issues holding back the farming business the responses also identified the preferred methods of technology transfer.

The general industry response and benchmark farmers showed a consistent trend in identifying the worst methods of transfer (Internet, salesmen and television and media) and the best methods (veterinarians, farming press, consultants, advisors and demonstration farms).
In collaboration with selected technical specialists in the livestock sector, specific technical issues raised in the survey were identified. These included the following:

- Grassland issues - reducing the variability in silage quality, establishment, management and conservation of red clover, grassland management for white clover.
- Beef and sheep issues - animal health, cost effective winter feeding, genetics and breeding, optimising production systems.
- Dairy issues - mastitis, lameness, fertility, and economics of milk production.

An integrated approach of delivery included production of Technical Fact Sheets (67 in total) and information for farmers, press coverage of technical issues, shows, events, conferences, technical meetings and discussion groups.

**Evaluation**

Evaluation of the impact of our extension programmes and assessment of the most effective methods is a highly important aspect of the work. The GTTP in Wales resulted in over 13,000 farm contacts. Over 500 farms received direct and repeated contact with us through Focus Farm groups, farm visits and a newsletter Grass Focus; 280 farm improvement initiatives were introduced at Focus farms, on farmer group members' farms or following farm visits; over 100 farmer group events were provided. About 90% of farmers valued the information provided as ‘useful’ to ‘essential’ and felt that the level of information provided was ‘just right’. Perhaps most importantly, 69% of the farmers directly involved with the project reported that they had applied information that they had received onto their farms.

In the KT project the demand for fact sheets (50,000 in 3 months) was monitored by specific livestock sector enquires, geographic location and mode of request (post, fax, events and Internet). To date 59% of the total demand for the fact sheets has been directly from farmers, with almost 70% of the requests received by post and fax. A provisional analysis indicates an 86% positive response that the technology transferred will be used on farm and that the information provided was pitched at a suitable level.

**Future development in extension**

The extension programmes in Wales will continue in partnership with the Farming Connect initiative launched and run on behalf of NAWAD by the WDA with funding aid from the EAGGF Objective 1 and Objective 2 programmes. This new programme will establish a network of commercial ‘demonstration farms’, together with a programme of ‘research and development’ events at research and college farms, including the IGER research farms, as part of its wider programme of rural development support. IGER will provide the lead expertise within its grassland and environmental research remit. Similar initiatives are being sought in conjunction with DEFRA and regional development agencies in England.

There are opportunities to provide information and knowledge to other public and private sector agencies. We believe that the recent innovations in extension have been successful and are worthy of further development. The future is likely to demand a multiplicity of project types and funding sources. The skills, materials and quality of an extension group will need and benefit from continuity and delivery across a wider geographic and funding base.

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