GROWING FOR THE FUTURE
Sustainable Development and Horticulture

Food for thought

> *"In an idle moment, I decided to reconstruct the contents of a 99p bag of washed and ready to eat salad leaves. Of course, you are not meant to do this, the whole point of bagged salad being that we are too busy to wash a lettuce, let alone count them. …I had bought two leaves of frisée, one leaf of red radicchio and two leaves of a pale green, crunchy variety of lettuce… Bagged salads did not exist before 1992. Now, two-thirds of households buy them regularly. Thanks to global sourcing and advances in packaging technology, we have got used to eating a variety of salads all year round"* (*F. Lawrence, The Guardian Weekend, May 2004)*

Such is the state of our eating habits. The value of the UK salad vegetable market grew by 90% between 1992 and 2002. This does not mean we that we eat more salad, volumes have grown by only 18% over the same period, but the food industry has found ways of making more money out of salads. Modified atmosphere packaging (MAP) has allowed the shelf-life of prepared salads to increase by over 50% making it possible for supermarkets to sell washed and bagged salad from around the world. MAP keeps it fresh for up to 10 days and some lettuces imported from the US can be kept 'fresh' in MAP for up to a month. However, research[1] shows that so-called freshness might not equate with 'nutritious' because salads for our convenience actually destroy many of the vital nutrients (anti-oxidants and vitamins C, E and polyphenols) we require in our diets.

Context – The Horticultural Industry in the UK

Horticultural production is a major part of the UK's agriculture industry, providing jobs in rural areas and supplying fruit, vegetables, glasshouse crops, plants, flowers and bulbs, nursery stock, trees and mushrooms. The horticultural industry contributes significantly to rural economic and local communities. In 2000 the gross output of horticulture was £1.78 billion, or 11.9% of the total agriculture industry in the UK (*see* Annex 1 for industry overview). Another key aspect of the industry is amenity horticulture that has a growing impact on our rural and urban environment. Details of this sector are outlined in the annex. It contributes significantly to our landscape and amenity and hence the aesthetics of our lives. Yet it also poses some risks. For example the emphasis on hard landscaping in many areas is increasing the risk of flash flooding in some low lying and marshy areas.

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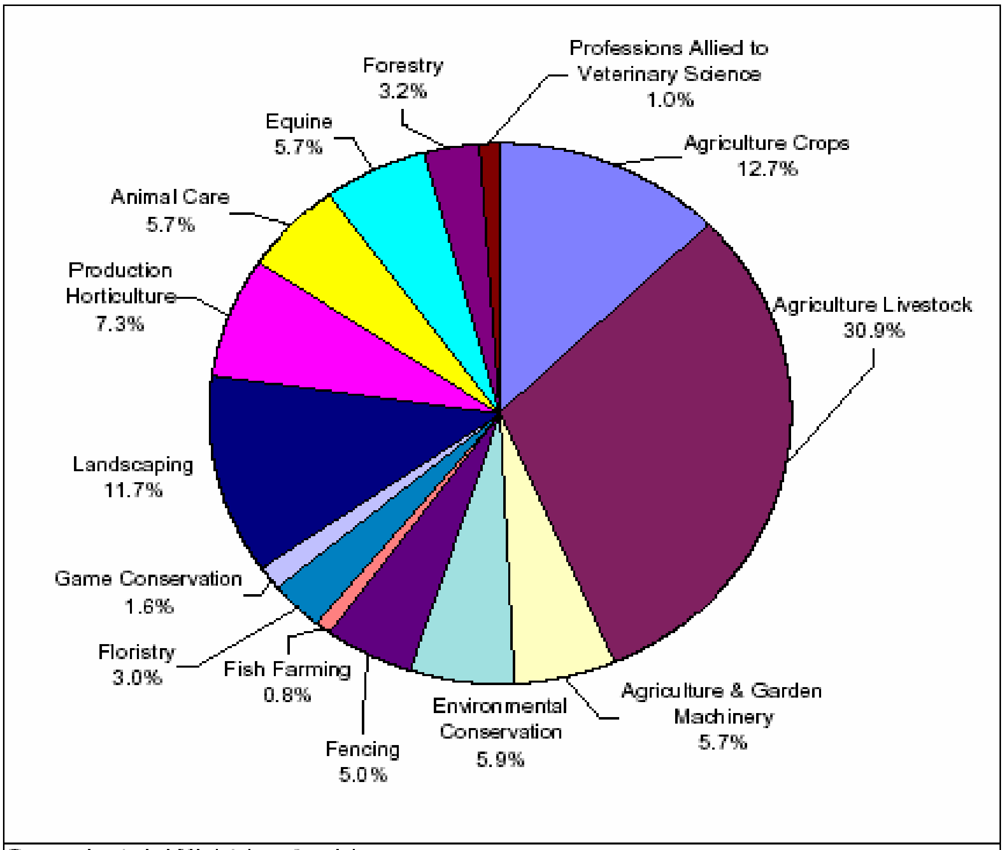
[1] published in the *British Journal of Nutrition*, 2003; see also *Not on the Label* by Felicity Lawrence, Penguin, 2004

Horticulture is a significant component of the land-based industries, which are very diverse. This sector of the UK economy covers primary food production to environmental conservation. It also forms the basis for a wide range of rural tourism and leisure activities, and in parts has close links with other sectors such as construction, retail, leisure and recreation. Consequently, the land-based industries are an important specialised and complex sector of the economy. Together they account for the land-management of 85% of the UK landmass, including agricultural and grazing land, forests and woodlands, uplands, commons, marshland and public parks and urban green spaces. It is estimated that these industries contribute in excess of £24 billion a year to the UK economy.

Total employment in the sector is 959,000 representing 3.4% of employment in the UK. The sector relies on nearly 400,000 regular workers and a substantial number of casual workers. Figure 1 shows the employment split by sector.

Figure 1 Employment split by industry, (2000)



Source: Lantra's LMI database/model

Current Economic Position and Future Trends

Farmers and growers, along with other land managers face a range of difficult business decisions in the face of increasing market pressures and the switching away from production subsidies as part of CAP reform. There is also an increasing focus on environmental performance, including the need to comply with new regulations. Horticulture is also contributing to the growth in the organic production of food in the UK estimated at about £1billion a year in total sales. But this is only about 2% of the British food market and just

5% of Tesco's annual turnover. Whilst on the surface this all looks very positive in sustainability terms, it is estimated that the UK imports about 70% of its organic food and few people count the air-miles(or food miles) that the food has consumed on its way to the consumer.

Sustainable development issues

Some of the key sustainable development (SD) issues facing farmers and growers are:

- Low incomes and profitability.
- Wide disparities between the best and worst performers in terms of management and efficient use of agro-chemicals.
- Need to raise skill levels to meet the higher standards expected by society such as nutritional and quality standards, eg few disease lesions on the surface of the product.
- A plethora of advice, but much of it uncoordinated and lacking in effectiveness.
- Practical and cultural barriers to different ways of operating.
- Poor health and safety record.
- A major impact on natural resources, including water pollution, soil degradation and erosion, air pollution from ammonia emissions, contribution to climate change from emissions of CO_2, methane and nitrous oxide, damage to the landscape and to habitats and impacts through transport and distribution.
- Climate change is likely to affect the characteristics of the growing season, pests and diseases and the types of crops that can be grown in some regions.
- Growing use of immigrant labour for harvesting crops and the many associated issues.

Trends

Research conducted by Lantra previously mentioned suggests the following future trends:

- Agriculture and horticultural production are expected to become more knowledge intensive – using less but better qualified labour.
- Increased concern with safety, tracability and environmental protection of primary food production systems from the Food Standards Agency and consumers.
- Increased diversification out of farm and horticultural production to find more sources of revenue.
- Declining employment caused by mechanisation, low wages and low prices at the farm gate.
- Greater exposure to global competition and hence increasing volatility and general depression of food prices.
- Growth in private and leisure-related spending leading to growth in landscape and turf culture industries and garden centres and historic gardens.
- Increasing emphasis being placed on environmental conservation in all land-based industries.

Challenges

Some recent statistics from DEFRAs Farm Practice Survey[2] (2004) reveal some of the environmental challenges facing crop producers. One example is shown in the Table 1 below.

Empty Pesticide Containers	*% of holdings (General cropping and Horticulture)*
Stockpiled – no disposal plan	0
Re-used	2.4
Burned for heating	1.2
Burned in the open	20
Burned in a drum incinerator	63.3
Buried	0
Landfill	3.4
Dustbin	1.2
Recycled	5.8
Not applicable	11.4

Table 1 Disposal of Pesticide Containers

Data can also be found for farmyard manure use, other packaging and waste (see http://statistics.defra.gov.uk/esg/publications/fps/fpsfinalreport.PDF)

Sustainable Development and Horticulture

The horticultural industry has a significant impact on the UK economy, its social capital as well as the natural environment. As an industry it requires substantial inputs of natural resources, such as water, energy and manufactured resources. It is a major user of road and air transport. However, there are currently no formal published data on the scale of such impacts. Nonetheless, there is some evidence of its impacts on the food chain. For example, as a working rule of thumb it is estimated that at least 40% of all the fresh fruit and vegetables we eat contains residues, often multiple residues of several pesticides and not infrequently, illegal ones. In 2003, the government reported that 67% of the grapes, 75% of the apples and 71% of the pears we ate contained residues. Whilst the Food Standards Agency is convinced that pesticide residues are “well within safety levels set by independent experts” there is growing concern that measurement and sampling techniques may not be rigorous enough.

Lettuces have been sampled almost every year since 1994 because tests have revealed high levels of several pesticides, including two illegal ones, chorothalonil and vinclozolin, both so-called ‘gender-bending’ or endocrine-disrupting chemicals with proven anti-maleness effects. The reasons why the ‘flat’ or butterhead lettuces are so bad for residues, is because they are now grown year round in protected environments, like polytunnels. With cropping, sometimes up to six in a year, on the same soil, the intensive nature of the system requires heavy applications of agro-chemicals:

- to prevent a build up of pests and diseases,
- to enhance soil nutrients, and
- to disinfect the soil.

Growers are often locked into this sort of system because of the procurement systems and requirements of supermarkets and ultimately, all of us the consumer! What is being required

[2] This annual survey covers some 3000 formers and growers in the UK

of growers, is increasingly awesome – it is no longer enough to be a good horticulturist; they need a degree in chemistry and plant biology as well!

This is one side of the industry, other more positive developments such as Unilever's Sustainable Agriculture Initiative[3] (case studies and Box 1) paint a much brighter picture of developments to secure more sustainable production procedures for vining peas, tea, spinach and tomatoes. In the Unilever initiative, production is measured and assessed against ten indicators of sustainability:

- Soil loss
- Soil health
- Nutrients
- Pest management
- Biodiversity
- Product value
- Energy water
- Social and human capital
- Local economy

References

A vision for sustainable agriculture from the SD Commission
Eat the View from the Countryside Agency
Farming and Food: a sustainable future from the Cabinet Office
Foundations for our Future – Defra's sustainable development strategy
Sustainable food procurement initiative see http://www.defra.gov.uk/farm/sustain/procurement/
Towards sustainable agriculture: a pilot set of indicators see http://www.defra.gov.uk/farm/sustain/pilotind.pdf

[3] http://www.growingforthefuture.com/start.htm

Production Horticulture
Industry Overview

Summary

Scope:	Businesses and Employment:
The production of fruit, vegetables, glasshouse crops, plants, flowers and bulbs, nursery stock, tree production and mushrooms.	• Estimated there are 12,800 businesses currently employing 69,800 people. • 31% of the workforce is estimated to be self-employed • 40% of businesses are estimated to be sole proprietors.
Workforce Characteristics: • Males account for just over half of the workforce at 56%. • Over a quarter (27%) work part-time. • 42% of businesses reported employing casual staff over the last 12 months. • 21% of the workforce are estimated to be over 55 years of age.	**Regional Concentrations of the Workforce:** • England accounts for 87% UK production horticulture employment. • Of which: - SouthEast (19%) - Eastern (13%) - SouthWest (11%) - NorthWest (11%) • Scotland (7%), Wales (4%), Northern Ireland (2%).

Current Position and Assumptions for the Future

Current Position:

• Production horticulture is generally labour-intensive, and in many sectors characterised by a growing use of technology in production.
• Horticultural food crop production is facing increasing competition from Europe and the southern hemisphere, recently exacerbated by the strength of the pound.
• Quality and consistency is critical, growing demand for improvements in the quality of produce, grading, packing and labelling.
• Supermarket chains now dominate the marketplace, contract growing has now become commonplace along with marketing through co-operative or contract arrangements between growers. Some smaller growers are experiencing difficulties and business closures have been reported.

Future:

• Industry influenced by a range of factors including food prices and subsidies, retail spending, and public sector spending on greenspace.
• There is a move to increase mechanisation and more use of production and information technology is expected as more complex production systems are introduced to increase productivity and consistency.
• Demands for improved quality and consistency are expected to continue, making quality assurance and control more critical.
• The diversity of both food and ornamental crops can be expected to increase, along with plant breeding and propagation techniques.
• Growth in the industry is expected with a continuing interest in amenity crops and improved competitiveness in the food crop sector as the pound weakens.

Source: Skills Foresight 2001. A dialogue for action Lantra National Training Organisation
http://www.lantra.co.uk/products/SkillsForesightReport2001.asp

Landscaping

Industry Overview

Summary

Scope:	Businesses and Employment:
Landscape management and maintenance, landscape design and construction, amenity arboriculture (tree maintenance); includes the management and maintenance of sports turf as well as private, heritage and botanic gardens, commercial grounds and public parks and greenspace.	• Estimated there are 37,800 businesses currently employing 112,400 people. • 37% of the workforce is estimated to be self-employed • 63% of businesses are estimated to be sole proprietors.
Workforce Characteristics: • Male dominated at 85% of the workforce. • Over a third (37%) work part-time. • Half of businesses reported employing casual staff over the last 12 months. • 10% of the workforce are estimated to be over 55 years of age.	**Regional Concentrations of the Workforce:** • England accounts for 90% UK landscaping employment. • Of which: - SouthEast (17%) - London (16%) - NorthWest (14%) - SouthWest (11%) • Scotland (4%), Wales (4%), Northern Ireland (4%).

Current Position and Assumptions for the Future

Current Position:
• Landscaping (hard, soft and interior) is a growing sector, but with several significant trends; - Private and commercial landscape firms have seen growth boosted by construction within the 1980s, and by contracting out of public sector maintenance during the 1990s, growth has now slowed but the sector is still buoyant. - Public sector demand for leisure facilities has increased the demand for sports ground managers, particularly golf courses. - Public sector employment has been driven downwards by compulsory competitive tendering in the 80s. - Public sector employment for landscape maintenance has seen a move towards use of mobile teams and contractors. - The interior landscape sector has had large growth over the last five years with company take-overs, now there is a rationalisation of the sector focusing heavily on customer service. • Higher quality work and improved competitiveness have become increasingly important, however high levels of demand has also attracted unskilled operators into the industry.
Future: • The industry is influenced by the strength of the construction sector, retail spending on leisure and public spending on greenspace. • Although public sector spending and construction are expected to slow, private and commercial influences are expected to bring growth to the industry over the next 2-3 years. • Best value in the public sector is driving a demand for improved skills within the industry. • Particularly within the private garden market there is the potential for unskilled new entrants to operate without any form of training or certification. • Increasing need for more highly skilled workers driven by increased awareness of garden design and management, peoples willingness to spend time and money on improving and maintaining gardens, interest in heritage gardens and their restoration, and the increasing importance being given to environmental conservation in landscape management.

Source: Skills Foresight 2001. A dialogue for action Lantra National Training Organisation
http://www.lantra.co.uk/products/SkillsForesightReport2001.asp

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