

Sectoral Road Map: Tillage and Energy Crops

The potential outlined is based on the Tillage Sector Development Plan to 2020 prepared by the Teagasc Tillage Stakeholder Group – see http://www.teagasc.ie/publications/view_publication.aspx?PublicationID=1602.

Market and policy issues

- The medium-term outlook for cereal markets is positive, with steadily increasing global demand and high oil prices contributing to improving but fluctuating prices. Longer-term forecasts are for increasing demand to outstrip supply, leading to increased prices compared to the last decade.
- Crop production is forecast to increase due to world market demand, poor margins in the drystock sector, labour issues, feed demand from an expanding dairy sector, increased exports and possible potential in the bio-energy sector.

Shape and size of the sector in 2020

- The area devoted to tillage and energy crops has the potential to increase by up to 63%, but competition from other enterprises and energy policy issues will determine the scale of increase. In line with the objective of promoting 'Brand Ireland' in the Food Harvest 2020 Report, it is envisaged that more homegrown cereals will be used, particularly in pigs, poultry and dairy diets.
- The number of full-time tillage farmers will be about 1,000, producing close on 60% of output, with 11,000 involved in tillage and energy production at some level.
- The increased need for crop rotation to improve all crop yields, increase protein production, and satisfy CAP demands will result in increased oilseed, pulse, oat and annual forage crops.
- Most tillage farmers will be availing of environmental scheme/greening payments.
- Oilseed rape has the potential to increase to 60,000ha to supply high-value food, feed and industrial ingredients.
- Annual forage crop production will increase, as dairy farmers expand with restricted individual farmland bases.

- The area of perennial bioenergy crops will need to grow to 70,000ha if we are to meet national and EU commitments.

Technical performance

- Cost reductions of 5% will be achieved, focusing on all inputs with particular emphasis on machinery and labour efficiency.
- Annual yield increase target of 1% in wheat and barley by 2020, against a background of pathogen resistance development, difficult rotations and EU directive restrictions.
- All growers will be using integrated pest management (IPM) as prescribed by the Sustainable Use Directive.
- 50% of commercial growers will be recording physical and financial details and comparing to Teagasc benchmarks.
- 75% of commercial growers will be using rotations and/or soil management techniques to improve soil health and crop yields.
- 95% of growers will be following appropriate nutrient management plans.
- The cost of drying willow chips will be reduced to below €10/tonne.

Environmental and land use implications

New market opportunities opening up, as well as greening measures within CAP reform, will drive a wider diversity of cropping.

- Increased targeting of inputs under IPM and regulatory controls will reduce nutrient and pesticide loadings.
- Increasing yields and targeted use of inputs will reduce the greenhouse gas (GHG) cost per unit of production, to among the lowest in Europe.
- Growing 67,000ha of energy crops to meet electricity and heat targets could mitigate one million tonnes of CO₂.
- The use of energy crops alone to meet both the co-firing and renewable heat national targets would mitigate up to 2.8 million tonnes of CO₂.
- Increasing domestic production of protein-rich livestock feeds will reduce the requirements for imports.
- Increased efficiency of manures and sludges will reduce environmental risks.

Tillage (continued)

Research and advisory actions required

- The crop research objective of developing productive, competitive and sustainable production systems will be achieved by focusing primarily on:
 - maximising crop yield potential by developing our understanding of the soil, crop, management and climate factors that limit crop yield;
 - reducing crop production costs by focusing on nutrient use efficiency, integrated disease control and machinery use, as well as weed, pest and lodging control;
 - developing high-value markets for tillage crop products: this has the potential to improve economic viability and provide a wider range of rotational options; and,
 - development of a precision farming approach: understanding variation in crop input requirements will improve targeting of inputs and profitability of crop production.
- Biotechnology will be used for the development of marker- and genomics-assisted breeding approaches to develop varieties of potato, cereals and other crops better suited to Irish tillage systems.
- An effective model for technology transfer through 'BETTER' farms (Business Environment Technology through Training, Extension and Research) will be progressed.
- The use of information and communications technology (ICT) discussion groups, BETTER farms, e-crops, and the e-profit monitor will be expanded to support technology transfer and business development.
- Share farming will be facilitated and promoted to improve farm structures.

Comment

- The tillage and bio-energy crops sector will make a positive contribution to food/feed supply, energy security, environmental improvement, economic activity and mitigation of problems caused by climate change.
- The development of bio-energy will depend substantially on Government measures in support of policy.

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The road map for tillage is available on www.teagasc.ie.

Potential crops areas by 2020

Crops ('000 ha)	2008-11	2020	% Change
Wheat	91.8	105.8	15
Barley	184	223.7	22
Oats	21.1	34.9	65
Total cereals	296.9	364.3	23
Maize	20.8	30.8	48
Oilseed rape	8.1	59.9	640
Perennial bio-energy crops ¹	4.5	66.8	1384
Potatoes	8.7	10.2	17
Pulses	3.5	10.3	189
Beet	8	30	275
Total crops	350.6	572.4	63

¹Note: Bioenergy projection is uncertain and dependent on market and market support initiatives

Technical efficiency improvements.

Factor	Sectoral average		Top 10% of producers 2020
	Current	Target 2020	
Yield improvement wheat t/ha	8.9	10.5	11.0
Yield improvement barley t/ha	7.0	8.5	9.0
Cut costs wheat €/ha	1,150	1,100	1,050
Cut costs barley €/ha	1,000	950	900
Increase oat production '000t	158	246	
Reduce establishment costs of miscanthus and willow €/ha	2,600	2,000	1,800
Reduce drying costs of willow €	30	10	5