Agriculture and weather forecasting

A drought can generally be split into three categories. **Meteorological droughts** occur because of significantly lower than average rainfall over a period of time, and usually precede and cause the other two types of drought. **Hydrological droughts** concern the water levels of a river system over a period of time. They can take more time for the symptoms to appear because they involve the use of stored water without replenishing it. **Agricultural droughts** concern the availability of water to crops in the growing season, although they can also be caused by irresponsible or poorly planned water usage. Most droughts are characterized by a distinct lack of rainfall, but they can also be defined by temperature, groundwater level, and evaporation.

The spring of 2011 was the warmest spring for over 350 years, and the second driest for 100 years. To adapt to this, farmers have been told by the Environment Agency to only water their crops at night, so that the water does not evaporate off during the day and the crops receive the full benefit. Oxygen levels have also fallen in some rivers, so the Agency is looking into pumping oxygen back into several rivers to save wildlife.

In late May, soils were the driest on record across large areas of eastern and central England, causing huge agricultural stresses (on crop yields) and also massively increasing the risk of forest and heath fires. In parts of Kent, the total rainfall in May was just 4mm, a dramatic contrast to north-west Scotland and areas of Lancashire where some districts reported over twice the average rainfall for the month. Spring rainfalls across Wales and central and southern England only totalled about half of the monthly average. This extreme lack of rainfall left hundreds of farmers without irrigation water, because a lot of them get their water from local rivers, which are little better than a trickle in some areas compared with the plentiful stream that there should be at this time of year. In other areas the rivers have completely dried up, leaving farmers with very little option but to let their crop wither.

In June 2011, four regions (Wales, the Midlands, the south-west and East Anglia) were officially declared drought stricken by the Environment Agency. However the Chief Executive of the Environment Agency, Paul Leinster, stated at the time that the drought would not be as bad as that of the summer of 1976, the UK’s worst drought since records began, because of a wet autumn and winter what with all the snow, which sufficiently filled the lakes and reservoirs. In 1976, a dry spring followed an extremely
dry autumn and winter causing horrendous droughts and causing over £500 million worth of crops to fail, leading to a very serious food shortage and a food price increase of 12%.

According to the Telegraph, the prolonged dry spell will have impacts on the production of grain, meaning a potential shortage in foodstuffs such as bread and peas, as well as supplies of beer. The drought could also cost the UK’s farmers as much as £400 million, and in places the combinable crop harvests like wheat and barley may be around 10% lower overall this year than last year. In East Anglia the situation is much worse than in most of the rest of the UK, with crop losses predicted at between 20% and 50%. There are also reports of some farmers losing their entire crop, an event completely unheard of in previous years.

The UK is not the only area affected by the meteorological conditions responsible for the hot weather (caused by areas of high pressure over most of northern Europe). Informa, the market researcher, has reduced its wheat harvest forecasts by 5.4% for the EU, because the high pressure has also affected key areas in France and Germany. The same researcher also lowered its forecasts for Canada by 1.8% due to excessive rainfall, and the USA’s by 5% because of low rainfall in some of the key growing areas (those being northern Texas, Oklahoma, Kansas and Missouri). The price of wheat rose by 70% from May 2010 to May 2011, mainly because of ban on exports put into place by the governments of Russia and the Ukraine, two of Europe’s biggest wheat producers.

Wheat used for food is not the only sufferer of the unseasonal dry spell – the price of wheat grown for animal feed has risen by over 15% over the last month (source: BOCM Pauls, UK’s biggest animal feed supplier), and farmers quite will probably face further price rises for the months of August and September. A tonne of feed wheat, set for delivery in November, will be worth £185, compared to last year’s £94 per tonne.

Straw for pig food has also been predicted to decrease because of the heat and the lack of rain, with pig farmers being told to expect a harvest 15% lower than the five-year average. Arable farmers are being advised to bale all their available hay this year to assist livestock producers, who face a serious shortage of bedding. Doing so however will probably increase prices because it will reduce the amount of movable stock.