

# Sustainable Farming- Teachers' Notes

To put this section into context, teachers are advised first to cover the Case Study on Sustainability with their students before embarking on Sustainable Farming. This can be found within the Sustainability & Sustainable Forestry Case Study and teaching notes are also provided with the Teachers' Notes section of this site. It might even be of benefit to look at or revisit the section on farming in the main Look at Norway resource files, which can be found via the Home page within the Students Cards and Teachers' Notes sections. The content and topic emphasis can hopefully be adapted to encompass the subject matter of a number of disciplines. In England, Wales and Northern Ireland this would include Geography, Environmental Studies, Citizenship and Economics. In Scotland subjects would include Geography, Environmental Studies, Religious and Moral Education (RME), Personal and Social Education (PSE) and Economics. It should be noted that the emphasis throughout has been to encourage the development of a number of cognitive skills as well as in the acquisition of knowledge and understanding.

**Activity 1** on sustainability explores some of the general issues which have arisen in Europe and the more economically developed countries, as a result of the ever-increasing intensity of the agricultural sector. The relentless pursuit of optimum production seems to have taken precedence over every other consideration and given rise to widespread concern as a result. The diagram used in this exercise highlights many of these farming practices and students are required to discuss the impact of these practices from an environmental, ethical and social point of view. In addition they must rank the issues in order of severity and also provide some idea of how their worst effects might be improved or reduced.

Clearly some farming practices, as summarised here, are unsustainable and therefore there has to be some serious rethinking about the role of the farmer in society in the future. At this juncture, students should be asked to consider too, the plight of the farmer in an economic climate where government financial support is being progressively reduced due to pressure from the World Trade Organisation (WTO). At the same time, the pricing policies of the big supermarket chains constantly squeeze producers to maximise their own profits, to such an extent that the farmer can barely make a living.

Extension work on this topic for more in-depth information might be obtainable on the Internet depending on the required emphasis of the subject in question. (For instance, students of RME might wish to dwell on some of the ethical aspects of our 'factory' farming systems to give but one example.)

**Activity 2** focuses on Norway and looks at its farming in relation to the physical problems of the country in comparison with Britain. Here there is an opportunity to familiarise students with the use of the spider or concept diagram as a valuable tool in summarising information quickly and efficiently, both for recording and ease of recall.

**Activity 3** similarly, still on the development of skills, students are required to complete a divided bar graph to show clearly just how little farmland there is in relation to other land uses. All these problems combine in Norway to produce very high production costs and a low degree of competitiveness, which has traditionally required the Norwegian government to support the farmer by way of grants and subsidies.

**Activity 4** requires the student to analyse selected economic statistics. These statistics show that despite all their difficulties, Norwegian farmers have improved their efficiency and productivity considerably.

An analysis of the statistics should note that employment in agriculture has declined by over half, while at the same time, production rose by nearly one third. Although agriculture's share of GDP (Gross Domestic Product) has declined, this can be explained by the burgeoning growth of Norway's oil sector, which contributes an increasing proportion of Norway's GDP in relation to other economic sectors.

The number of farm holdings is also in decline but the total area farmed is virtually the same. This is due to farmers having given up, renting out their land to neighbouring farmers, with the result that the average size of farm production unit has tripled. This has led to a much greater efficiency in terms of productivity, deployment of machinery and labour and consequently in terms of effective capital investment. Although there has been an encouraging growth in efficiency and production, clearly Norwegian farming is a long way from being sustainable on economic grounds alone. However, the Norwegian government, in its negotiations with the WTO, has successfully argued that agriculture should be seen as a multifunctional activity with a wider remit than simply being a producer of food, important as the latter might be.

**Activity 5** emphasises this by taking into consideration other important functions of farming, including its rural development role and its links with the natural and cultural environment. Here again the students should be reminded of the concept of the three-legged stool with its environmental and social components in addition to its economic component, which too often taken as the sole defining criterion of sustainability.

**Activity 6** looks at traditional farming in Norway in the form of a typical fjord farm. Students should download the PDF version and then try to match the lettered descriptions/annotations with the appropriate number. Some descriptions have a couple of places on the picture where they could match to a letter, but this is how they were designed to match:

1a, 2b, 3h, 4l, 5e, 6j, 7g, 8c, 9i, 10f, 11k, 12d, and 13m.

(There are other possible variations, as there are a few descriptions of fields.)

On completion, the exercise can be stuck into their workbook as a record and for revision purposes.

From a study of traditional farming practices it is clear that farming in Norway is of a very low intensity, which in the main is environmentally friendly. However, there is evidence that the outcome of farming activities has been responsible for considerable contamination of water courses. To combat this, in 1998 the government made fertilisation plans mandatory for all holdings applying for production grants. This involves applying fertiliser on farms to pre-agreed standards.

As in other parts of Europe, Norway is now looking to widening its protection of the environment by encouraging organic/ecological farming, the target being 10% of the farmed area by 2009. The current uptake rate of 2.5% is similar to that of the UK at present.

**Activity 7** includes a PDF download which enables the student to produce a choropleth map. This is a classificatory exercise where distributions can be grouped together in order to look for patterns which can be shown by colour or shading. This particular map contains all the counties of Norway and expresses the percentage of their total farming areas which have gone over to ecological farming. A different colour or shading should be chosen to represent each category as indicated.

**Activity 8** looks at some of the pros and cons of ecological farming and students should be made aware that there is an inevitable 'cost' to pay in the form of increased prices. Is the general public prepared to pay this price?

Students might be encouraged to make their own enquiries in this respect by carrying out a survey of parents and relatives to see how widespread the purchase of organically grown foodstuffs might be. Perhaps a class survey could be carried out to determine if there was much difference between conventionally grown and organically grown foods in terms of appearance and taste. The role of Debio should be emphasised here and some time should be taken to discuss why regular inspection and monitoring of farms might be necessary.

**Activity 9** continues with the theme of ecological farming and provides a number of ways in which farms could be much more environmentally friendly. Students should note this in their workbook. It should also be noted that yet again we must be prepared to pay a cost in the form of payments to the farmer to 'manage' or 'steward' the countryside in order for farming to be socially sustainable.

**Activity 10** students should be introduced to the concept of diversification, where farmers are encouraged to extend or diversify activities to include more than the production of food or fibre products. One of these activities is agrotourism, in which tourists are attracted to farms to take part in particular activities or simply to enjoy the peace and quiet of the countryside.

There is increasing evidence to show that the previously popular annual pilgrimage to seek the sun is no longer as attractive as it once was and the activity holiday is now becoming increasingly sought after. (Students might consider some reasons for this e.g. more sophisticated requirements; adverse publicity regarding sun and skin cancers; more affluence as they are usually more expensive than conventional holiday packages; more than one holiday in a year; more choice now available; more publicity and better organisation etc.)

**Activity 11** closes the subject with students completing pie-charts. A PDF of two template pie-charts is supplied below for downloading and using with students who have difficulty drawing pie-charts. Each section of the pie chart represents 5% retention.

[Click here to download template pie charts](#)

The pie charts show that as yet most of the visitors to farms are Norwegian but there is a substantial proportion from foreign countries. These include the obvious neighbouring countries of Sweden and Denmark, but also significant numbers from Germany, the US and the UK.

An extension exercise to complete this unit of work might ask students to read the extracts from the Norwegian Rural Tourist Organisation literature carefully and then design an A4 publicity poster advertising such a holiday on a Norwegian farm using some or all of the information provided. (Students could be allowed to make use of additional information from the Internet, if desired). The following tourist websites are good examples:

[www.norsk-bygdeturisme.no](http://www.norsk-bygdeturisme.no)

[www.norsk-gardsmat.no](http://www.norsk-gardsmat.no)

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