

Plastic bags: A sustainable change?

Shelagh Waddington reports on an activity which incorporates learning about more, and less, developed countries with a focus on sustainable development.

The classroom exercise which is reported in this article grew from a number of concerns. These were that in spite of the best efforts of teachers:

- students learning about less developed countries, particularly those in Africa, tended to see them as being almost totally different from home. The problems which 'they' experienced were totally different from 'ours' and the solutions came from outside;
- sustainable development was perceived as something which either focussed on the very small scale (either at home or in less developed countries) or on a global scale (e.g. climate change); and
- understanding of sustainable development was on a very simplistic level, with very clear-cut decisions about whether something worked or not, without any acknowledgment of 'grey areas' or alternative views.

These concerns need to be addressed.

Rationale for the Plastic Bags exercise

To address these concerns a topic was required that was relevant to both developed and less developed countries. Litter in the environment was identified as an issue that was common to many countries and also one which was familiar to all students. The introduction of legislation in South Africa to

Until fairly recently the relatively low population density and lack of heavy industry meant that environmental quality was generally maintained in the Republic of Ireland, despite a fairly limited range of legislation and a large proportion of waste being placed in landfill. As noted by the Department of the Environment (2005), while there was a Litter Act passed in 1982, 'waste was the last significant area of environmental management to be subject to modern policy development and legislation'. Since that time it has become increasingly obvious that economic development has led (or at least been paralleled by) an increase in the generation of waste, to an extent that this was considered to be unsustainable in environmental terms. In common with most countries, the Irish Government has adopted a policy of 'reduce, re-use and recycle' and introduced legislation and various initiatives to both reduce the amount of material legitimately regarded as waste and also to remove litter from the environment. One such piece of legislation was the Waste Management (amendment) Act (2001) which was designed to reduce the quantity of disposable plastic bags which were used. These were an eyesore when left as litter, were a hazard to animals and also contributed to the landfill totals. To encourage people to use fewer bags retailers were obliged to levy a 15 cent charge for each bag given to customers. In the year prior to the introduction of this levy 1.2 billion free plastic bags were distributed in the country – more than 300 bags per person. In the first year of the levy, consumption fell by 90% and the Revenue Commissioners collected almost €30 million. Many consumers have been encouraged to bring re-usable bags to shops and many shops now supply paper bags rather than plastic ones.

While the overall environmental impact has been good – there are far fewer plastic bags being used (and disposed of) – there may well not have been a major change in the attitudes of many consumers as far larger amounts of paper carrier bags are used than before. These paper bags biodegrade much more rapidly than even the best plastic ones, but they still require valuable resources to produce them and, unless recycled, contribute to landfill and damage the appearance of the environment until they decay.

Other similar proposals include a levy on chewing gum sales, fast food outlets and ATM outlets. The resultant revenue would be used to deal with the litter which results from these sources, but none has been implemented to date.

Figure 1: Plastic bags in the Republic of Ireland.

A White Paper in 2000 proposed legislation restricting the use of plastic bags. This was because 'The discarding of large numbers of bags results in the degradation of the environment. These non-reusable bags are indiscriminately dumped and not collected for recycling or disposal because they have little commercial value, either as a cost to the consumer, or as a raw material for recyclers. The problem is severe in low-income areas where waste collection services are inadequate' (RSA, 2002).

Regulations controlling the production and distribution of these bags were introduced in 2002 and implemented in May of the following year. These provided amongst other things for a minimum thickness for bags used, a levy to be charged on each bag sold, the prevention of the import of non-compliant bags and the promotion of recycling and re-use of the bags.

After one year it was noted that there had been a decrease in animal deaths due to the swallowing of plastic bags, drainage systems were less likely to be clogged by such rubbish, and refuse departments reported fewer bags going to landfill. Other reported positive effects included a decrease in the cost of goods, as the 'hidden' price of the bags was removed, and consumer choice was improved as they could choose whether to pay for bags or save money by using alternatives. There was an 80% decrease reported in sales of bags from manufacturers to retail outlets. Jobs were created in the recycling industry and in the production of heavy duty/re-usable bags. A non-profit company was established 'Buyisa-e-Bag' to assist the development of new employment, financed by revenue from the levy.

However, some negative effects had also emerged in the period since the regulations were implemented. These included some reduction in employment, both in the formal sector, where jobs were lost in plastic manufacturing, and in the informal sector, where people who produced crafts based on plastic bags lost their 'free' source of supply.

Figure 2: Plastic bags in South Africa.

limit the use (or rather control the abuse) of plastic bags in 2003 raised the possibility of exploring the effects of this environmentally-based development.

When a similar tax was introduced in the Republic of Ireland in 2002 (Government of Ireland, 2001), the change was perceived as almost totally beneficial (Figure 1). However, while the environmental results appear to have been equally positive in South Africa, reports have suggested that the overall effects have included some less beneficial consequences, for example in relation to employment (Figure 2).

A further advantage of the topic was that information was readily available from the South African Government website and further resources and information had been gathered on a visit to South Africa by the author in spring 2003.

Launching the exercise

The exercise was designed to be undertaken by students in the Republic of Ireland who were aged 14-15 years, during the Transition Year (TY) Programme. This is a one year programme taken by many students after completion of their first formal exami-

nations (the Junior Certificate) and before undertaking the Leaving Certificate programme in their final two years in secondary school. While it would also be suitable for students of geography during their Junior Certificate course (at a similar age to key stage 3 students in the UK), the relative freedom of the schools to plan their own curriculum during TY means that it is much easier to devote an appropriate amount of time to the work during the TY Programme.

Students need to be already familiar with the basic concept of sustainable development. While the 'Brundtland' definition (WCED, 1987) may be used to summarise this, it can be difficult for less able students to come to terms with. A simpler definition which may be rather easier to understand is: 'Living for today with tomorrow in mind' (Birmingham City Council, 1997). However, this does lack detail and so can be developed using the 'three legged stool' (Figure 3). A short exercise in which the three 'legs' are clearly present will help students to work out exactly what is meant. Students are presented with a description of the development and asked to allocate the suggested effects to one of

the three 'legs'. An example of a suitable project is the Kololi bag project (see Ballin, 2002). A locally-based project from the students' home area would also work well, if available.

Phase 1: Before the legislation

An initial question to the class is one which I was asked in South Africa: 'What is South Africa's national flower?'. While a few students will guess, most respond (as I did) with a blank gaze. The photograph (Figure 4) is then shown.

After the laughter, the work is more formally introduced by a short consideration of the effects of litter (particularly plastic bags) on the students' home environment. In the case of students in the Republic of Ireland, the launch of the task focussed on the recent legislation and its effects.

Examining the situation in South Africa

The first stage of the work consists of a classification exercise, using the format developed by Leat for an exploration of the Great Kanto Earthquake (Leat, 1998). In this exercise students are required to examine a number of statements relating to the issue (Figure 5). These are classified under appropriate headings and subsequently provide the basis for a short piece of writing in which students are asked to decide what are the best solutions to the problem and to consider whether their proposed changes meet the criteria for sustainable development. The classification part of the exercise is completed on a worksheet (Figure 6) which provides both instructions and a framework for recording the answers. To avoid students having to write out all of the statements, it is helpful to number them, so that they can quickly note the relevant numbers under each heading. Ideally the statements should be cut up so that students can manipulate them manually. If the exercise is to be repeated, they should be copied onto card and laminated but if time is short the statements can be presented on a single sheet.

The exercise may be undertaken by students working as individuals but I have found that most students find it helpful to work in pairs, particularly when they are inexperienced in carrying out this type of exercise.

Phase 2: After the legislation

In the next class, a brief review is held of the answers provided by students to Q5, phase 1 about the solutions offered and about their views on whether or not the development will be sustainable. The review should also include some consideration of the reasons behind their decisions, to encourage them to develop their thinking skills,

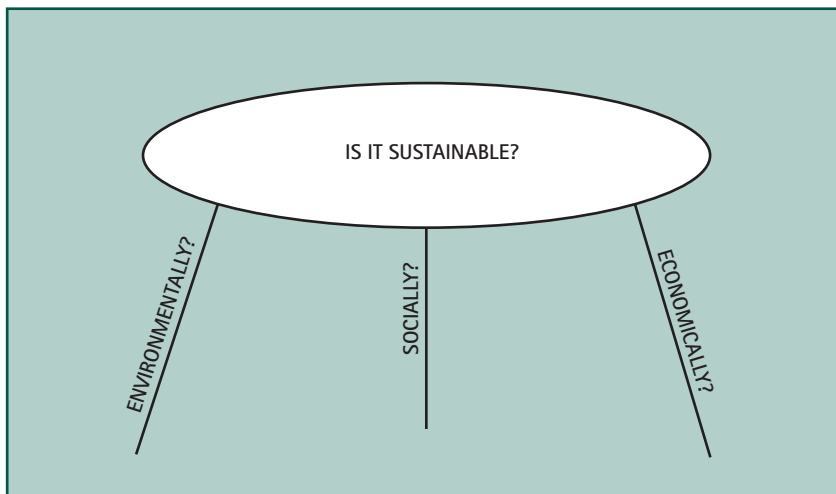


Figure 3: The three legs of sustainable development.



Figure 4: South Africa's national flower – the plastic bag. Photo: Shelagh Waddington.

and (on a more pragmatic note) to check that they have a clear understanding of the various concepts.

The main exercise undertaken by the students involves them reading reports from South African newspapers on the

outcomes of the legislation (available to download at www.geography.org.uk/journals). These reports were obtained from the South African Government website and were obtained as a result of using the words 'Plastic bags' in the search engine.

The original articles were slightly amended to remove repetition and to ensure that the main points were clear and can be supplemented by illustrations, such as Figure 7, which shows bags made from plastic bags.

1. Cows and other animals have choked to death.	6. Recycle the plastic from the bags	11. Drains are blocked by dumped plastic bags, causing flooding	16. Less air pollution
2. Lost jobs in plastic bag companies	7. Extra cost for shoppers if they must buy bags	12. Teach people to be more careful about what they do with used bags	17. Encourage people not to throw bags away carelessly
3. Only give shoppers thicker plastic bags, so they can be re-used	8. Lower costs for local councils for street/drain cleaning	13. More jobs in recycling projects	18. Fewer animals choking to death
4. Unemployed people may not be able to pay for food, education and other needs.	9. Ban all plastic bags	14. Pay people to collect up the used bags	19. Use litter wardens to fine people who throw bags away
5. Charge people for plastic bags, so they will take fewer from the shops	10. Less litter on streets	15. Rivers are polluted by plastic bags.	20. Air pollution is caused by burning plastic bags

Figure 5: Statements – South African Bag Exercise 1.

Task Sheet 1: Plastic Bags – a sustainable change?

Name: _____ Class: _____

Until 9 May 2003, South Africa had major problems because of very large numbers of thin plastic bags which were given away free with shopping. On this day a new law came into effect which, it was hoped would deal with the problems.

After you have finished the work on the sheet you will have thought about

- the problems caused by plastic bags
- possible ways to deal with the problems
- the suggested effects of changes on the lives of the local people and the country (i.e. the sustainability)

Work to be done:

1. Read the statements which you have been given in the envelope.
2. Classify them into three piles
 - impacts of plastic bags
 - possible solutions
 - sustainability factors
 [Hint: there are 4 impacts, 8 solutions and 8 sustainability factors]
3. You should sort the sustainability cards again under the headings of:
 - economic
 - social
 - environmental
 [Hint: there is at least one factor for each of the three headings]
4. Use the information you have now to complete the table below:

The impacts of plastic bags on environment are:	Solutions to the problem are:	Sustainability factors
		Economic effects
		Social effects
		Environmental effects

5. Answer these questions:

- a) Which solution[s] do you think would be most likely to deal with the plastic bag problem? [You need not just use the suggestions, you can use your own ideas too]
- b) Do you think that this development in South Africa is sustainable – i.e. is it a way of 'Living for today with tomorrow in mind'?

Figure 6: Plastic bags worksheet.

On 9 May 2003 a new law came into effect in South Africa which, it was hoped, would deal with the problems caused by the large numbers of free plastic bags which had been used by shoppers. It was designed to reduce the number of plastic bags which were used.

After you have finished the work on the sheet you will have thought about

- the positive effects of making changes in the law
- the negative effects of making changes in the law
- the suggested effects of changes on the lives of the local people and the country (i.e. the sustainability)
- sustainable changes in your own country.

Read the information sheet carefully and use it to complete the tasks below.

1. Look back at your own solution to the problem. Write a sentence comparing your answer with the one chosen by the South African government.
2. The newspaper stories describe some of the effects of the new law. Take information from all of the news items to complete the table here. [Hint: you could use different colours to highlight the different types of effects and changes on the information sheet.]

Positive effects of the ban	Other changes	Negative effects of the ban

3. Look back at your answer and also review the idea of the 'three legs' of sustainable development.
 - (a) Do you think that the South African solution is working sustainably? What are the reasons for your answer?
 - (b) Suggest how you would deal with the negative effects of the ban if you were a member of the South African government.
4. Your country is considering what changes it could make which would improve life for people today, without harming life for the future. Write a letter to the Minister for the Environment in your country suggesting one change other than introducing a 'plastic bag' law which you think should be made. You will need to explain:
 - what the problem is that you want to tackle
 - how you would deal with it
 - how the change is 'sustainable'.

Figure 8: Information sheet – after the ban.

The work uses the format of an 'Analysis and Reconstruction DART', similar to those described by Roberts (2003). Students read the articles supplied and identify the effects of the ban. Additional information obtained during the author's visit to South Africa and at the Geographical Association Conference, 2004, also included in a subsequent publication (Wilmot and Norton, 2004), was also incorporated. Guidance on what is required of students for this task is supplied in Figure 8.

The students then review their initial ideas and relate these to what actually happened. They finally apply the concept of a sustainable change in their own environment.

Phase 3: Follow-up

While the exercise can finish at this point, follow-up work can be beneficial in ensuring that the main rationale for the exercise is reinforced.



Figure 7: Bags made from plastic bags, Grahamstown, Eastern Cape, South Africa. Photo: Shelagh Waddington.

For example, similarities between the problems of less and more developed countries can be emphasised and students can consider whether their proposed 'home' sustainable projects would be transferable to less developed countries. An opportunity to develop group working and presentation skills would involve students working in groups to select the best project in the group and then to present this to the rest of the class.

Conclusion

The overall exercise provides an opportunity for students to explore the general area of sustainable development and also to focus on developing understanding of and empathy with people in countries that are very different from their own. Unfortunately, as with all value-laden areas of education, it is not possible to be sure about the outcomes in terms of real changes in attitude or belief, but the work does at least force students to consider their own thoughts and ideas in terms of understanding of development issues and of sustainability.

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