The aims of these sheets are:

- *to enable the children to respond to a factual description by means of drawing and poetry.*
- *to develop understanding of the possible impact of economic activity on an environment*

You may wish to discuss the pictures on Sheet 23B before the children actually write their speeches, or you may provide reference books (e.g. on mining) to help them think of things they could do in the short term (e.g. employ local people at all levels, invest a proportion of the profits in environmentally friendly processes or research and development with regard to the medical, food resource and timber use of trees) and in the long term (e.g. have a commitment to restore the land to forestry).

More advanced students may be able to appreciate that not all tropical forests are what we call rainforests. These are strictly speaking the evergreen forests where rainfall is at least 4,000 mm a year with virtually no dry season. There is also the moist forest which receives at least 2,000 mm of rainfall a year with no more than 3 months with less than 100 mm. The deciduous forest in the tropical zone receives 1,500 mm of rainfall a year with 4–6 months having hardly any rain. Finally there is the dry woodland, or savannah, which receives less than 1,000 mm of annual rainfall and which often suffers prolonged drought. In multicultural classes, make links, as appropriate, with information relevant to the children's family backgrounds.

WHY ARE TROPICAL FORESTS IMPORTANT?

Because they are a vital part of the ecology of the world (the wildlife, and the plant life) and bring other benefits to mankind. Tropical forest covers around half the land areas of most of the world's tropical countries.

Tropical forests are still large enough in most tropical regions to affect the world's weather patterns and climate. They benefit the local climate through rainfall, soil stability and water quality. The younger trees absorb carbon dioxide and give off oxygen. The older trees supply timber for building homes, making furniture and timber products of higher value for export – affecting the potential for improvement in the local economy.

All forests are a treasure trove of plant and animal life. Many of the medicines we use today stem from trees, plants or organisms in the tropical forest. This "bio-diversity" is ever changing. Some species have been lost as people convert forest to agriculture, mining or towns, but other species appear or are yet to be discovered. The forests are ever changing. In most tropical regions, where rainforest exists, known species range from a handful of timber-related species to hundreds of relatively unknown or non-commercial (too dense, too light or non-durable, too difficult to use) species.

Tropical forests provide a home and a living for many people from the native tribesmen, fishermen along the rivers, villagers where rivers meet, to timbermen working there to bring logs and firewood to villages and towns for many uses.

WHY ARE WE LOSING TROPICAL FORESTS?

The land is needed for other uses, primarily agricultural or industrial development, particularly in the developing countries. All governments of tropical nations make up their minds what forests are capable of conversion to effective long-term agriculture and to provide work and economic benefit for the local people.

As populations increase, so more land is needed for agriculture. People, migrating from overcrowded cities, arrive in the tropical regions and slash and burn the forest for a primitive form of agriculture, so destroying forests where the soil is totally unsuitable for long-term agriculture. It is important that tropical countries develop sustainable management plans to combat this problem. Nearly all tropical nations have now adopted land usage policies to control this migration, educate the people to grow and harvest suitable forest products and to ensure that large areas of forest are kept as biological reserves, National Parks and permanent productive forest estate.

Tropical trees are wanted either for fuel or for conversion into another product, e.g. building timber, furniture, paper etc. Most of this timber is used in the country where it is logged. Less than 10% of tropical timber is sold in various forms to earn foreign currency.

Forests are destroyed by natural or man-made disasters, e.g. insect plagues, fungal attack, hurricanes and fire, but they can also be destroyed by bad forest management and uncontrolled forest logging. This last disaster is the most readily eliminated by good local and national government monitoring, supported by International Conventions and financial aid.

The Rio UNCED Conference of 1992 resulted in the Statement of Forest Principles. These are being developed into national programmes and supported by existing intergovernmental programmes such as ITTO, the UN Commission on Sustainable Development, the World Bank and a large number of nationally and internationally supported non-government organisations (NGOs), such as The World Wide Fund for Nature.

ACTIVITY 1

You could ask the children to empathise with the different views of the future of Papua New Guinea as seen through the eyes of its people such as a village chief, mine worker, youth leader, rascal, film actress, politician etc. as expressed in "Faces and Voices of Papua New Guinea – a National Family Album".

ACTIVITY 2

Discuss with the children the other energy crisis, that is relevant to developing countries. Where appropriate, contextualise the information to take account of the ethnic minority children in the class.

These points may be useful:

- The majority of people in developing countries rely on wood as fuel to cook their food.
- 70% of these do not have a secure supply of fuel wood.
- In many areas it costs as much to heat the food bowl as to fill it (i.e. in time spent searching for fuel).
- Animal dung is burned when fuel wood is scarce.
- Animal dung is normally used as fertiliser. Without animal dung, the crop yield is poor.
- Half the wood cut in the world today is used as fuel for cooking and heating, four-fifths of this in the developing world.

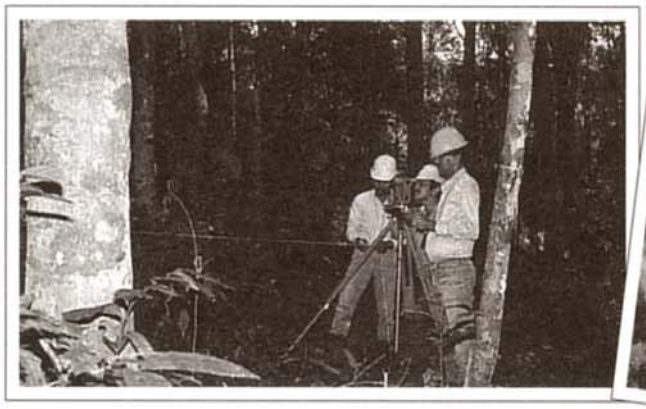
Forestry management in the southern hemisphere has to take account of:

- the need for fuel wood plantations.
- growing trees and food crops side by side.
- restoring tree cover on upland watersheds.

The concept of sustainable forestry can be reinforced by examining the procedures for harvesting timber in other countries. For further information, contact the Timber Trade Federation and the World Wide Fund for Nature (see *Useful Addresses*).

ACTIVITY 3

The concept of sustainable forestry could be reinforced by discussing the strict procedures governing harvesting of timber in the rainforests of Malaysia.



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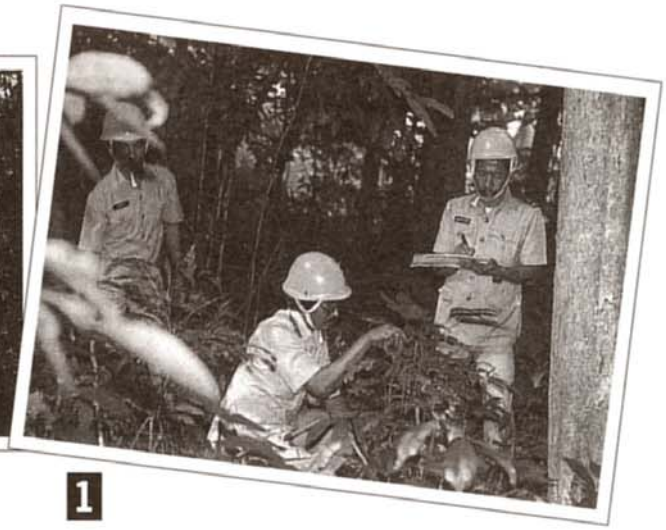

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1. A detailed inventory is carried out of all the trees in a Production Forest Area. Only certain species of trees are useful for timber.

2. Forestry engineers plan carefully the route along which felled trees will be removed.

3. Only trees above 45cm (dbh) can be felled using directional felling. At least 32 trees per 2.5 acres of at least 30cm in diameter must be left after harvesting. These trees will give more timber in 25 years. The trees selected for felling are marked to show the direction of felling to minimise the damage to other trees.

4. Data is collected on water quantity and quality, and on soil fertility to study the impact of logging activities.

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