1. In what ways might there be a conflict between the goals of economic growth and the concept of sustainable development?

Students could start off by clarifying their understanding of the concepts of economic growth, an increase in the production of goods and services, and sustainable development. For the latter, students could begin with the definition given by the Brundtland Report in 1987 (see http://www.un-documents.net/our-common-future.pdf). They could be referred to the Earth Institute's website (http://www.earth.columbia.edu/articles/view/1791) which states that sustainability refers to, 'managing the world's economy in a manner consistent with the continued healthy functioning of Earth's ecosystems, oceans, atmosphere and climate', while development is concerned with 'continued social, political and economic progress aimed at the improvement of global human well-being, especially for the poorest of the poor'.

Students should address the arguments advanced by environmentalists/greens, who believe that growth and sustainable development are incompatible, and their opponents, the expansionists.

The environmentalists/greens argue that growth, through the increased production of goods and services, leads to an accelerating degradation of the environment. It increases greenhouse gases and causes climate change. As evidence, they point to the scientific studies of long-term changes in temperature and increases in acidity in the sea. They also contend that economic growth uses up finite natural resources and leads to the over-exploitation of other natural resources such as fish and timber. They are not convinced that technology can provide adequate substitutes to fill the gap in natural resources. They see market prices as reflecting current availability and not taking into account ecological scarcity. For them, the push towards greater globalization, free markets, and free trade aimed at increasing growth all contribute to ecological degradation. They also claim that uncontrolled growth normally benefits those holding most income and wealth, whilst the effects of the degradation of the environment are felt most by the poor.

Expansionists generally believe in leaving market forces to deal with environmental problems. They claim that, because of mankind's ability to be innovative, technology will be able to create substitutes to compensate for depleted natural resources. They also assert that the price of natural resources has been falling over the long term, indicating an increasing availability of natural resources. They argue that negative externalities of production such as the cost of pollution and waste disposal are examples of market failure that can be internalized. They advocate the freeing up of markets, the privatization of resources, and reductions in trade barriers to promote growth, arguing that the best way to improve the environment is to become rich. The Danish economist, Bjorn Lomborg is perhaps the best known 'media' academic who takes this optimistic view of growth and warns of 'knee jerk' reactions to environmental problems. (See his website at http://www.lomborg.com/about.)

There is a growing body of research that questions the use of Gross National/Domestic Product figures as a measure of human progress (see Counterpoint Box 2.2, p. 45). There is a growing call from the major international agencies to develop a broader index to incorporate sustainable development goals. See, for example, http://www.stat.si/doc/drzstat/Stiglitz%20report.pdf which is an executive summary of a report by leading economists, commissioned in 2008 by the French Government, but which has been widely taken up by the major international governing institutions such as the IMF and World Bank.

2. Why do developing countries face particular problems in relation to environmental problems?

Students could start off by clarifying their understanding of the terms, developed and developing economies. Developing countries are, by definition, poor in terms of income per head. They usually have large proportions of the population living in poverty. Therefore, they have a great incentive to promote economic growth, even when the process is likely to be damaging to the environment. Polluted air and contaminated water is a price developing countries seem prepared to pay to industrialize and to produce enough food to feed their people.

Developing countries may have difficulties in implementing the same environmental standards as richer countries. They may see them as too strict, not supported sufficiently by scientific evidence, or they may not be committed to them because they have had no say in the setting of the standards—especially where they have been established by the rich nations.

In addition, some developing countries will either have little or no environmental regulation. Even where there is regulation, the country authorities may not have the will or the resources to enforce it. They may resist pressure to change, especially where the absence or laxity of environmental regulation makes the country an attractive location for foreign direct investors (e.g. for heavily polluting/high carbon emitting industries).

In the period 2000–15 the Millennium Development Goals (MDGs) were set out by the United Nations to measure the extent of progress that the poorest countries might make from the inception of the MDGs in 2000 to a target date of 2015. In 2015 the MDGs were replaced by the Sustainable Development Goals, which explicitly recognized that elimination of poverty and environmental problems are inextricably linked and therefore require a comprehensive sustainability agenda. See https://www.un.org/sustainabledevelopment/sustainable-development-goals/.

Many developing and emerging economies have already begun to prioritize environmental security as a primary aim of their development strategies. See, for example, Ecuador and Bolivia's adoption of an 'Earth Charter' as an integral part of their constitutions (see http://therightsofnature.org/ecuador-rights/). The tiny

Himalayan kingdom of Bhutan has sought to underpin its development policy with a much broader Gross Happiness Index which incorporates sustainable development indicators (see http://www.grossnationalhappiness.com/).

3. What are the main risks that face business in relation to water security?

As outlined in the chapter, the natural environment can be characterized as providing the sources of natural resources on which business activity depends, as well as potential sinks to eradicate the pollution that might occur.

While inevitably it is fossil fuels that attract much media attention in relation to environmental problems, water is also a natural resource that has a large impact on sustainable development. For an extensive review of the impact of water security on business, see http://www3.weforum.org/docs/WEF_WI_WaterSecurity_WaterFoodEnergyClimateNexus_2011.pdf.

Many businesses need access to water in order to produce their goods. This is obvious in relation to agriculture, and food and drink manufacturers so it is not surprising that global companies like Nestlė and Coca-Cola have a direct interest in securing access to water. However, a whole host of other industries rely on secure water supplied to operate. Students may usefully suggest some others.

Business activity can be disrupted by flooding, drought, or scarcity of water. Conflicts can arise over access to water supplies either directly, with businesses being accused of depriving local communities of water, or indirectly as disruptions to supply of commodities as a result of flooding/droughts. This may increase food prices and thus cause political instability, or at the very least cause a rise in costs.

4. If there are water security issues in relation to quantity and quality, who should take the lead for ensuring that there is universal access to adequate supplies of safe and clean water?

The central issue in this debate lies in what forms of ownership should water be provided? For many environmental activists, water is the staff of life and should be safeguarded through government control and should be freely available. For others, the most efficient way of protecting water supplies and ensuring economic efficiency is for water supply to be privatized (albeit under government regulation).

For a pro-market view, see http://www.globalwaterforum.org/2015/04/27/understanding-water-markets-public-vs-private-goods/

For a critical view, see http://www.theguardian.com/global-development/2015/jan/30/water-privatisation-worldwide-failure-lagos-world-bank