

# DP IB Environmental Systems & Societies (ESS): SL



Your notes

## Environmental Value Systems

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## The Environmental Movement

# Development of the Environmental Movement

- The environmental movement is the term used to describe humanity's **increasing awareness** of the importance of conserving the **environmental health** of our planet
  - Although it takes different forms in different countries and across different groups of people, it is essentially a worldwide campaign to continue raising this awareness and to **coordinate action** to help reduce the **negative effects** humans are having on planet Earth
  - The environmental movement promotes **sustainable development** and the **sustainable** use of natural resources - this can be achieved by implementing changes in public policy and encouraging changes in our individual behaviours
- Various **historical events** have been key in the development of the environmental movement
- These events and influences have come from many different areas, including:
  - Literature
  - Media
  - Scientific research
  - Technological advancements
  - Major international disasters
  - International agreements

### Literature and Media

Event	Year	Description	Effect on Environmental Movement
Silent Spring by Rachel Carson	1962	A book outlining the <b>harmful effects</b> of the pesticide <b>DDT</b> passing along food chains to top predators	Led to widespread concern about the <b>dangers of pesticide use</b> and increased awareness of <b>environmental pollution</b>
The Limits to Growth report	1972	A report, commissioned by the Club of Rome (a global think tank), outlining the effects of a rapidly <b>increasing global population</b> on Earth's <b>finite natural resources</b>	Increased awareness of the dangers of <b>unsustainable natural resource use</b> (best-selling environmental publication in history)



Gaia by James Lovelock	1979	The first book to suggest that Earth is like a 'living organism' (a <b>self-regulatory system</b> that maintains its <b>climate</b> and <b>biology</b> )	Showed how humanity has the power to upset the <b>delicate balance</b> of the Earth's <b>self-regulating processes</b> , with potentially deadly consequences
An Inconvenient Truth	2006	A documentary film of former US Vice President Al Gore giving a lecture on <b>climate change</b> and its <b>consequences</b>	The film got extensive publicity, reaching a huge <b>worldwide audience</b> and triggering a <b>major shift in public opinion</b> in the USA

### International Conferences and Agreements

Event	Year	Description	Effect on Environmental Movement
Stockholm Declaration	1972	The first major United Nations (UN) conference on <b>international environmental issues</b> , held in Stockholm, led to this Declaration	Influential in setting <b>environmental targets</b> and shaping <b>action</b> at the local and international level
Rio Earth Summit	1992	UN Conference on Environment and Development, attended by 172 nations - outlined that <b>radical changes in attitudes</b> towards the environment needed to <b>limit the damage</b> to the planet	Had a global impact - led to the adoption of ' <b>Agenda 21</b> ' (a comprehensive action plan to ensure sustainable development) by over 178 parties
Kyoto Protocol	1997	An international treaty building on the UN Framework Convention on Climate Change (UNFCCC) that committed state parties to <b>reduce greenhouse gas emissions</b>	192 parties committed to reducing their emissions of greenhouse gases such as <b>carbon dioxide, methane</b> and <b>hydrofluorocarbons (HFCs)</b>
Rio+20	2012	UN Conference on Sustainable Development, marking the 20th anniversary of the Rio Earth Summit - aimed to secure further <b>political commitment</b> from nations to <b>sustainable development</b>	Helped to <b>assess progress</b> on various <b>internationally agreed targets</b> (e.g. reduction of greenhouse gas emissions) and <b>identify emerging environmental challenges</b>




Paris Agreement	2015	An international treaty agreed by 195 parties at <b>COP21</b> - aimed to hold the increase in global average temperature to <b>below 2 °C</b> above <b>pre-industrial levels</b>	50% cut in greenhouse gas emissions needed by 2030 - every country (including developing countries) agreed to <b>set targets</b> and regularly <b>report on their progress</b>
Glasgow Climate Pact	2021	At COP26, an international agreement between 197 countries was reached, which <b>reaffirmed</b> the Paris Agreement's <b>global temperature goal</b>	First climate deal to explicitly commit to <b>reducing coal use</b> - a late intervention from China and India <b>weakened</b> the pact's wording to "phasing <b>down</b> " coal (rather than phasing it <b>out</b> )

### Environmental Disasters

Event	Year	Description	Effect on Environmental Movement
Minamata disease in Minamata, Japan	1956	Chemical factories released toxic methyl mercury into waste water - <b>mercury accumulation</b> in fish and shellfish caused mercury <b>poisoning</b> in local people - <b>severe symptoms</b> (paralysis, death, or birth defects in newborns)	Raised awareness of the <b>risks of industrialisation</b> and the need for <b>environmental regulations</b> and checks to be imposed on industries
Industrial accident in Bhopal, India	1984	Explosion at a <b>pesticide plant</b> - released 42 tonnes of toxic methyl isocyanate gas, killing 10,000 people in the first 72 hours and 25,000 in total	Raised awareness of the <b>risks of industrialisation</b> and the dangers of chemical factories
Chernobyl nuclear meltdown, Soviet Ukraine	1986	Nuclear reactor exploded - <b>radioactive fallout</b> covered large areas of Ukraine, Belarus and Russia - 336,000 people had to be <b>evacuated</b> and <b>cancer incidence increased</b> in surrounding area	Reinforced society's <b>fear and negative perceptions</b> surrounding <b>nuclear power</b>
Fukushima nuclear meltdown, Japan	2011	Earthquake-generated tsunami hit nuclear power station and caused a <b>meltdown</b> in three of the six reactors - 110,000 people <b>evacuated</b>	Japan temporarily halted all nuclear power to carry out new safety checks, leading to <b>increased dependence on fossil fuels</b> - contributed towards Germany's decision to backtrack on its

		nuclear power plans and <b>revert to fossil fuels</b>
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## Worked Example

Outline how one environmental disaster and one international agreement have contributed to the development of the environmental movement.

### Answer

The Minamata disease and the Paris Agreement are two significant events that have had a major impact on the development of the environmental movement

#### Minamata Disease:

In the 1950s and 1960s, the Japanese town of Minamata was affected by a severe environmental disaster caused by industrial pollution. A chemical company had released large amounts of mercury into the water system, which caused a number of people in the area to develop Minamata disease, a neurological disorder that led to severe disability and death.

The incident drew international attention to the harmful effects of industrial pollution on human health and the environment, leading to increased public awareness and calls for stronger environmental regulations. The disaster sparked the formation of grassroots environmental groups in Japan and increased public pressure on the government to take action to prevent similar incidents from happening in the future.

#### Paris Agreement:

The Paris Agreement is a global treaty signed by 195 countries in 2015 to address the threat of climate change. It aims to keep global temperature rise below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. The agreement represents a significant step forward in international efforts to combat climate change and has helped to mobilise public and political support for environmental action.

The Paris Agreement has been credited with accelerating the development and adoption of renewable energy technologies, as well as increasing public awareness of the need to transition to a more sustainable and low-carbon future. The agreement has also led to increased political pressure on countries to take action to reduce their greenhouse gas emissions and has helped to continue developing the global environmental movement around the goal of addressing climate change.



## Examiner Tips and Tricks

You don't need to learn ALL of these historical events that have contributed to the development of the environmental movement! You could choose three or four of these events (it might be a good idea to select at least one from each of the tables above), learn what happened, and make sure you can explain why each one was important in shaping the environmental movement.



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## Environmental Value Systems



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# Environmental Value Systems

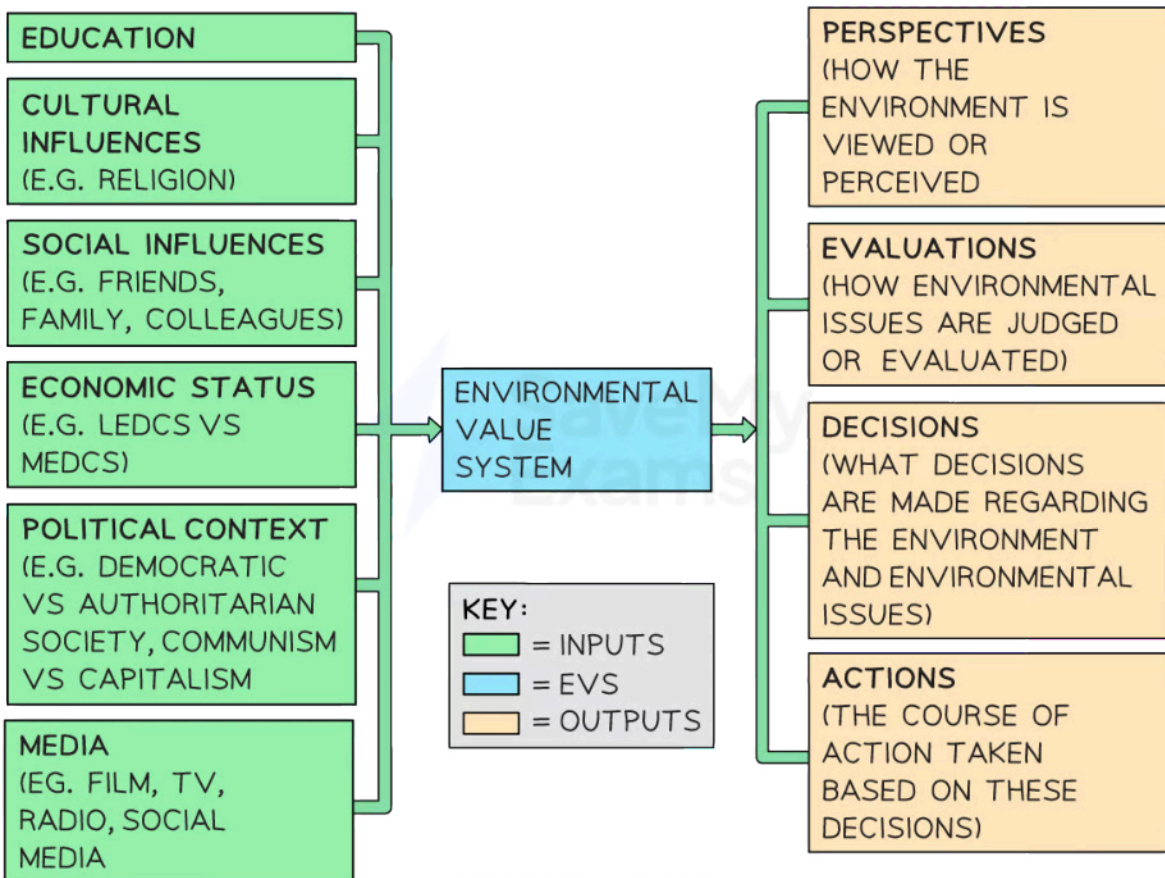
- An environmental value system (EVS) is the way that an individual, or any group of people, **perceives** the environment and the **resources** it provides them with
  - That includes you - your environmental value system determines the way that you perceive and evaluate **environmental issues**, as well as the course of **action** you might decide to take regarding these issues
- A person's or group's environmental value system is shaped and influenced by a **variety of factors**, including cultural, religious, social, political, economic and environmental factors
  - These factors act as **flows of information** into individuals within **societies**
  - Individuals then **process** and **transform** this information into their **perception of the environment** and how to act on environmental matters

## EVS Inputs & Outputs

- An environmental value system is considered as a **system** because it is determined by a set of **inputs** (i.e. the factors described above) and generates a set of **outputs** (in the form of the person's or group's perceptions, evaluations, decisions and actions)



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*Like any system, an environmental value system (EVS) has a set of inputs and a set of outputs*



## Categorising Environmental Value Systems



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# Spectrum of Environmental Value Systems

- Although there is a very **wide spectrum** of environmental value systems, EVSs can be broadly divided into three categories. These are:
  - **Ecocentric** environmental value systems (ecocentrism)
  - **Anthropocentric** environmental value systems (anthropocentrism)
  - **Technocentric** environmental value systems (technocentrism)



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ENVIRONMENTAL VALUE SYSTEM		
ECOCENTRISM (NATURE-CENTRED)	ANTHROPOCENTRISM (PEOPLE-CENTRED)	TECHNOCENTRISM (TECHNOLOGY-CENTRED)
NATURE HAS INHERENT VALUE	HUMANS MUST SUSTAINABLY MANAGE GLOBAL SYSTEMS...	TECHNOLOGY WILL PROVIDE THE SOLUTIONS TO ENVIRONMENTAL PROBLEMS...
MINIMUM DISTURBANCE TO NATURAL PROCESSES	...THROUGH TAXES, LEGISLATION, ENVIRONMENTAL REGULATIONS ETC.	...DESPITE HUMANS CONTINUING TO EXPLOIT NATURAL SYSTEMS AND PUSH THEM TO BEYOND THEIR NORMAL LIMITS
ECOLOGY AND NATURE ARE CENTRAL TO HUMANITY	EVERYONE IN SOCIETY SHOULD PARTICIPATE IN ENVIRONMENTAL DECISION-MAKING...	WE NEED TO UNDERSTAND NATURAL SYSTEMS SO THAT WE CAN CONTROL THEM
SELF-IMPOSED RESTRAINT ON USE OF NATURAL RESOURCES	...AS SMALLER, LESS POWERFUL SOCIETAL GROUPS MAY HAVE THE BEST KNOWLEDGE ABOUT HOW TO BE ENVIRONMENTAL STEWARDS (E.G. INDIGENOUS GROUPS)	SCIENTIFIC RESEARCH AND PREDICTIONS SHOULD INFORM POLICY
LESS MATERIALISTIC SOCIETIES THAT HAVE GREATER SELF-SUFFICIENCY AND ARE SUSTAINABLE	ECONOMIC GROWTH AND EXPLOITATION OF NATURAL RESOURCES CAN CONTINUE IF MANAGED CAREFULLY	EMPHASISES THE IMPORTANCE OF SUSTAINING THE GLOBAL MARKET...
INTEGRATES SOCIAL, SPIRITUAL AND ENVIRONMENTAL APPROACHES	PRESERVING BIODIVERSITY CAN HAVE ECONOMIC AND ECOLOGICAL ADVANTAGES	...AND ENSURING CONTINUED ECONOMIC GROWTH
PRIORITISES BIORIGHTS AND EMPHASISES IMPORTANCE OF ENVIRONMENTAL EDUCATION		

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*There is a very broad range of environmental value systems held by people and groups around the world – on a basic level these EVSs usually fall into one of three main categories*

## Ecocentrism, Anthropocentrism & Technocentrism

### Ecocentrism



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- Ecocentrism is a **philosophical** and **ethical** approach that prioritises the **intrinsic value** of nature and the environment **over human needs and interests**
- This approach emphasises that all living organisms and ecosystems have **inherent worth** and should be **protected** for their own sake
- Ecocentrism advocates for **sustainable practices** that maintain the **balance** and integrity of ecosystems and the natural world, rather than exploiting them for human benefit
- This approach is often associated with environmental movements and **conservation efforts** that aim to protect biodiversity, ecosystems and natural resources

## Anthropocentrism

- Anthropocentrism is a worldview that places human beings at the centre of the universe, **prioritising human needs and interests** over those of other living beings and the environment
- This approach emphasises that humans have the **right** to use natural resources and ecosystems for their **own benefit**
- Although an anthropocentric viewpoint would ideally involve sustainable managing global systems, in reality anthropocentrism often results in **unsustainable** practices such as **overexploitation** of natural resources, habitat destruction, and pollution
- This approach only values preserving biodiversity when it can provide **economic and ecological advantages to humans**
- This approach is often **criticised** by environmentalists and conservationists for ignoring the intrinsic value of nature and its ecosystems

## Technocentrism

- Technocentrism is a worldview that places **technology** and **human ingenuity** at the centre of all problem-solving and decision-making processes, often overlooking the impact on the environment and other living beings
- This approach emphasises the use of technology to **overcome** environmental problems and maintain **human well-being**
- Technocentrism often assumes that all environmental problems can be **solved** through **technological innovation** and economic growth, which may lead to neglect of the need for conservation and sustainability
- This approach is often criticised by environmentalists for being **short-sighted** and ignoring the **complex** and **interconnected nature** of environmental issues

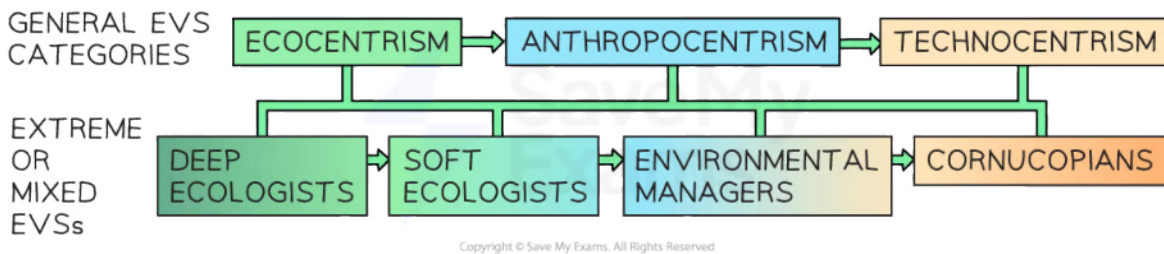


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## Contrasting Environmental Value Systems

### Further EVS Categories

- The spectrum of environmental value systems (from ecocentrism to anthropocentrism to technocentrism) can be broken down into further categories
  - These categories can either be extreme forms of a particular end of the EVS spectrum (such as **deep ecologists** and **cornucopians**), or they can lie somewhere between two EVSs (such as **soft ecologists** and **environmental managers**) as they contain a mixture of different values and perspectives from the three broader EVS categories
- EVSs vary greatly depending on cultures and time periods
  - This means that in reality, they rarely fit simply or perfectly into any single EVS classification



*Ecocentrism, anthropocentrism and technocentrism can be divided into further EVS categories*

### Deep Ecologists

- View nature as having **intrinsic value** beyond its usefulness to humans
- Believe in preserving biodiversity and ecosystems as a **moral obligation**
- Advocate for **reducing human impact** on the environment and promoting sustainability
- Prioritise the needs of the environment over those of human societies

### Soft Ecologists

- View **individual responsibility** and **self-sufficiency** in living sustainably as highly important for societies
- Believe in reducing consumption, waste, and dependence on technology
- Advocate for **small-scale** and **local** solutions to environmental problems

- Prioritise self-sufficiency and personal freedom over environmental regulations

## Environmental Managers

- View the environment as a resource to be **managed** and conserved for **human benefit**
- Believe in **balancing economic development** with environmental protection
- Advocate for regulations and policies that promote sustainable resource use
- Prioritise the needs of human societies over those of the environment

## Cornucopians

- View the environment as a resource to be **exploited** for human benefit
- Believe in human ingenuity and technological advancements to overcome environmental problems
- Advocate for **economic growth** and development as a means to address environmental issues
- Prioritise the needs of human societies over those of the environment

### Strengths and Limitations of Contrasting EVSs

EVS	Advantages	Disadvantages
<b>Ecocentrism</b> (Deep ecologists)	<ul style="list-style-type: none"> <li>▪ Reuses materials so more sustainable</li> <li>▪ Minimises environmental impact by encouraging restraint</li> <li>▪ Better for long-term human wellbeing</li> <li>▪ No need to wait for technology to develop</li> </ul>	<ul style="list-style-type: none"> <li>▪ Conservation can be expensive with no obvious or quick economic return</li> <li>▪ Many countries are still developing economically and argue they should be allowed to continue</li> <li>▪ Difficult to change individual attitudes</li> </ul>



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<b>Technocentrism (Cornucopians)</b>	<ul style="list-style-type: none"><li>▪ Substitutes materials so avoids costly industrial change</li><li>▪ Provides solutions so people are not inconvenienced</li><li>▪ Allows social and economic progress</li></ul>	<ul style="list-style-type: none"><li>▪ Allows even greater rates of resource consumption</li><li>▪ May give rise to further environmental problems</li><li>▪ High cost</li><li>▪ Humans increasingly disconnected from nature</li></ul>
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### Worked Example

Plastic pollution in the oceans is a major environmental problem. Outline how humans might use an ecocentric approach and a technocentric approach to try and solve this problem.

#### Answer

The problem of plastic pollution in the oceans can be addressed using an ecocentric approach or a technocentric approach.

#### Ecocentric Approach:

The ecocentric approach prioritises the preservation of natural ecosystems and biodiversity. In the context of plastic pollution, an ecocentric approach would focus on reducing the amount of plastic waste that enters the oceans in the first place.

This could involve reducing the production and use of single-use plastic items, implementing stricter regulations and enforcement to prevent illegal dumping of plastic waste into the oceans, and promoting sustainable alternatives to plastic products. Additionally, an ecocentric approach would prioritise the restoration and protection of marine ecosystems that have been impacted by plastic pollution, such as coral reefs and sea turtle nesting habitats

#### Technocentric Approach:

The technocentric approach relies on technological solutions to environmental problems. In the context of plastic pollution, a technocentric approach would focus on developing new technologies to clean up plastic waste from the oceans and prevent further pollution.

This could involve the use of advanced filtration systems or autonomous robots to remove plastic waste from the oceans, as well as the development of biodegradable plastics that break down more quickly in marine environments.

Overall, the ecocentric approach emphasises the need for systemic change (fundamental changes in human behaviour and resource use) in order to reduce the amount of plastic waste entering the oceans and preserve marine ecosystems, while the technocentric approach focuses on developing new technologies to address the problem (allowing current rates of plastic use to continue).



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## Intrinsic Value of the Environment

### The Intrinsic Value of our Environment

- If something has **intrinsic value**, this means it is still **worth** something, even if it doesn't have any obvious **economic value** (monetary value)
  - This can sometimes be difficult to understand as in today's society we tend to view everything from a **financial perspective** - we see almost everything, including our homes, food, heating, water, electricity, recreational activities and holidays, in terms of **money**
- However, there are many aspects of the environment that have intrinsic value to many people, including:
  - The experience of observing wild animals in their natural habitats
  - The incredible views that can be seen from mountain tops
  - Weather events, such as snow falling or warm summer days
  - Swimming in rivers and lakes
- Different people and different groups, with different environmental value systems, will have **different parts or aspects of the environment** that hold intrinsic value to them. For example:
  - Many places or ecosystems are important to a country's **national identity**, such as Mount Fuji in Japan or Uluru (Ayers Rock) in Australia, which is of great spiritual importance to Aboriginal people
  - Someone who lives in a densely populated city, where there is little wildlife, may value the abundance of insect and plant life present if they visit the countryside on a summer's day, as this is something they **don't normally experience**
  - A gardener, who is always interacting with insects and plants, may value these things for slightly different reasons - for example, they may value the **services** that the insects provide (e.g. their ability to recycle the dead leaves and pollinate the flowers in their garden)