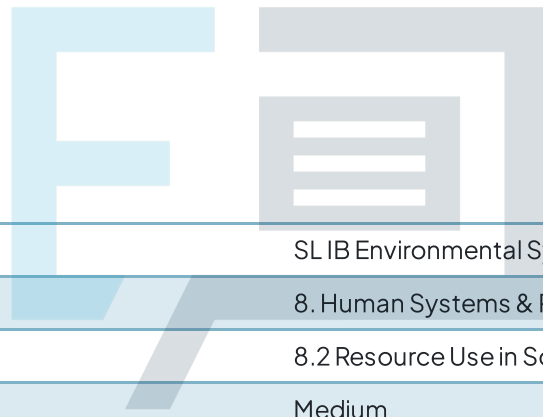




8.2 Resource Use in Society

Mark Schemes



Course	SL IB Environmental Systems & Societies (ESS)
Section	8. Human Systems & Resource Use
Topic	8.2 Resource Use in Society
Difficulty	Medium

Exam Papers Practice

To be used by all students preparing for
SL IB Environmental Systems & Societies (ESS)
Students of other boards may also find this useful

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Indicative Content	Commentary
<p>Examples of the mismanagement of renewable natural capital include:</p> <p>Any two from the following:</p> <ul style="list-style-type: none">• Deforestation leading to loss of forest ecosystems and their services / unsustainable logging practices leading to habitat loss and disruption of forest ecosystems; [1 mark]• Overfishing depleting fish populations and disrupting marine ecosystems; [1 mark]• Unsustainable water extraction causing aquifer depletion and water scarcity; [1 mark]• Construction of dams/reservoirs without considering downstream impacts on aquatic ecosystems; [1 mark]• Excessive use of agricultural land / intensive agriculture leading to soil erosion/degradation; [1 mark]• Excessive use of pesticides/fertilisers in agriculture causing water pollution / ecosystem harm; [1 mark]• Overgrazing of grasslands leading to soil erosion and desertification; [1 mark]• Conversion of wetlands into agricultural fields resulting in loss of biodiversity / water/carbon/nitrogen storages; [1 mark]	<p>Renewable natural capital refers to the stock of natural resources and ecosystems that can renew or regenerate themselves over time, providing a continuous flow of valuable services and resources to society</p> <p>These resources are considered renewable because, if managed sustainably, they can be replenished and maintained for current and future generations</p> <p>Renewable natural capital plays a crucial role in supporting life, ecosystems, and human well-being</p>



Indicative Content

The concept of sustainable use of renewable natural capital can be explained as follows:

Any **two** from the following:

- Utilising resources at a rate equal to or less than their natural regeneration; [1 mark]
- Ensuring that ecosystems have time to recover and maintain their functions/services; [1 mark]
- Avoiding the depletion of natural resources beyond their regenerative capacity / ensuring ecosystems are not exploited beyond their carrying capacity; [1 mark]
- Managing resource use in a way that does not compromise future generations / future human populations; [1 mark]

The concept of unsustainable use of renewable natural capital can be explained as follows:

Any **two** from the following:

- Exceeding the natural rate of regeneration, leading to resource depletion; [1 mark]
- Resulting in the degradation of ecosystems / loss of biodiversity / ecosystem collapse; [1 mark]
- Ignoring the carrying capacity of ecosystems and causing irreversible damage; [1 mark]
- Extracting resources faster than their ability to replenish, leading to long-term harm; [1 mark]
- Mismanaging resource use in a way that compromises future generations / future human populations; [1 mark]

3a

Indicative Content	Commentary
<p>Other forms of natural income that could result from the construction of dams on rivers include:</p> <p>Any two from the following:</p> <ul style="list-style-type: none"> • Mitigation/regulation/control of floods / reduction in flooding; [1 mark] • Opportunities for tourism/recreation/fishing; [1 mark] • Possible conservation of certain freshwater species (that benefit from damming / flood control / reservoir formation); [1 mark] • Controlled water supply e.g. for drinking / cleaning / washing / other purposes; [1 mark] 	<p>Natural capital is a term used for natural resources that can produce a sustainable natural income of goods or services</p> <p>Natural income is the yield obtained from natural resources</p> <p>If sources of natural capital (e.g. rivers and the power they generate) are carefully and sustainably managed, they can provide even more benefits or resources over time, which is referred to as natural income</p>

3b

Indicative Content
<p>Arguments for placing an economic value on natural systems include:</p> <p>Any one from the following:</p> <ul style="list-style-type: none"> • Assigning economic value to natural systems allows policymakers/stakeholders/decision makers to make more informed decisions about the environment OR helps them understand the economic implications of various choices e.g. conservation efforts / resource extraction; [1 mark] • Assigning economic value to natural systems facilitates the allocation of resources/time/money/funding/staff by highlighting the economic benefits of preserving natural systems OR can lead to increased investments in conservation / sustainable practices; [1 mark] • Economic valuation can make ecosystems' contributions visible/understandable/relatable in economic terms, ensuring that they are not overlooked/undervalued in market-driven societies OR valuation allows for a comparative measure e.g. the value against income generated from building roads through woodlands; [1 mark]

- Without economic valuation, ecosystem services provided by natural systems may be ignored by policymakers/stakeholders/decision makers; [1 mark]

Arguments **against** placing an economic value on natural systems include:

Any **one** from the following:

- Placing an economic value on natural systems may oversimplify their intricate ecological/cultural significance, reducing them to monetary/financial terms **OR** can result in underestimating their true/cultural/spiritual/aesthetic value **OR** some argue that ecosystems have intrinsic value and should not be made into commodities; [1 mark]
- It is difficult/impossible to objectively quantify aesthetic/intrinsic value; [1 mark]
- Assigning a monetary value can be seen as ethically questionable, as it may lead to the exploitation of nature for profit; [1 mark]
- Economic valuation tends to prioritise short-term gains over long-term sustainability **OR** can encourage decision-makers to favour actions that provide immediate economic benefits but harm ecosystems in the long run; [1 mark]
- Assigning economic values often involves subjective judgments / can be influenced by other/vested/conflicting interests, potentially leading to biased assessments that favour certain groups/industries; [1 mark]

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Indicative Content	Commentary
<p>The terms <i>renewable</i> and <i>sustainable</i> can be distinguished as follows:</p> <p>Any three from the following:</p> <ul style="list-style-type: none"> • <i>Renewable</i> resources are those that can be naturally replenished / can regenerate (themselves) naturally; [1 mark] • <i>Sustainable</i> refers to the use of resources at a rate <u>less than or equal to</u> their replenishment OR that allows similar use for future generations / that doesn't compromise the resource for future human populations; [1 mark] 	<p>You could gain marks for giving examples that clearly demonstrate any of the marking points given here</p> <p>For example, you would gain two marks for providing an appropriate example of both a renewable resource (i.e. a form of natural goods or services e.g. timber), as well as an appropriate example of a sustainable practice (e.g. harvesting only the natural income from a forest)</p>



- *Renewable* refers to the (natural) resources themselves; [1 mark]
- *Sustainable* refers to the activities affecting those resources **OR** refers to the extraction/exploitation/use of resources; [1 mark]
- Resources can be *renewable* but their current (rates of) extraction/exploitation/use may not necessarily be *sustainable*; [1 mark]



Exam Papers Practice