



Mains Practice Question

Q. Why is the Biosphere important for living organisms? (150 words)

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Approach:

- Briefly define the biosphere.
- Highlight its importance for living organisms.
- Highlight how its degradation can affect living organisms
- Conclude with some measures to control degradation from man-made changes.

Introduction

- The biosphere is the narrow zone of contact between the land, water and air. It is in this zone that life, that is unique to this planet, exists.

Body

Significance of biosphere for living organisms:

- It provides habitat in an ecosystem. Species and community can exist in a particular niche, for example, wetlands found at the confluence of hydrosphere and lithosphere provide rich grounds for breeding and safe habitat resulting in high species diversity.
- It provides a basis for the food chain, a food web through which material and energy is transmitted across organisms leading to complex structures that help stabilise the ecosystem and survival of species, for example, tropical rainforests show high stability due to high diversity and complex dependence among them.
- It provides for resources to the humankind using which man has evolved and changed the physical environment as per his cultural needs, for example, rivers provide water and its banks become places for settlement, forests provide timber, the soil becomes the basis for agriculture.

Thus, the biosphere is essential for living organisms survival and existence. Since elements of a biosphere are intricately linked with each other, change in one leads to a feedback mechanism in the whole of the system as evident in the rising concentration of GHG in the atmosphere which affects photosynthesis process of primary producers, land degradation due increase run-off etc. This negatively impacts the whole biosphere threatening the existence of species which have a narrow range of tolerance like those living in ecotone regions.

Conclusion

- Thus, conservation by maintaining balance among elements of the biosphere is important, especially buffering from human activities. This can be achieved by various means like the concept of Biodiversity Conservation, the establishment of National Parks, regulation over resource use like Coastal Regulation Zone, Environmental Impact Assessment, regenerating degraded parts of biosphere like afforestation, adopting sustainable development practices in man's cultural modification of the environment.

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