

Q No: 06 (a)

Define Biodiversity loss give its causes and Explain UN convention?

Introduction:

Biodiversity loss causes by both natural and anthropogenic activities. As a result, of these activities variation of different animals in ecosystem has been less, which disrupt the stability of ecosystem as well as climatic stability. UN convention on

"**conservation of Biodiversity**" emphasizes the importance of conserving biological diversity through sustainable use of its components and fair or equal sharing of its genetic resources.

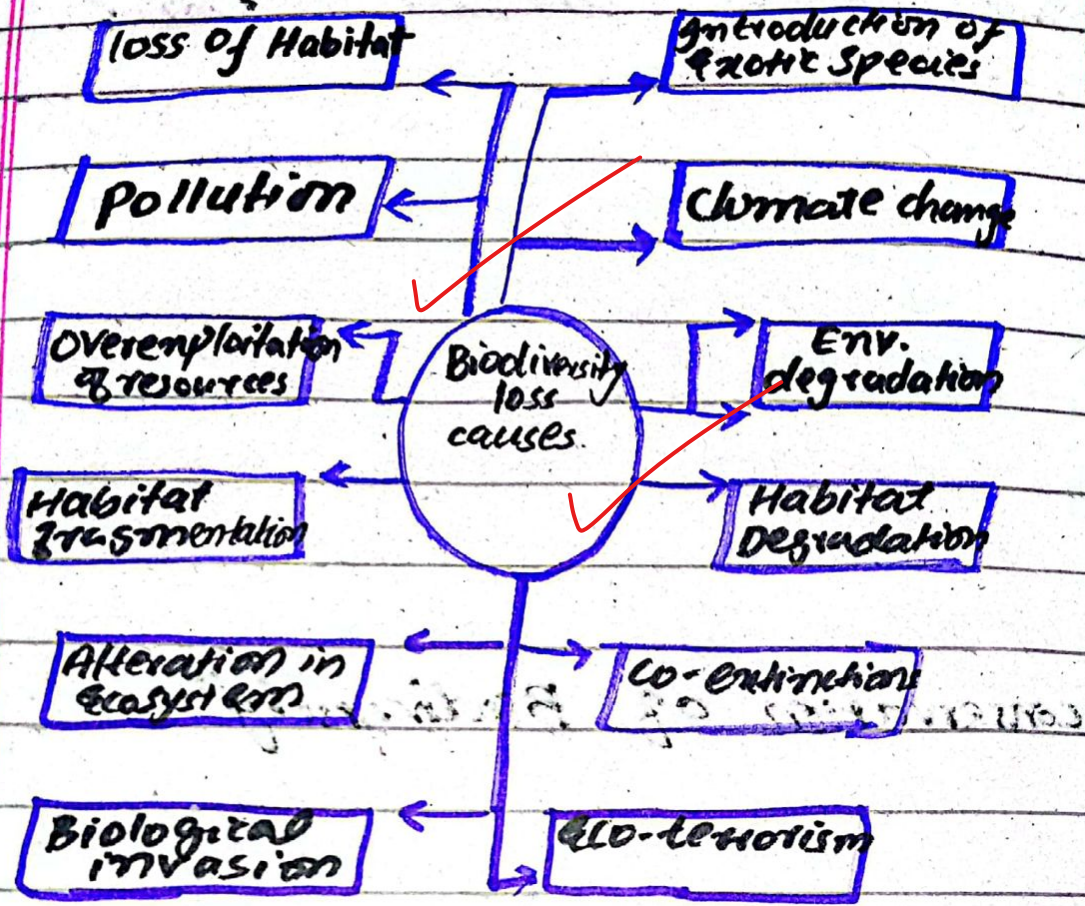
"Biodiversity loss refers to the declining variety and variability of life forms in ecosystems, which can disrupt the ecological balance and reduce the availability of ecosystem services essential for human survival"

(CBD, Article, 01)

Causes of Biodiversity loss:

Following are the main causes

of Biodiversity loss



1- Alteration and loss of the habitats:-

The transformation of the natural areas not only the loss of the vegetables species, but also decreases in animal species associated to them.

2. Introduction of Exotic Species:

Introduction of different species into new environment can lead to different forms of imbalance in ecological equilibrium.

3. Pollution:

Pollution from toxic chemicals undoubtedly threatens the survival of species and sustenance of ecosystem.

4. Climate change:

For example, heating of Earth's surface affects biodiversity because it endangers all the specific ~~species~~ species adapted to the cold due to latitude or altitude (mountain species).

5. Over-exploitation of resources:

When the activities connected with capturing and harvesting a renewable natural resource in a particular ^{area} is extensively intense, the resource itself may become exhausted.

6. Alteration in Ecosystem composition:

On the event of alteration, ecosystem can begin to change. Alteration to ecosystem are critical factors contributing to species and habitat loss.

7. Environmental degradation:

A vast variety of environmental

Factors causing environmental degradation which includes; CO_2 increased, Global warming, UV exposure, oil spill etc.

8. Biological invasion:-

Exotic species compete with the natural fauna and flora and they spread fast because of their high reproductive rate and stress tolerance. They make the environment unfavourable for native fauna and flora.

9. Habitat Degradation:-

Deforestation, is the mainly habitat loss of biodiversity. In jhum cultivation a forest area is cleared by the tribals, trees are cut and burned, and clear patches are used for cultivation of jhum. In this way, habitat loss by anthropogenic activities.

10. Habitat Fragmentation:

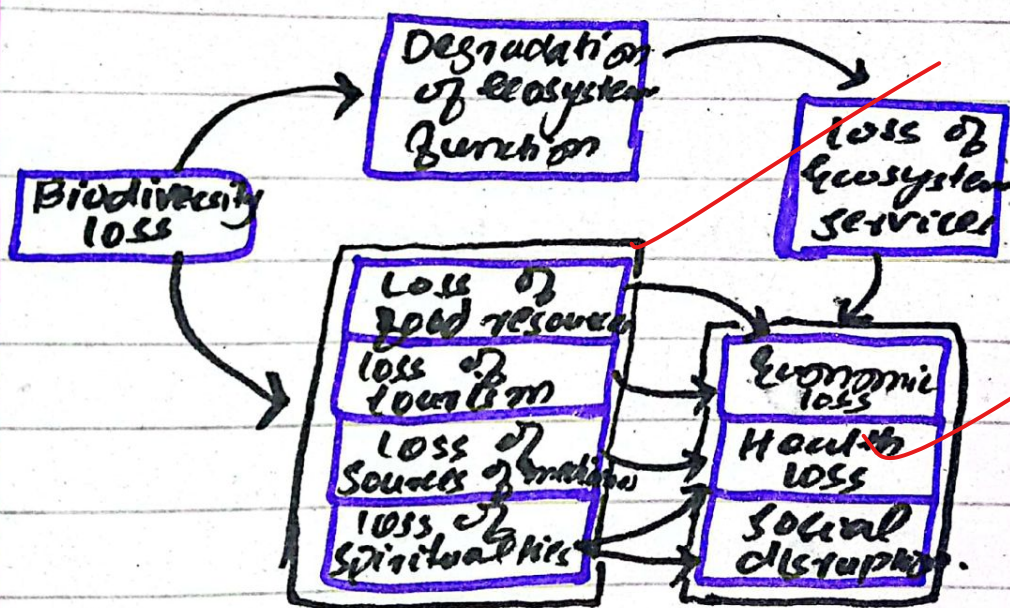
Forests are divided into fragments by roads and canal building and laying of power lines. In this way, biodiversity losses.

11. Co-extinctions:

When a host fish become extinct, its unique assemblage of parasite also meets the same fate.

12. Geo-terrorism:-

Iraq may have engineered the spill to block allied plains for an amphibious invasion of Kuwait whatever the military or political effect of this act could be, the environment effect was much greater.



:: impacts of Biodiversity loss

A lot of impacts by biodiversity loss which includes: Economic loss, Health loss, social loss as well.

UN-Convention on Biodiversity loss:-

Introduction:

The United Nations Convention on Biological Diversity addresses the global challenges of biodiversity loss and sets out a framework for sustainable development that conserves ecosystems and species. It was adopted in 1992, during Earth Summit in Rio de Janeiro and has been ratified by almost all UN member states.

Key aspects addressed by CBD!

- Habitat destruction (deforestation, urbanization)
- Climate change and global warming
- Pollution
- Over-exploitation of natural resources
- Invasive species disrupting ecosystem.

Importance of CBD:-

- Biodiversity loss threatens food security, health, livelihoods and economic stability.
- conserving biodiversity is essential for maintaining ecosystem services like pollination, water purification, and climate regulation.

Implementation Status in Pakistan

- Developed National Biosafety Guidelines in 2005
- Notified National Biosafety Rules were also found in 2005
- National Biosafety centre has been established
- 30 Biosafety institutional committees have been established.



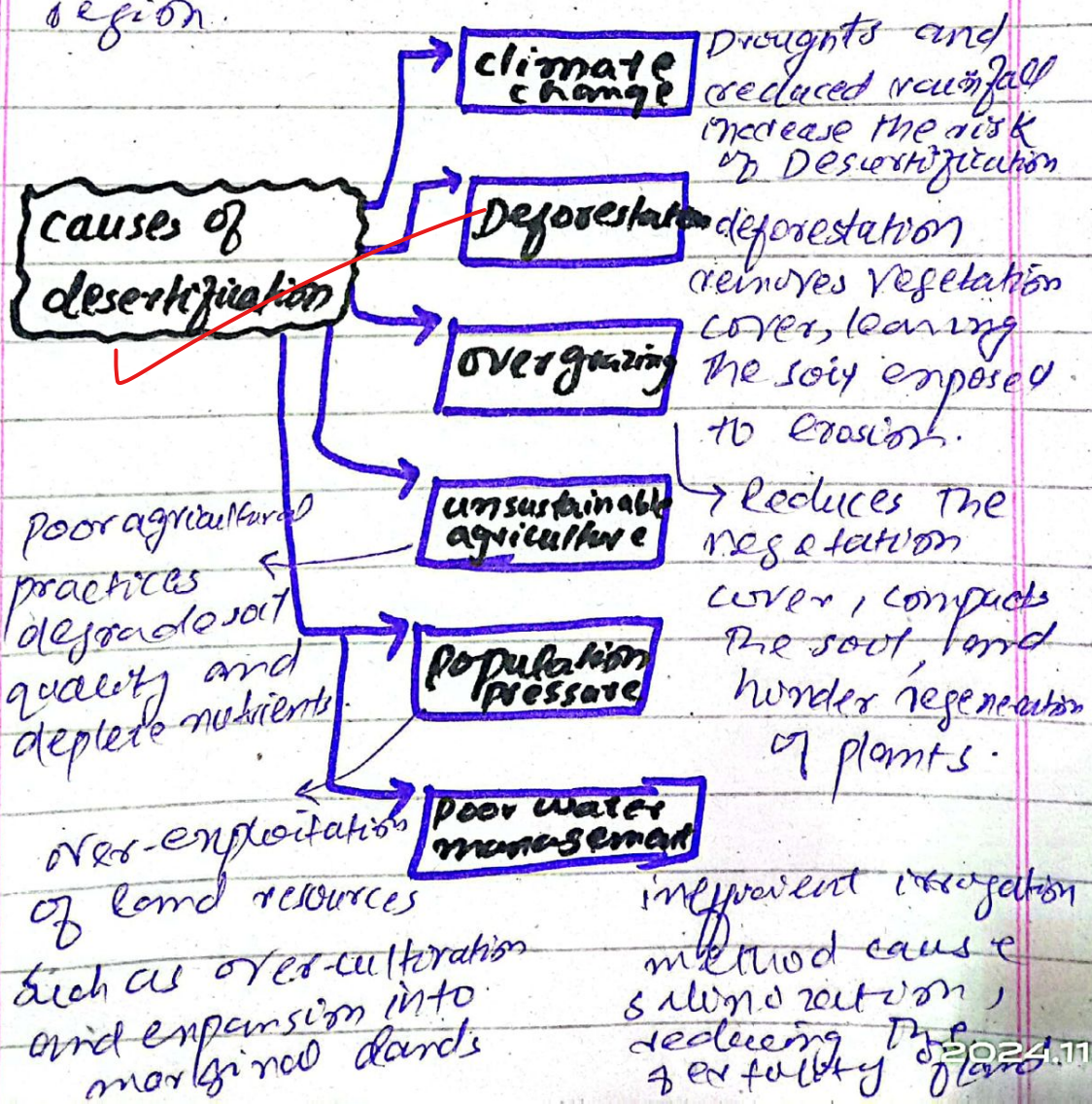
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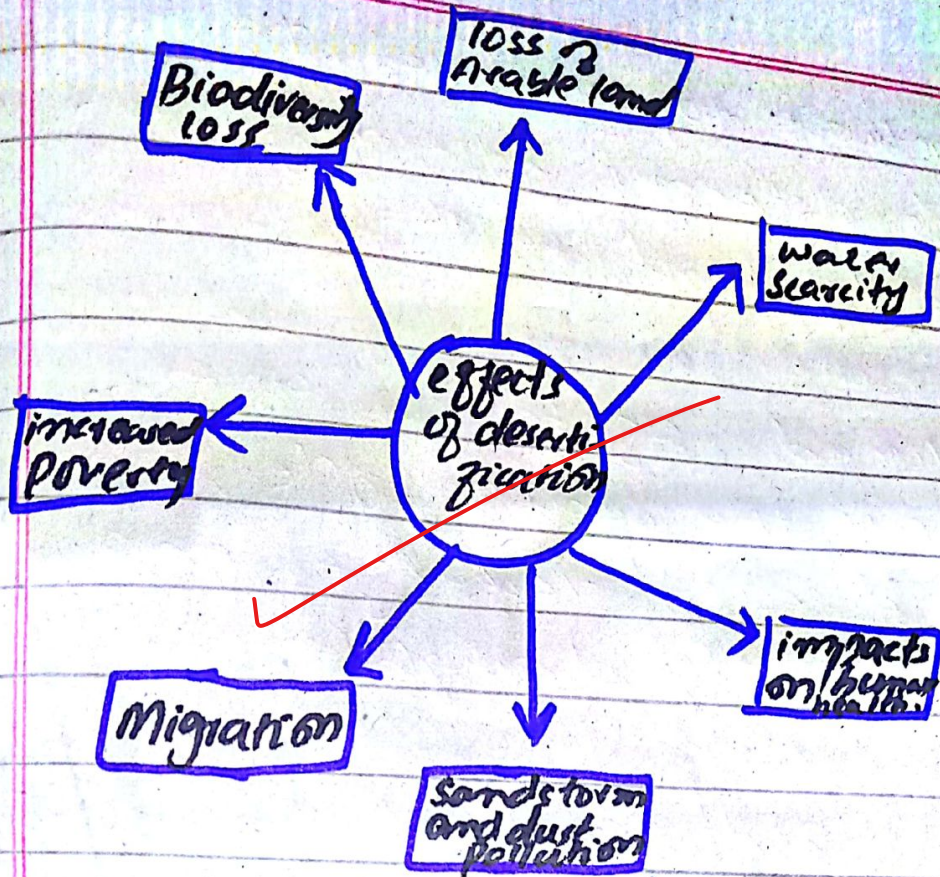
Q No. 06 (b)

African region faces desertification.
What are causes and effects of Desertification.

Introduction:-

Desertification is the process of land degradation in arid, semi-arid, and dry sub-region/ humid areas due to climatic variations and human activities. It is a significant issue in many parts of African region. Here are the causes and effects of desertification in the African region.





1. Biodiversity loss :-

Degradation of ecosystems result in the loss of plant and animal species.

2. increased Poverty :-

communities dependent on agriculture for livelihood face economic hardships.

3. Migration and conflict :-

Scarcity of resources drives people to migrate, often leading to conflict over land and water.

4. Sandstorm and Dust Pollution :-

Exposed degraded land

contribute to increased frequency of sandstorms affecting air quality and health.

5. Water Scarcity :-

Reduced vegetation cover affects the water cycle, decreasing groundwater recharge and exacerbating droughts.

6. Impacts on human health :-

Dust and degraded environment lead to respiratory and other health issues.

7. Loss of Arable Land :-

Reduced agricultural productivity leads to food insecurity and famine.

Solution to combat desertification

- Afforestation and Reforestation programmes.
- Sustainable agriculture and grazing practices.
- Efficient water management and irrigation techniques.
- Public awareness.

Convention on Desertification.

The United Nations Convention to combat Desertification (UNCCD) is an international treaty aimed at addressing land-degradation, desertification.

Key facts about UNCCD:-

- Adopted in 1994, and came into force in 1996. 1997 countries are parties to the convention as of today and making it nearly universal.

Global initiatives under the UNCCD.

Drought Management

Great Green wall initiative

LDN land degradation neutrality

Significance:

- Protect ecosystems and biodiversity by preventing further land degradation
- Addresses the root causes of migration

improving livelihood in
vulnerable areas.

- contributes to mitigating
climate change by enhancing
land-based carbon storage.

Conclusion:

The UNCCD is a critical
framework for achieving
sustainable development
in dryland areas and
combating the global challenge
of desertification.



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not everything in the chapter
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