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General Instructions

1. Give numbering to headings
2. Do not write lengthy paragraphs. Write medium sized paragraphs with headings.
3. Do not use table for comparison and contrast questions.
4. Draw figures/diagram/flowchart where needed.
5. Start new question from fresh page.
6. Give around 15 headings for 20 marks question.
7. Every question should have introduction and conclusion paragraphs.
8. Change colour scheme for references to give them more visibility.
9. Manage time well.
10. Wide page borders are discouraged. Should be reasonable.
11. Avoid writing wrong references.
12. Give more weightage to expressedly asked part/s of the question.

Environmental Science:

Q2) 1) ~~Introduction:~~

National Conservation Strategy (NCS), is Pakistans landmark achievement in forming environmental strategy by adopting a multi-stakeholders and comprehensive consultative process with assistance from Canadian International Development Agency (CIDA).

NCS was prepared by a team of experts over 3-year period with collaboration with the World Conservation Union (IUCN). It involved over 3000 participants. NCS was approved by the cabinet on 1 March 1992.

2) ~~Objectives:~~

NCS has set a number of objectives to achieve and also the priciples through which these principles are achieved. The core objectives are conservation of natural resources, sustainable development and Efficient use and management of resources. The NCS must ensure that these objectives are achieved by enhancing Public-Private partnership in development and environmental management. By merging Environment and Economics in decision-making and by also focusing on durable improvements in the quality of life in Pakistan.

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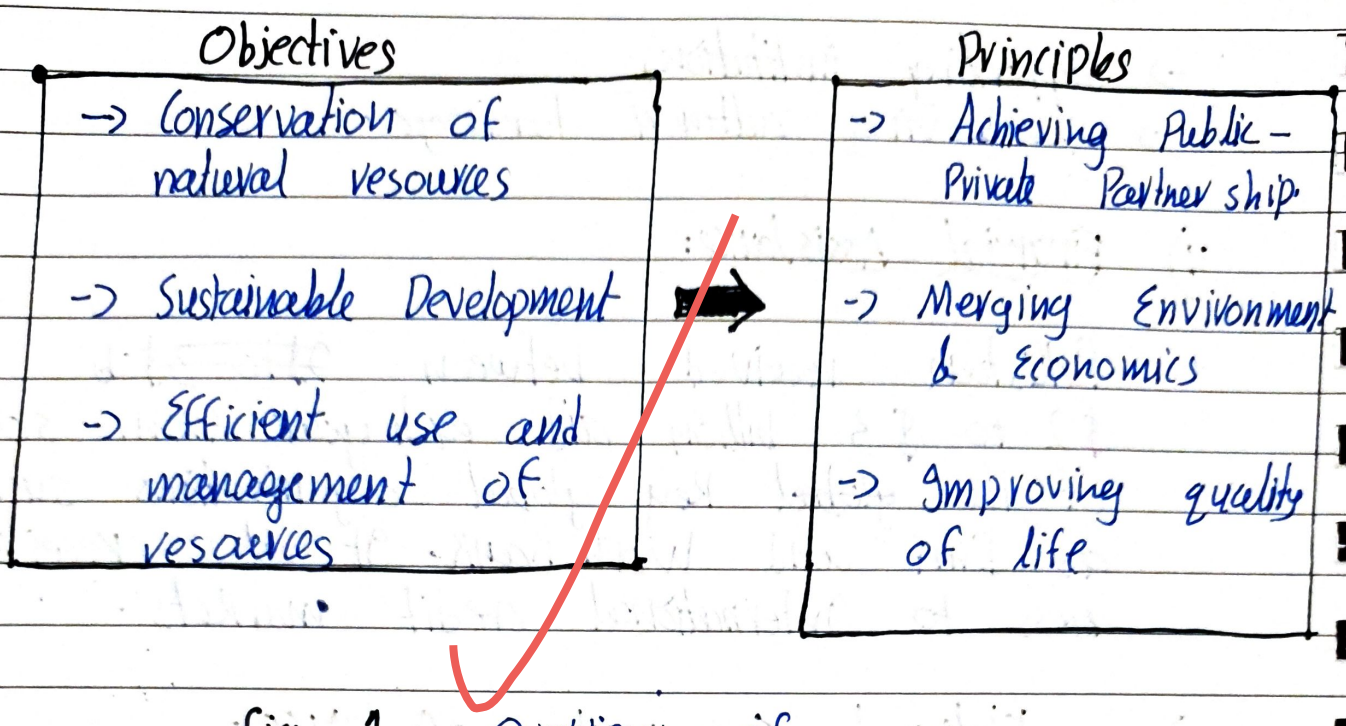

fig 1 : Overview of Objectives

3) Key Areas of Concern :

The NCS has set priority of the 14 following areas:

-> Maintain Soil in Crop lands
-> Protecting water sheds
-> Restoring range lands
-> Protecting wetlands
-> Protecting Energy Efficiency
-> Urban waste management
-> Integrating Population and Environment
-> livestock
-> Support ~~facilities~~ forestry
-> Irrigation efficiency.
-> Renewable energy
-> Conserving Bio diversity

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-> Supporting institutions.
-> Preserving cultural heritage.

4) Financial Assistance:

Avoid cutting.

Pakistan received between ~~2 to 3 b~~ $2 to $3 billion aid each year from some of the ~~global~~ Key global organisations such as Imf and World Bank. It also received access to International credit markets.

5) Institutional Components of NCS:

The NCS unit was created in Environment & Urban Affair Division (EUAD), this was done to enable the coordination and monitoring of NCS Implementation Process.

The NCS unit was also for managing an NGO Fund of staggering Rs. 30 million. This fund was to be used to render financial assistance to NGO's in developing and implementing environment related projects.

6) Modus Operandi of NCS:

The NCS was able to ~~locate~~ the deep rooted problems that needed to be nipped in the bud. In accord with the ~~#~~ NCS national The Primary agricultural non point source

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Pollutants are nutrients, sediment, animal wastes etc. Agricultural non-point sources enter surface water through direct surface runoff or through seepage to ground water. Various farming methods produce erosion which produces a sediment that can damage fish habitats. This affects changes to aquatic habitat like decreased oxygen. This can lead to Eutrophication.

The two key values, that the NCS determined crucial in transforming attitudes and practices were, the restoration of conservation ethic derived Islamic moral values, Qeantas, and revival of community spirit.

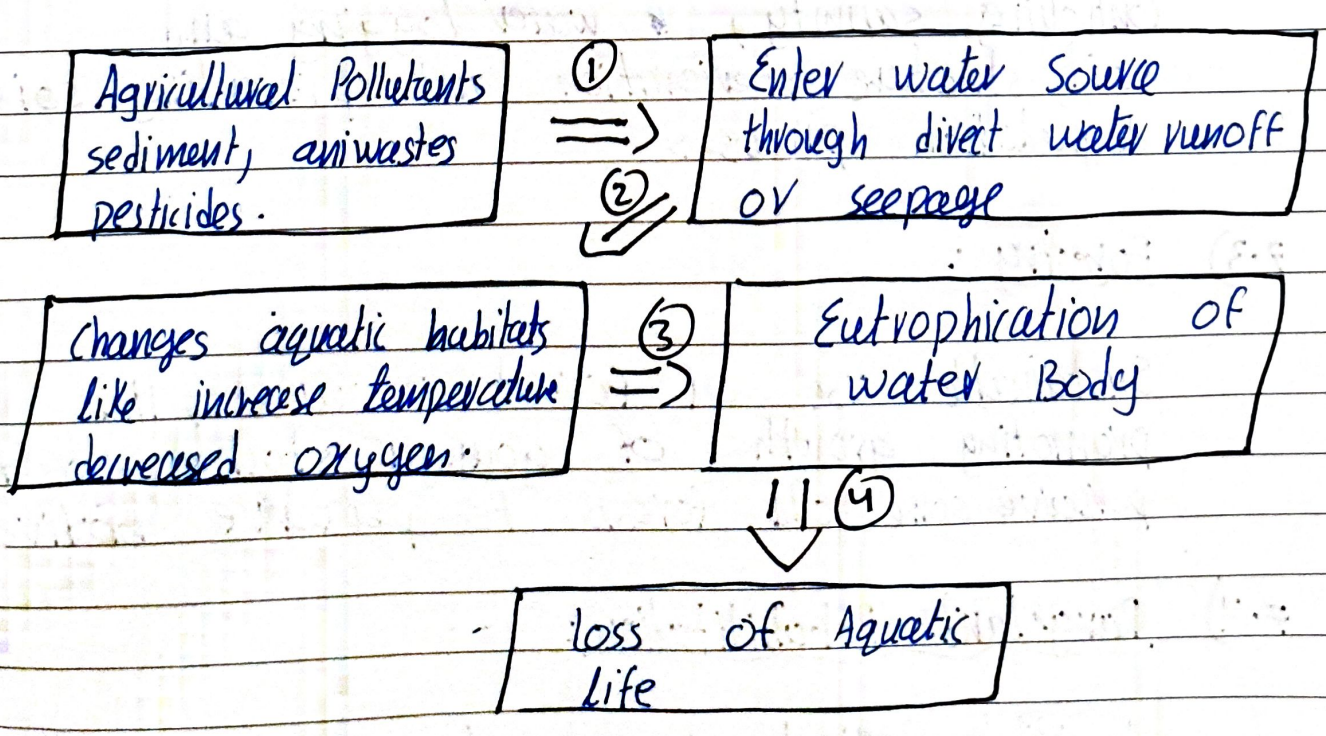

fig 2: Overview of the Problem

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7) Policies Adopted by NCS:

The NCS adopted policies in different sectors to mitigate the situation. There are as follows:

7.1) Agriculture:

The agricultural policy encompasses halting the over use of soil, frequent checks to determine degradation processes, managing water runoff and restoring degraded soil.

7.2) Managing soil/water Resources in Irrigated areas:

Controlling salinity, water logging and soil structure deterioration and preventing soil degradation processes.

7.3) Forestry:

Sustainable use of forest resources, thus promoting growth of younger stock. Also to perserve some old forests to perserve biodiversity

7.4) Rangeland Rehabilitation:

Facilitate private investment in rangeland development for commercial livestock.

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7.5) Water Management:

: Increase water charges for all farmers to meet operating and maintainace costs. Also to seek solutions to salanity/ sodality and water logging Problems.

7.6) Pollution Control:

Augment the use of coal for electricity to meet demand and reduce pollution. by using least polluting technology. To develop alternative sources to meet ~~et~~ energy demands.

7.7) Solid waste:

To promote reuse and recycling and also to effectively use of scavenging systems.

8) Conclusion:

10

In a nutshell, the NCS was a pioneer of conservation strategy in developing world. It had the potential to mitigate the dire environment impact and create a sustainable and envivonment friendly Pakistan.

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Q3) 1) Introduction:

Environmental Pollution is a big challenge for the contemporary world, as it impacts almost every aspect of daily lives. The modern world has just come to realise the dire effects of pollution on humans life and therefore robust measure are under way to mitigate the situation. ~~In this~~

2) What is Environmental Pollution:

Refers to an unwanted change in environment caused by the introduction of harmful materials or the production of harmful conditions (heat, cold, sound). It can also be defined as undesirable change in the physical, chemical or biological characteristics of air, water, and land that may be harmful to human life or animals.

3) Key Aspects associated with Environmental Pollution:

Some important concepts related to pollution are as follows:

3.1) Contamination: making something unfit for particular use due to presence of undrinkable material.

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3.2) Disease :

~~Im to~~ Imbalance between an organism and the environment.

3.3) Toxic Materials:

material that are toxic to people and other living organisms.

3.4) Synergism :

is whereby actions of different substances produce a combined effect greater than the sum of the effects of individual substances.

3.5) Area sources :

Diffused over the land and include urban runoff and mobile sources such as auto mobile exhaust.

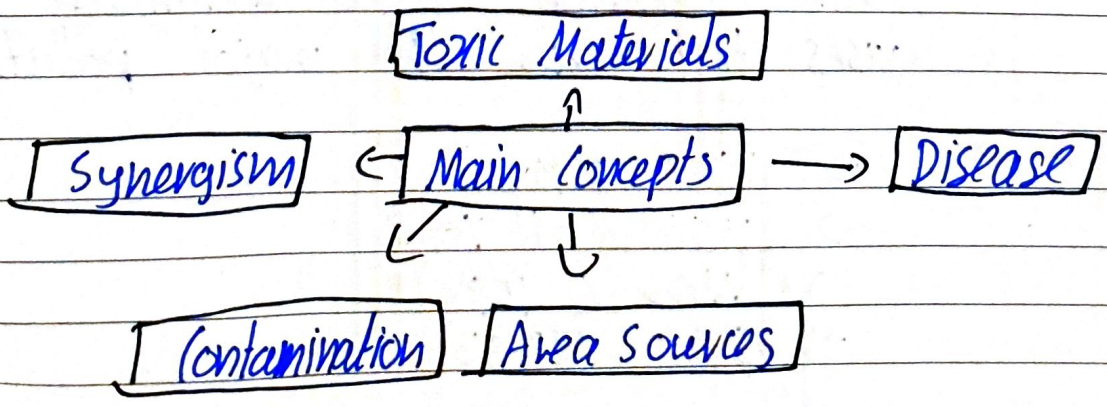

Fig 1: Overview of Key concepts.

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4) Effects of Environmental Effects:

Categories of environmental pollution pollutants include persistent organic pollutants, such as pesticides, doxins, heat, noise, air etc. Following are the type of environment pollutant and their effects:

4.1) Air Pollution:

The WHO defines air pollution as the presence of materials in the air in such concentration which are harmful to man and environment.

4.1.2) Effects:

Air Pollution affects visual qualities, vegetation, animal, soils, water quality, natural and artificial structures and human-health. Following is the weightage of gases that cause the major pollution

- -> CO (58%)
- -> VOC (11%)
- -> NO_x (15%)
- -> SO (13%)

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4.2) Water Pollution:

Is the degradation of quality that renders water unuseable for its ~~needed~~ intended purpose. The primary water pollution problem is the world is the lack of disease-free drinking water. Major categories of water pollutants include disease-causing organisms, heavy metals, organic chemicals, acids etc.

4.2.1) Effects:

Give subheadings for each effect.

~~Fo~~ The dire effects include water-borne diseases, Evosion of soil, Defforestation damamage to aquatic life etc.

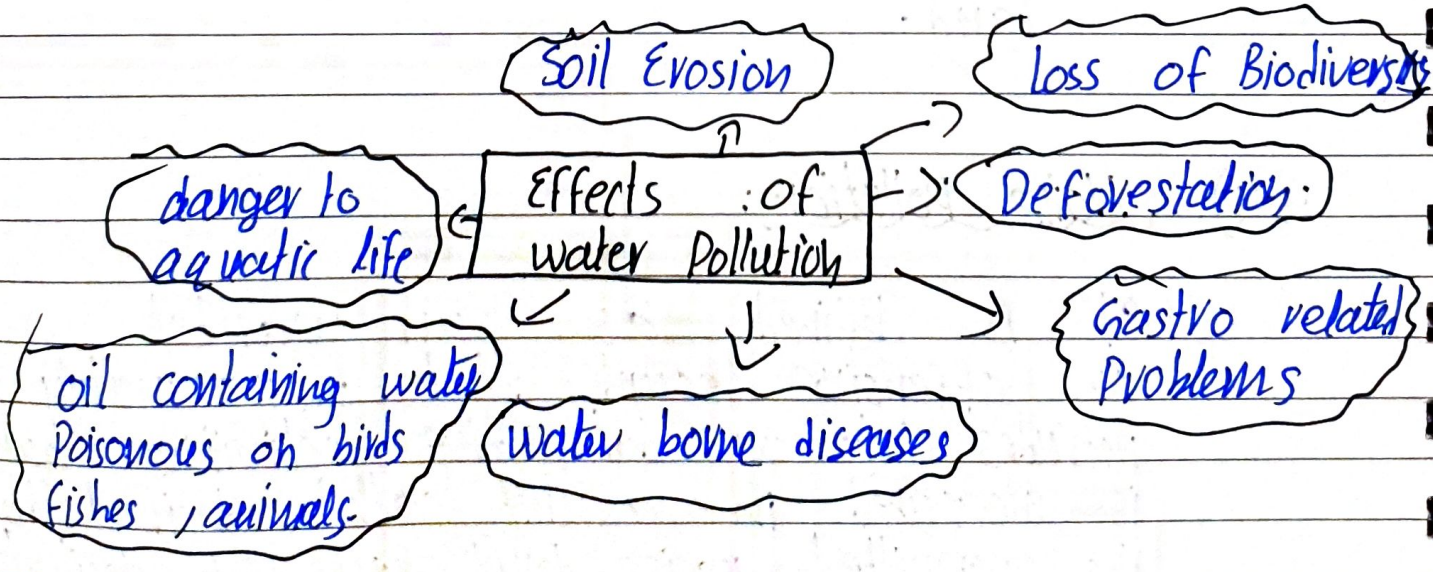

fig 2: Effects of water Pollution.

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4.3) Soil Pollution:

Soil Pollution is defined as contamination of soil system by considerable quantities of chemicals or other substances, resulting in the reduction of it fertility or productivity with respect to qualitative and quantitative yeild of crops.

4.3.1) Effects:

Soil Pollution can lead to food shortages. continous exposure of eroded soil to sun for longer periods may transform into rocky in nature, resulting in desertification. It can decrease the extent of agricultural land.

4.4) Noise Pollution:

It is defined as un wanted or offensive sound that unreasonably intrudes into our daily ~~lives~~ activities. Sound is measured in a unit called decibal (db). The permitted noise level is 125 decibals

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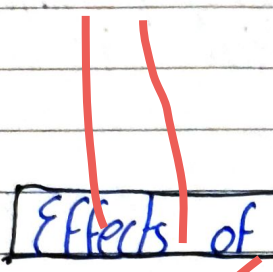
4.9.1) Effects:

Noise Pollution can have serious health and safety risks including but not limited to Mental disorientation, causes accidents Nausea, stress, Dizziness etc.



Effects of Environment Pollution

Noise Pollution	Air Pollution	Soil Pollution
-> Dizziness -> Nausea -> Stress -> Mental disorientation -> Respiratory Problems -> Deterioration in Concentration	-> loss of visual quality -> Affects vegetation -> Respiratory Problems -> Affect animals	-> food shortage -> decrease in agricultural land -> Desertification

Water Pollution

-> Soil Erosion
-> Water Borne infections
-> Deforestation

fig 3 : Overview of Env Pollution

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5) Conclusion :

To sum up, ~~Water~~ Environmental Pollution can impact many aspects of daily lives and can result in many health and safety risks. Therefore meticulous planning and robust measures are essential to curb the damages.

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~~Q6 Q7)~~

Q7) 1) Introduction:

Eutrophication is a type of water pollution which, if left un monitored, can cause severe issues and lead to serious loss of biodiversity.

2) What is Eutrophication:

Eutrophication is defined as a natural or artificial addition of nutrients to water bodies that can, with the passage of time, can pollute the water and cause massive bio-diversity loss.

In simple words, it is denoted by the excessive plant and algae growth in the water bodies due to increased levels of nutrients it recieves in the form of nitrates and phosphates.

3) Process of Eutrophication:

Fertilizers flow into water bodies and

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cause excessive growth in plant and algae. ~~in the water body~~. As the algae dies and decomposes, the high levels of organic matter and the decomposing depletes the water body of its oxygen content. Furthermore the algae covers the surface of the water-body, preventing the sunlight to penetrate. As the oxygen content decreases, the ~~living organisms~~ aquatic life does not receive adequate oxygen to sustain and therefore eventually die.

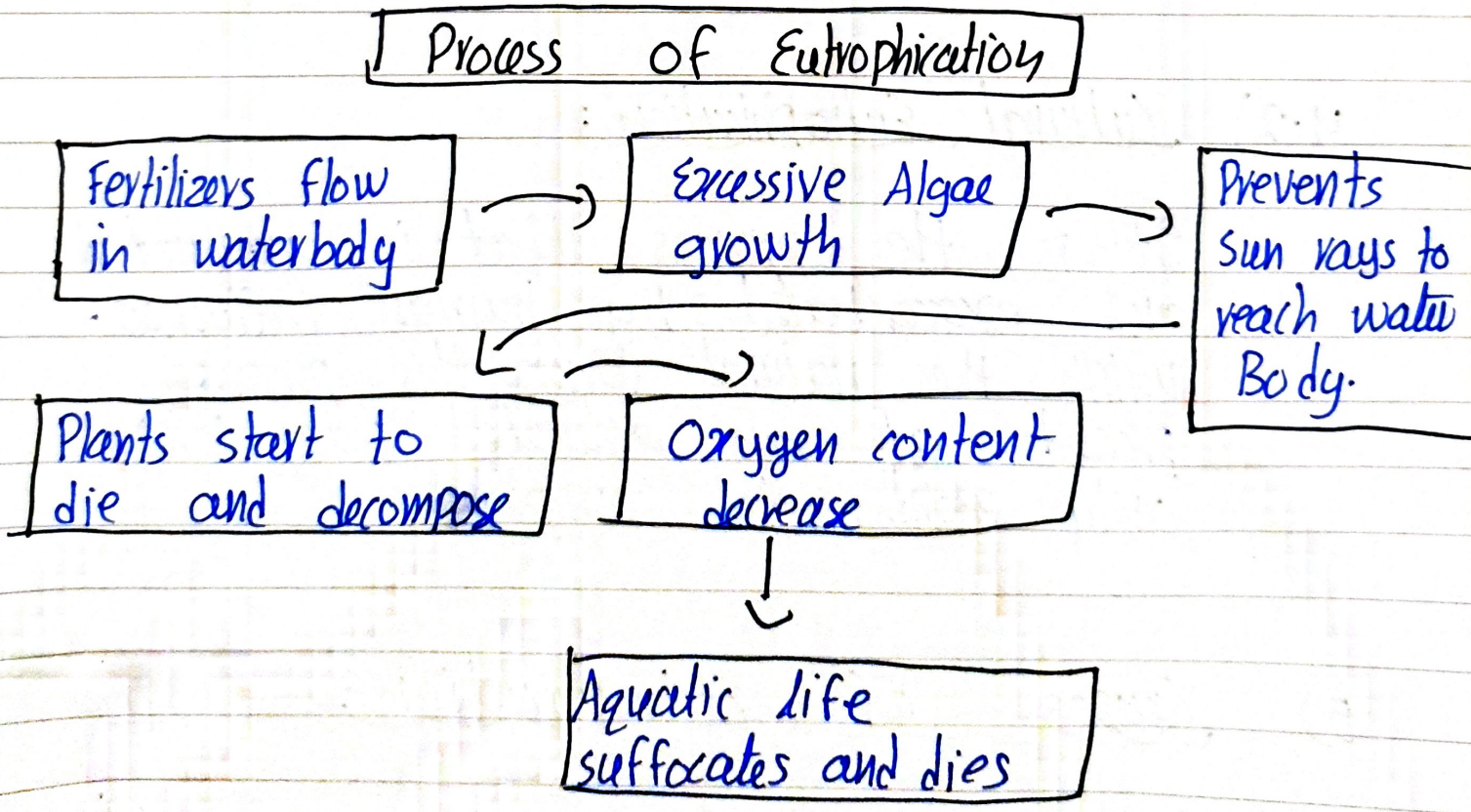

Fig 1: Process of Eutrophication

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4) Types of Eutrophication:

Eutrophication is divided into two categories as follows:

4.1) Natural Eutrophication:

It is the natural eutrophication ~~of~~ takes takes place without any human influence. The Eutriphication process begins and gradual proceeds slowly during decades.

4.2) Cultural Eutrophication:

It is the process that is accelerated and exacerbated by human influences. Unlike the natural form, this process proceeds at an accelerated pace, taking only months to complete.

5) Causes of Eutrophication:

There and sundry causes of eutrophication and some of them include.

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sewage effluents, Organic wastes, Agricultural run off ets

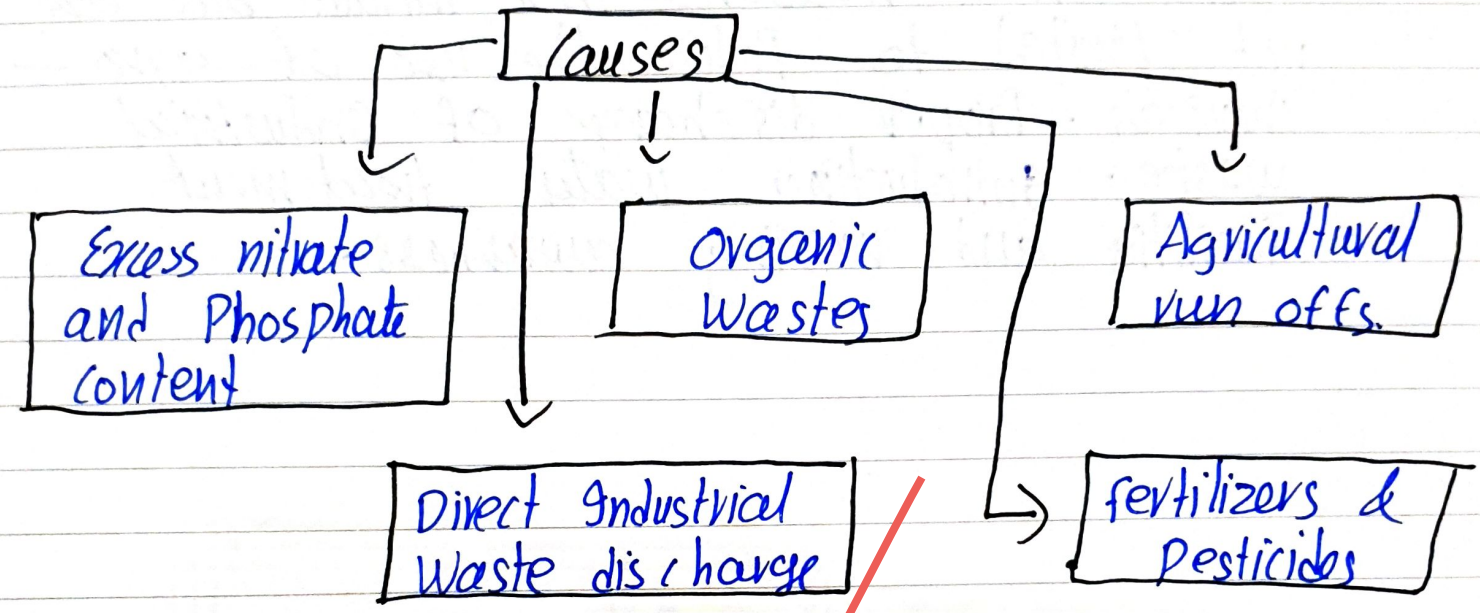

fig 2 : Overview of causes.

6) Effects:

Detail?

The effects include water clarity. It also affects the colour and taste of the water. As aforementioned it leads to a massive loss in Biodiversity

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7) Solutions:

The process is natural and will occur, eventually but the acceleration can be halted by taking certain measures. These include but are not limited to Reduce the use of agro-chemicals .. Proper discharge of industrial waste. Introducting water treatment facilities and raising awareness.