

⇒ **NITROGEN CYCLE** ⇒ **Gaseous** ⇒

⇒ Denitrifying Bacteria.

- + Ammonia ✓
- + Nitrites ✓
- Nitrates ✓

Nitrogen

N₂

Nitrogen fixation

Plants

Nitrification

Ammonification

Ammonia

NH₃

Nitrites

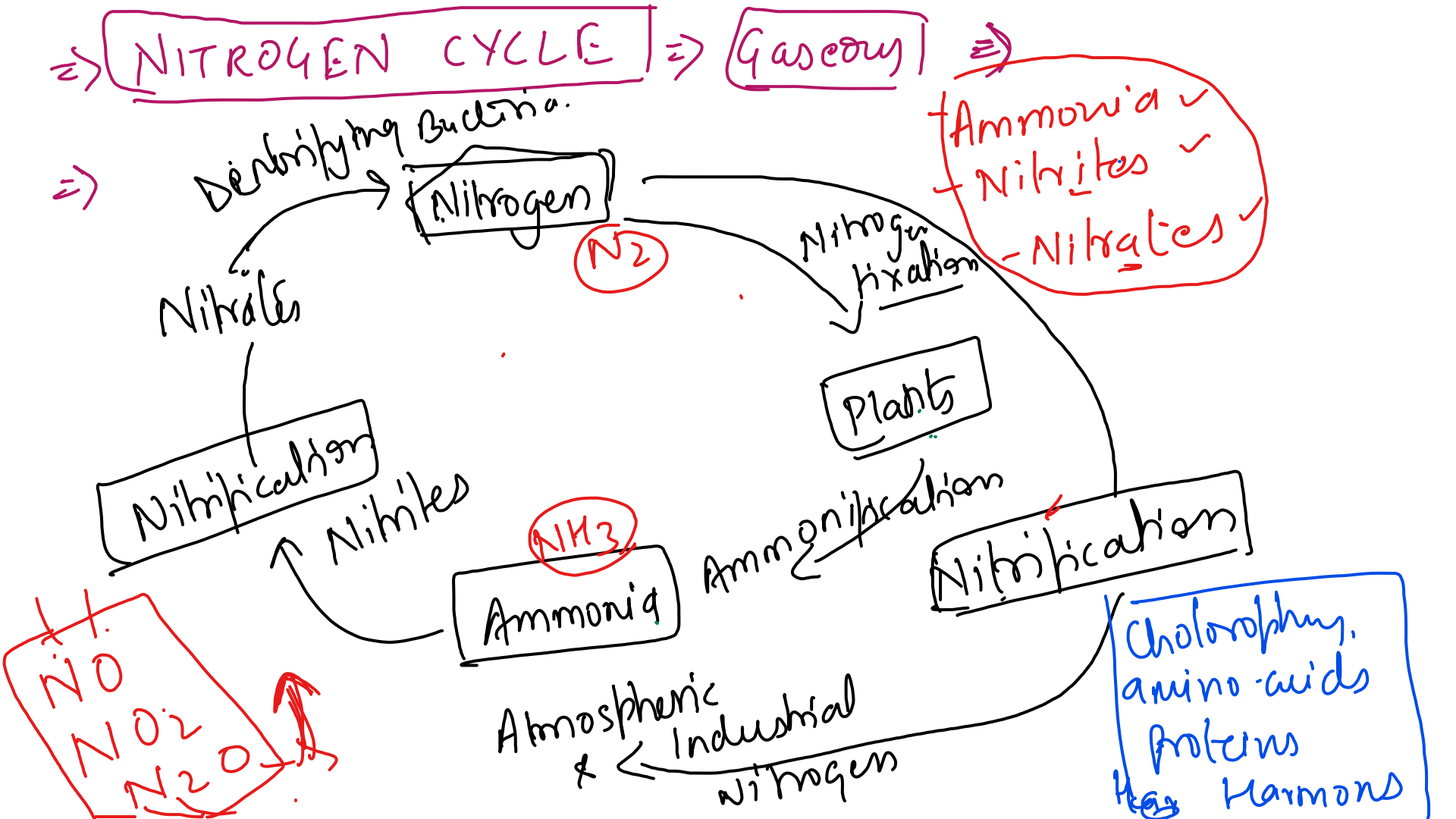
Nitrification

Nitrates

Atmospheric & Industrial Nitrogen

Chlorophyll, amino-acids, proteins, Hormones

NO, NO₂, N₂O



Nitrogen fixation

Ammonia & Ammonium ions

Microorganism (Bacteria)

Azotobacter
=> Bacteria's attach root nodules of legumes

Industrial process

urea
NPK

Ammonia

Thunder & lightning

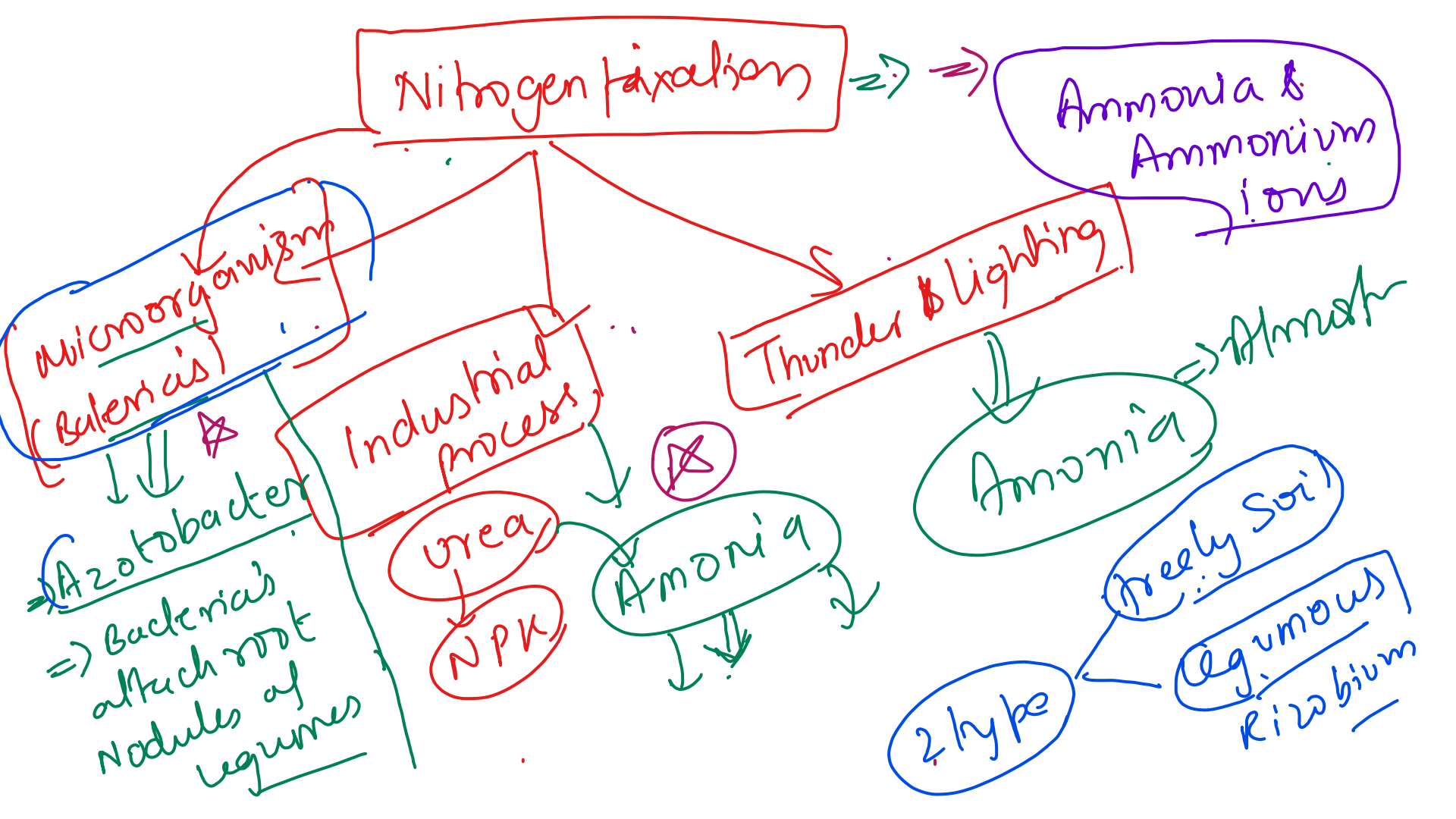
Ammonia

2 type

Free soil

legumes
Rhizobium

Ammonia

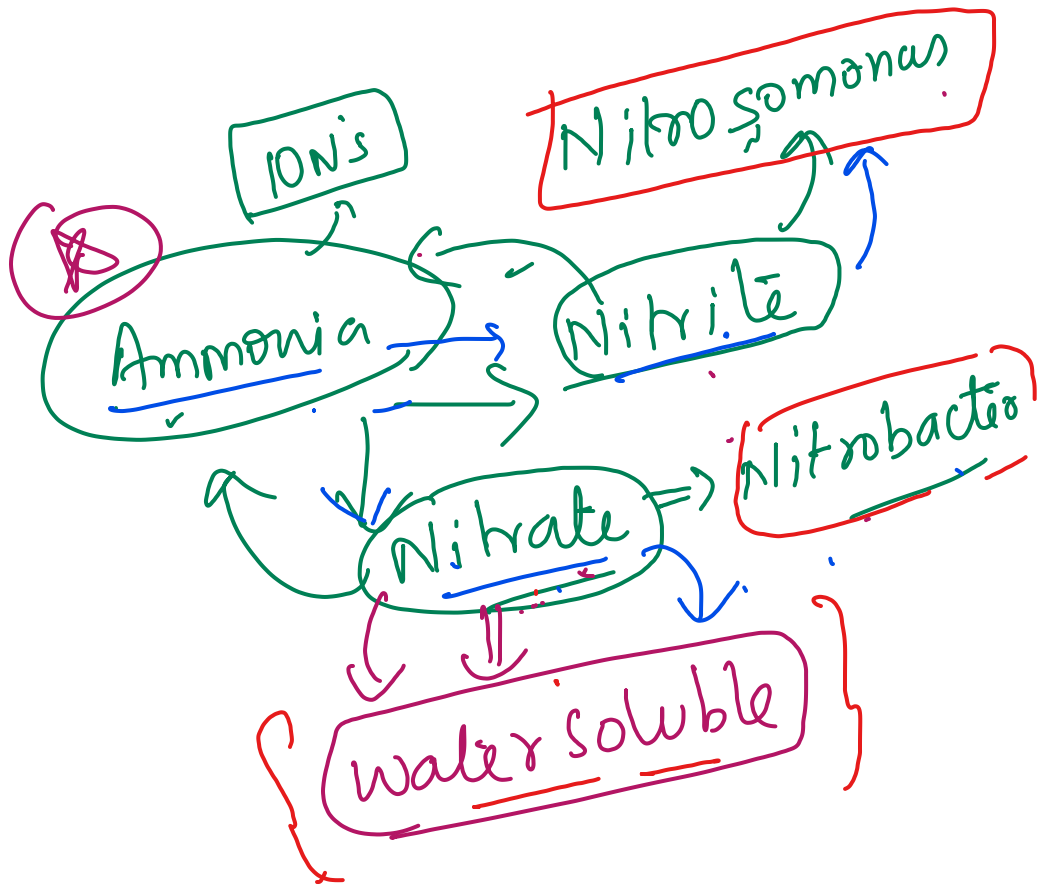


eg: peas, beans
pulses

⇒ Rizobium

(pea, beans
pulses)

⇒
⇒



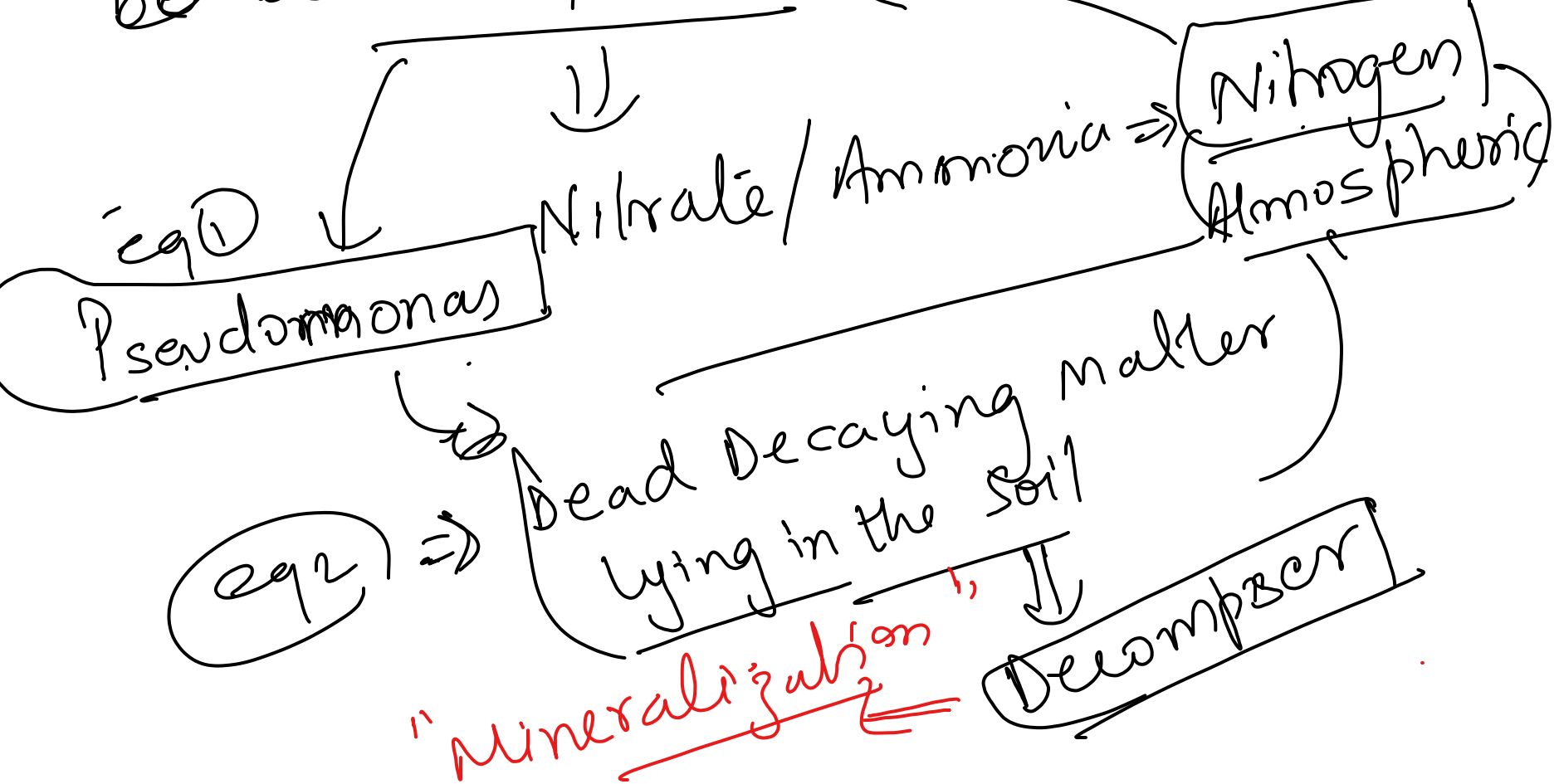
⇒ Uric acid ⇒ waste lying in Nature

↓
converted Back

↓
Nitrate & Nitrate converted
Back ammonia by bacteria

↓
Ammonification

~~Def~~ Denitrification

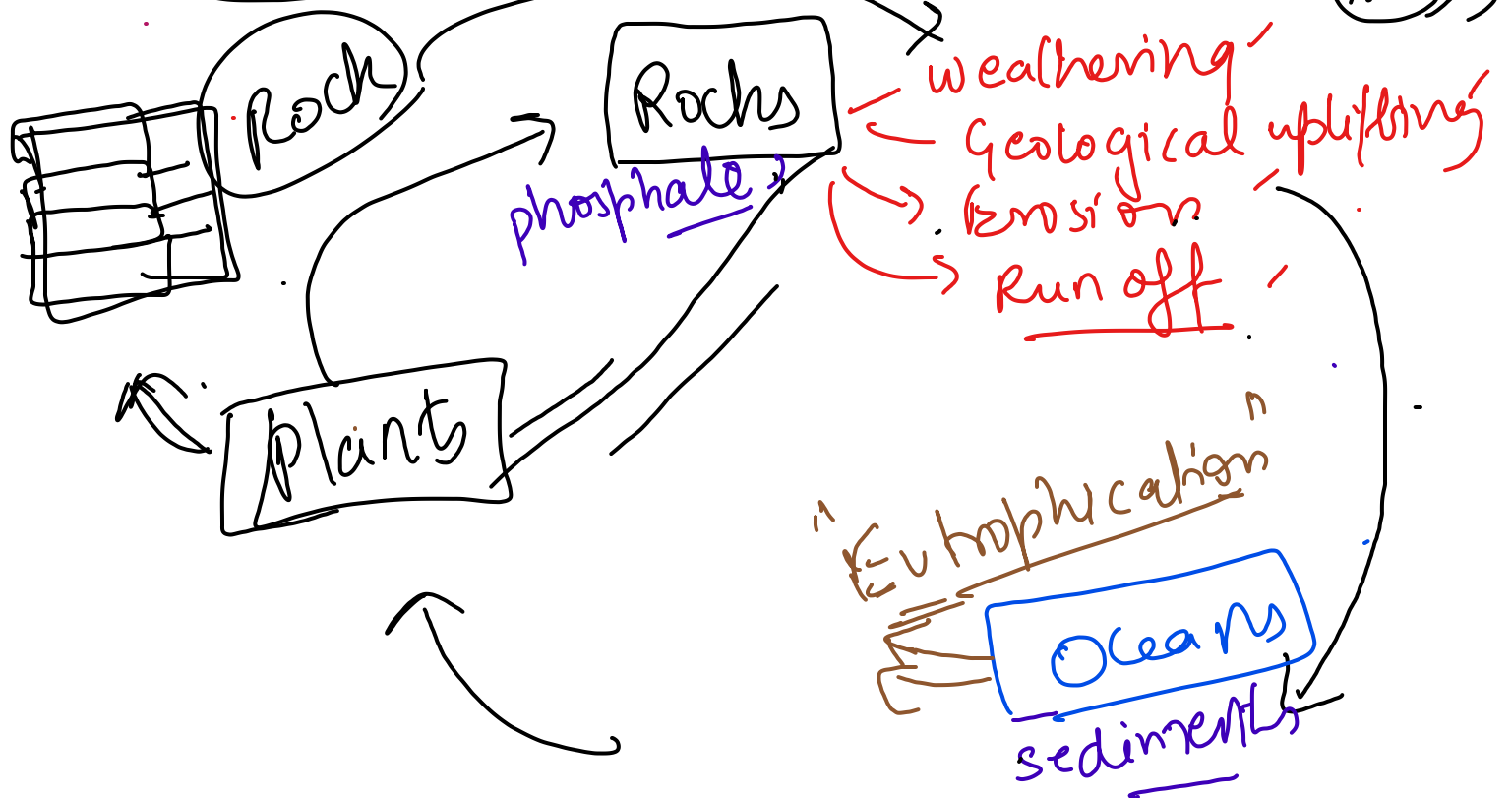


Sedimentary
↓

Phosphorous Cycle

Sulphur Cycle

(NW, E)



⇒ Excessive growth

Earth's crust

⇒

ⁿ Phosphatesⁿ

(Insoluble deposits)

⇒ () - () - () - () - ()

BIOMES → Ecosystem

Terrestrial Ecos

Aquatic Ecos.

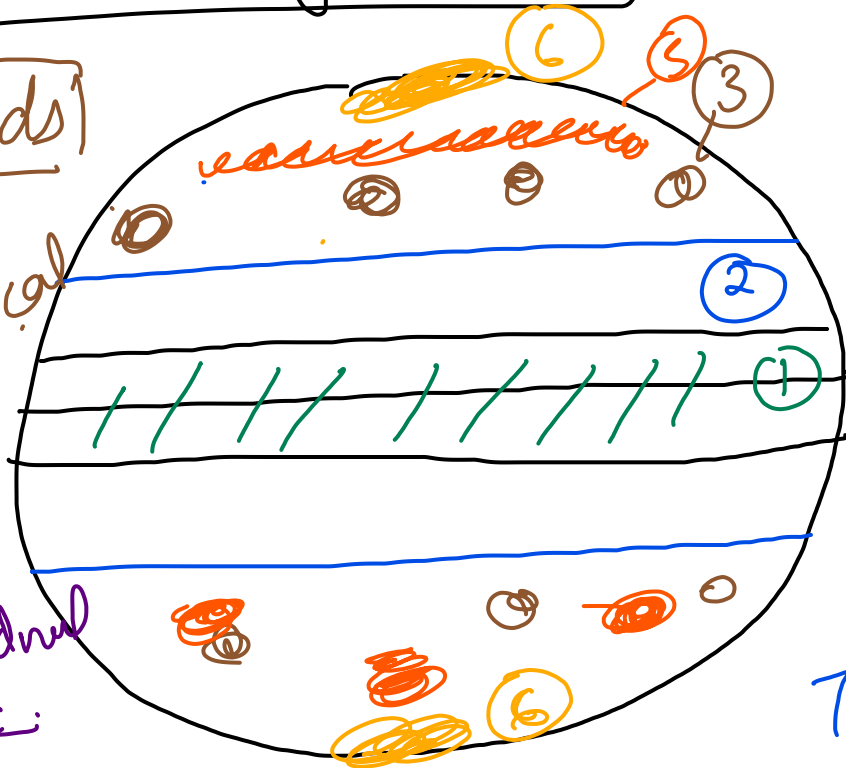
Uniform climate
Uniform Vegetation
" Life form.

Natural Vegetation

③ Grasslands

← Temperate
← Tropical

④ Desert
- Tropical
- Mid latitudinal desert.



① Tropical Evergreen forest

moist - drier

② Deciduous forest

Tropical Temperate

⑤ TUNDRA → .

⑥ TAIGA

6/6/22

Wetlands

Terrestrial Ecosystem

AQUATIC ECOSYSTEM

Estuary

"Brackish"

flora & fauna of In an around water
swamps

{ Estuaries, salt marshes, wetlands, swam

"Mineral water" ⇒ (2-20) ⇒

Freshwater Eco

Marine Eco system

Solubility

↓
(Geography)

5 ppt

35 ppt

avg ⇒

Oceans

5 ppt - 35 ppt ⇒ {Brackish}

⇒ Freshwater

Lentic ⇒

Still water

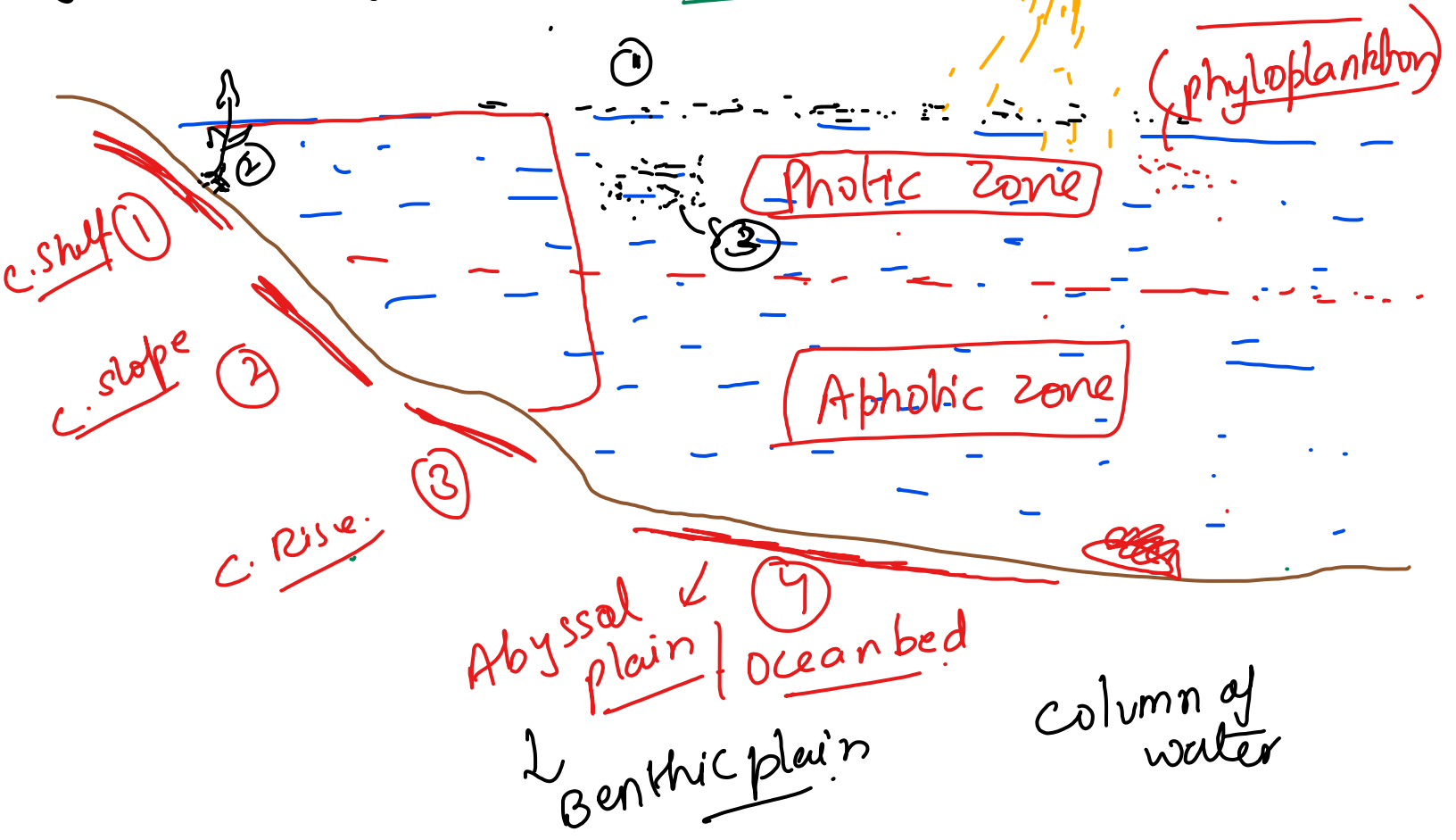
pond, lake, swamp,

Lotic ⇒

Running water

↓
eg Rivers, streams, Brooks

(Types of Organisms) ⇒ organism ⇒



① "Neuston" => Air water interface => plants

② "periphyton" => ~~sub~~ zone of interaction of Terrestrial ^{Free} & Aquatic

③ Plankton => microscopic ^{freely} floating organism Free.
↳ movement =>

④ Nekton => Those ^{which can} swim => fishes / other organisms

⑤ Benthos => crabs, => Those which orgns which
are found on bottom of the ocean
floor.

↓
Lakes, Rivers

⇒ clay, silt, phytoplankton ⇒ turbid (-)

Photic zone ⇒

Aphotic zone ⇒

~~Profunda~~

Profundal zone



Photosynthesis



zero



0

⇒ Dissolved oxygen ⇒



Rate of Oxygen ⇒

Photosynthetic



Microbial Activities



Decomposers



organic matter

Respiration

Eutrophication



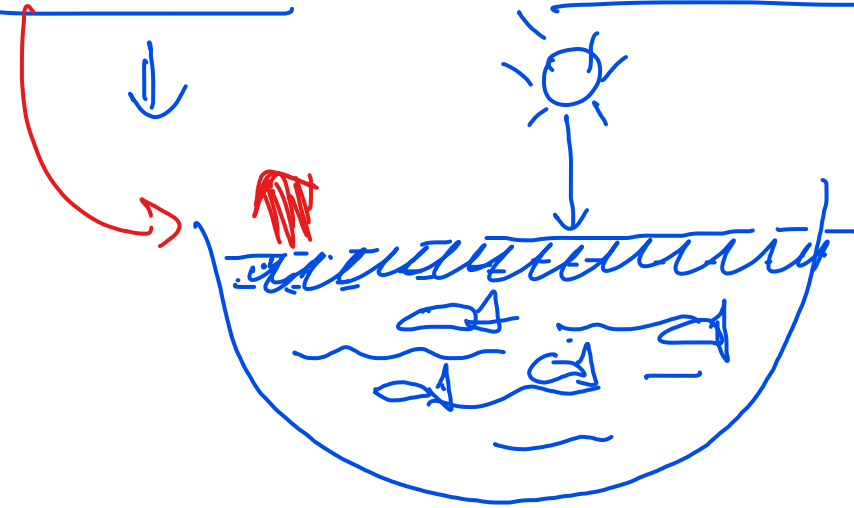
Lakes

⇒ Wont's life

⇓
dead lake

⇐ Oxygen

↳ "winter kill" ⇒ Temperature inverts ⇒ "long cold"
Season



(sunlight won't
penetrate)

Shallow
⇒

Polar Regions
⇒

Wetland Ecosystems

=> ~~EAECE~~
EDEE

- Fresh
- Brackish
- Saline

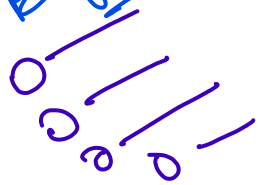


Hydrophytes

hydric

salt

unique species
 very productive
 Edge species



Rainforest

wetlands



(kidneys)

27000



4000

18.41%

=> courtship

70%

=> { Paddy cultivation }

-> coastal wetlands -

Mangroves



Sunderbans

-> lagoons

-> Backwaters =>

Vembanad

Sundan

-> Estuaries

-> Ma

Kerala

-> Swamps

=> marshes

=> Terrai

=> 14

-> coral reef

⇒ Importance

⇒ 'Ecosystem Services' → freshwater supply

⇒ Building material.

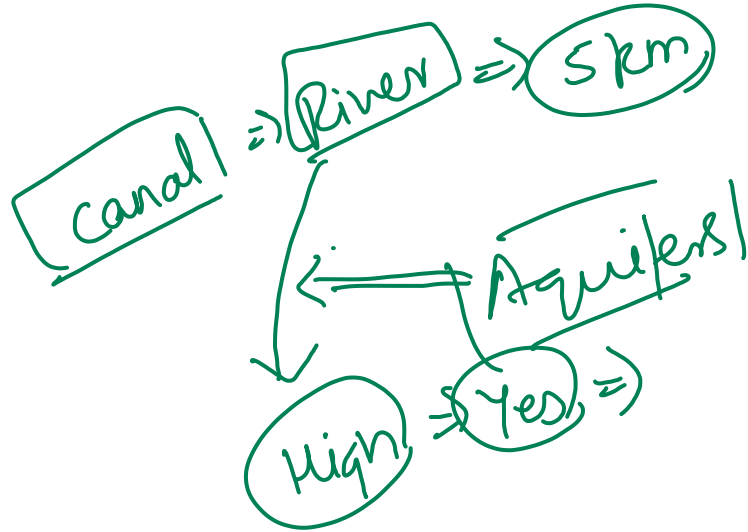
⇒ Biodiversity

⇒ To control flood

→ Ground water recharge

⇒ Habitat → variety
flora & fauna.

⇒ Home / Ground migratory
(Sariska)



⇒ Eco Tourism

⇒ water purification,
filtration of sediments
Nutrients from surface
water

⇒ Nutrient recycling

⇒ stabilising local climate
⇒ flood mitigation /

controlling runoff
soil erosion

⇒ Pollution ⇒ Absorbs



⇒ Depleted ⇒

① Pollutants ⇒

{ Excessive pollutants }
{ Industrial, Domestic waste, Agricultural, }
Beyond the Recycling

② { Habitat Destruction & Deforestation } ⇒

Ecological Imbalance

③

Aquaculture ⇒ Natural Resources

↳ Fish

↓
livelihood / villagers

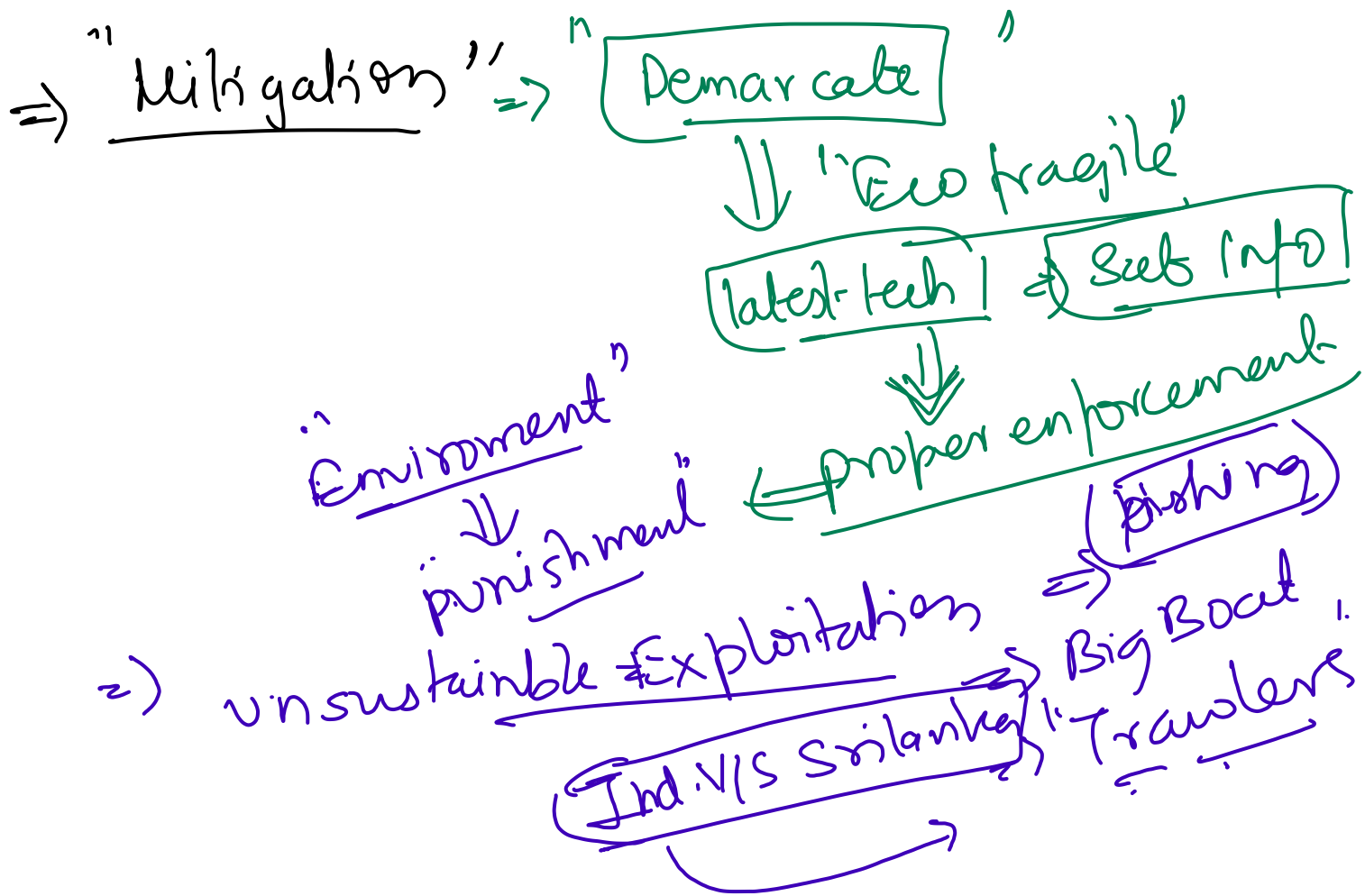
⇒ overfishing ⇒ Ecological ⇒

④ Overgrazing

⑤ Over Exploitation of wetlands

⑥ Illegal Sand mines / construction

⑦ Introduction Invasive Species



2) Treating (I, D, A) ⇒

⇒ Natural Regeneration ⇒ / (⇒ Artificial regeneration)

Edge Species
↳ 'flora / fauna'

⇒ 'Afforestation' ⇒ , weed control invasive species

- Ground water
- soil Acidic

Nature Wecker ⇒ semi deciduous
↳ rapidly

⇒ 'Soil conservation'

⇒ wildlife conservation ⇒

⇒ Sensitizing ⇒ Local

⇒ 'Multiplication' ⇒

Sustainable
Tourism



Measures => Protect wetlands

↳ Wetland International => NGO =>

↳ National Wetland Conservation Program

=> 1985 => 115 => MOEFCC NEWCP

~~Conference of Parties~~

Urgent conservation & interventions

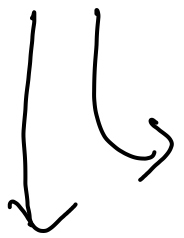
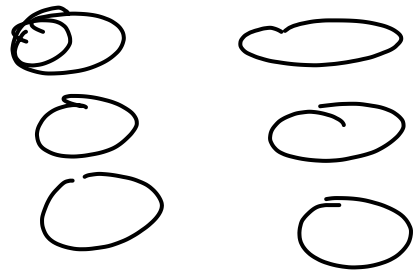
Ramsar Convention

"2" "world wetland"

↳ Iran => 2/feb/97 => feb

Ramsar list

pres



49

2400

Montreux Record

changes ecological character



Ramsar convention

wetland International

