Environmental Sciences

BP205TT

ENVIRONMENTAL CRISIS: WHOM TO BLAME

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Crisis: Desperate District

- Kalahandi (Western Orissa)-News for Extreme Poverty and deprivation-often under drought and sometimes under flood
- Some facts:-

❖Monsoon rarely failed this area

❖Average Rainfall = 1250mm>Punjab Receives

❖Water table-very high in some places

HISTORY

- Not a place of hunger and deprivation
- A few decades ago-it was all green
- 19th Century traveller- Talks about mass of jungle & hills in region
- Livelihood-Six months by forest
  - Six months by agriculture
- One of Richest area in Eastern India.
- How did the things change?

- Network of traditional water harvesting structures (30,000)

  Ponds, Lakes, check dams, even tank within paddy fields.
- Whole system designed to suit the topography (No part of rain water went waste)
- System-under the control of community

Ensure proper maintenance and water sharing through JAL SABHAS

- Social system to protect the forest in the catchment area
- Government took over many of the structures (after independence)
- Maintenance was not proper
- Fearing takeover-Tank converted into crop land by owner

- Focus shifted to large irrigation project through canal system (e.g Hirakund Dam)
- Did not suit the local topography
- Forest-cut down for timber

  - soil erosion & dumping of silt on the catchment area

  - Silting of River bed leading to flood downstream

- Large amount of being lost as run off.
- Result :-

❖A slight shortfall in rain brought water scarcity & large scale crop failure

❖Agriculture-Difficult proposition & People started migrating affecting community life and preventing revival of water harvesting system.

- KALAHANDI slid into a vicious circle and never recovered.
- Question - Who is responsible?
- Source: Mahapatra & Panda (2001)” The myth of Kalahandi: A resource rich region reels under a Government induced drought” Down to Earth, 9(21).

Crisis: The Wettest place on Earth, yet no water to drink

- Cherrapunji-Wettest place of earth

  Average Rainfall = 11.5 m

  Rainfall (1974) = 24.5 m

  One day record = 1563 mm Rain

Question:-

How is it that not a drop of 11.5 m of rain remains to quench the thrust of the people?

- Answer:-

❖ Destruction of forest

❖ Hills around Cherrapunji were covered with dense forest

❖ Forests used to soaks up the heavy rainfall & released it slowly the rest of the year

❖ Heavy rains washed away the top soil, slopes (Destruction of forest) of the slope turned into desert.

- No Reservoir to store the water
- Residents depend on a piped water supply that comes from a far (Erratic and independable)

Source: Joost de Haas, Drinking the sky, Documentary film-BBC Earth Repost.

Connections: Get rid of malaria, but invite the plague

- Sabah (North Borneo)-Indonesian Island
- Malaria was rampant
- WHO began spraying Dieldrin (Related to DDT)-1955
- Attempt successful & Malaria almost eradicated

Side Effects-one

- Dieldrin killed many other insects including flies & cockroaches
- Lizards ate these inspects & died too.
- Cat also died because they ate lizards.
- Once cat declined, rat proliferated in high numbers and there was threat of plague.
- WHO dropped healthy cat on the island by parachute

- Side Effect -Two
- Dieldrin also killed wasps and other insects that consumed a particular caterpillar (somehow not affected by the Chemical)
- Caterpillar flourished & ate away all the leaves in the thatched roofs of the houses
- Roofs started caving in

Source: Miller (2004)”Living in the environment : Principles, connections and solution”-Thomson Learning.

Crisis: Poverty of Plenty?

- Punjab: India's granary & success story of green revolution
- A model for the rest of India & world
- This is the picture sometimes ago.
- Now a story of degraded soil, depleted water table, Reduced productivity and former suicides.
- How did things change so quickly?

- Green Revolution changed traditional agriculture practice
- Green Revolution: Package of

❖HYVS (High Yielding Varieties)

❖Chemical fertilizer

❖Pesticide

❖Water

❖Agriculture Machinery

- Green Revolution- Energy intensive Method (8% of world's oil goes to Green Revolution Agriculture)
- Subsidies by Government kept Green Revolution on track.
- To keep the yield/Productivity-Increase in input every year.
- Problem aggravated-Entry of MNC's-New Varieties of seeds.

- What MNC is doing:-

❖Aggressive Marketing

❖All input at high prices

❖Credit at high interest rate

❖By the crops at low price

- Crop failure-due to spurious seed, Pest attach/drought

- Farmer-Debt and only escape is suicide.
- Green Revolution: Benefited large landowners and not subsistence farmers

Source: Dasgupta, Kumkum(2001) “Poverty Amidst plenty -The Punjabi Tale” UNESCO Courier, January

Connection: Weather change in Brazil, Forest decline in Karnataka

- Brazil-Largest grower of coffee (30% of total world production)
- Drought/Frost-Failure of Coffee Productivity
- World Coffee prices shot up-opportunities countries like India
- Coffee Production in India-3 to 4%
- Kodagu is Karnataka, Nilgiri in Tamilnadu, Waynad in Kerla-57% of Indian Coffee Production

- Grower (Coffee)
- Increased plantation area & needed more manure
- Prefer organics manure for distinctive taste and value
- Require huge quantity of dung
- Selected cluster of villages at the periphery of Bandipur National Park in Karnataka, where agriculture was unprofitable
- Villages became dung factories

- Cattle grazing followed by dung collection became the main business of farmer
- Whole industry-Dung Collector, Agent, Lorry owner etc.
- Increased demand of dung increased the number of cattle
- Grazing area of forest increased along with fuel wood collection
- Tree regeneration affected, Park’s wildlife less forage & degradation set in.

- Brazilian coffee doing very well again and Indian coffee industry in crisis.
- Dung trade has gone to other area and for other plantation
- Poor villagers found new livelihood at the cost of forest
- Should we let tem continue/ban grazing
- Hard questions with no easy answers.

- Source: Sethi Notin (2004) “The Bandipur Brazil Corridor” Down to earth 13(11), pp. 49-52

Disaster: When the mangroves are gone……

- 28th Oct. Night, 1999
- All important question in Bhubaneswar was - will it or won't it?
- Severe Cyclonic Storm developed in the Bay of Bengal will hit Orissa Coast or move away towards West Bengal & Bangladesh.
- Only 12 days earlier Cyclone Struck Ganjam District, killing 100 people & destroying Behrampur town.

- Cyclone: Warning began Sounding 25th October onwards
- People were more disbelieving than alarmed
- CM of the State-Consulting the Astrologer (instead of gearing of administration on cyclone)
- Got assurance (Astrologer), Orissa will be spared

- 2nd Cyclone struck-Coast of Puri to Balasore (Six districts) for 2 days
- Toll of Cyclone -

  Heavy damage to life property in 18000 villages

❖ 10,000 people died

❖ 15 million hectare of agriculture land damaged

❖ Half a million cattle lost

❖ 1.8 million hectare of agriculture land damaged

- ❖ 90 million trees uprooted
- ❖ Significant damage to infrastructure
- Earlier forest-Buffer Zone (5 km wide) against strong wind & flash flood
- Lately, Large tracts of Orissa's mangroves were cleared to make way for shrimp farms
- Coast lost its natural protective shield
- Cyclone stuck the coast, path unfettered and travelled as much as 100 km inland.

- Area near paradeep (Forest are intact) saved from the ravages of the cyclone.
- What about future?
- Is planting of mangroves being undertaken vigorously.
- Is Orissa better prepared?

Source: Banerjee, Ruben (2001) “The Orissa Tragedy: A Cyclone’s year of calamity”New Delhi: Books Today

HABITAL: Means

- Natural Surroundings in which an animal or plant lives.
- Habitant of a given species/population- Characteristics physical and biological features

❖ Vegetation

❖ Climatic condition

❖ Presence of water and moisture

❖ Soil type etc.

- Any change in any characteristics-Affect the habitant of the species.
- Each species in ecosystem has its habitant & own ecological niche within the habitant
- Ecological niche-Characteristics by

❖Particular food habits

❖Shelter seeking methods

- Ways of nesting & reproduction and includes all aspect of organism-

a) Where the organism lives
b) What it eats
c) Which organism eat it
d) Interaction with abiotic environment

The question now is whom to blame.

Whether we want next generations to live a healthy and green life?

If yes, our generation will have to take a lead in protecting the environment.

Every individual will have to take a step in protecting the environment in and around.

An awareness campaign regarding environmental education needs to be taken on a large scale.

Thank you