

**CARRYING CAPACITY BASED DEVELOPMENT PLANNING OF
DAMODAR RIVER BASIN**
(A Study sponsored by Clean Technology Division of MoEF)

GENERAL RECOMMENDATIONS

- 1) A Coordination Committee should be formed to oversee the implementation of recommendations and to coordinate the activities between two states of Jharkhand and West Bengal. A suggestive mechanism is to have two representatives and one NGO from each State.
- 2) Major pollution problems are confined in the region from Ramgarh to Durgapur, which should be given high priority.
- 3) The upstream region faces acute shortage of power. Some of the old and polluting power plants, whose efficiency is less than 30%, must be replaced by super thermal power plants with pollution abatement equipment to meet the energy demand. Bokaro Thermal A/B may be closed or may go for modernization.
- 4) Six coalfields are generating huge amount of OB dump, which are damaging the landscape as well as creating environment pollution. Land reclamation of the OB dump should be done on large scale.
- 5) Coal and wood burning in domestic sector must be replaced by LPG both in mining and tribal areas.
- 6) Tribals should be provided with alternative source of livelihood apart from collection of forest wood.
- 7) To protect the life line of the region i.e. Damodar River, Damodar Action Plan must be taken into consideration for immediate cleansing of the river.
- 8) To increase the reservoir capacity, desiltation of Maithon & Panchet reservoirs should be initiated.
- 9) Environmental awareness programme should be conducted in rural areas for the protection of forest, consuming good quality of drinking water and health and primary hygiene.
- 10) Industries like coal washeries and coke oven plants should have combined effluent treatment plant.
- 11) Attempt should be made to dispose of fly ash generated by thermal power plants and a feasibility study be undertaken on using flyash for backfilling underground mines, land reclamation of OB dumps and other purposes like cement manufacture.
- 12) Environmental Master Plan of major and minor towns of the basin should be prepared.

- 13) For medium size and large-size industries, it should be a mandatory to obtain ISO 14000.

SECTOR-WISE RECOMMENDATIONS

AIR

- 1) The conflict zone (Cultural heritage sites of Karanpura Valley) threatened by mining activities, should be avoided for any industrial expansion.
2. Measures may be taken to minimize air pollution level in mining areas, specially the CCL and BCCL coalfields (having air quality in fair & dangerous zones). Grid Nos.22, 25, 26, 27, 28, 29, 30, 31, 33, 34 and 35 face air pollution problems due to high SPM levels.
3. Major industries causing air pollution are mining activities in Grid Nos.25,26,27 and 29. In Grid No.30, thermal power stations at Chandrapura, Santhaldih and Jamadoba; coke plants at Barari, Sindri and Mahuda are the major pollution sources. In Grid Nos. 31 & 32, Bokaro Steel Plant and hard coke plants are polluting sources. In Grid No.33, IISCO (Kulti) refractories, beehive coke oven and thermal power stations are the sources of pollution. In Grid No.34, DSP, IISCO (Steel Plant) and in Grid No.35, DPL, Durgapur Chemicals and Hindustan Fertilizer are the chief sources of pollution. All the industries should be modernized or be fitted with electrostatic precipitators and other suitable emission control equipment.

WATER

1. Ground water depletion must be checked in coal mining areas by sealing or recharging.
2. Damodar river and reservoir water are chief sources of drinking and agriculture. These must be protected from pollution load.
3. All the industries like coal washeries located at the bank of river (Sumadh, Dugdah, Patherdih, Jamadoba) must be provided with settling tanks and other treatment facilities.
4. Some of the thermal power plants, which are discharging raw water into the river, must have effluent treatment facilities.
5. All the major towns should have sewage treatment facilities (Ramgarh, Chandrapura, Phusro, Bermo, Dhanbad, Jharia, Sindri & Asansol).
6. Damodar Action Plan may be executed to cleanse the river immediately.
7. Desiltation of the Damodar river should also be taken into consideration in the upper stretch to remove coal particles, flyash and oil and grease, settled at the bottom of the river bed.

8. Minimum flow of water should be maintained from Dams like, Tenughat and Panchet to increase assimilative capacity of the river, especially during the lean period.
9. Independent pollution control mechanisms for coal washery rejects and coke ovens is desirable.

LAND

1. Land degraded due to mine fire, subsidence and OB dumps should be reclaimed and rehabilitated in massive scale in all the six coalfields.
2. Forest coverage should be increased from 20.19% to atleast 33% for which new forest policy of the two States should have to emerge.
3. The upper Damodar River basin is very much prone to soil erosion. A comprehensive package should be made to protect soil erosion.
4. Municipal solid wastes should be properly disposed of in major towns (Dhanbad, Durgapur, Asansol, Jharia, Sindri and Ramgarh).
5. Some incinerators may also be constructed in major towns like Bokaro, Dhanbad, Jharia, Asansol and Durgapur.
6. Technological input should be given for disposal of flyash generated from thermal power plants.
7. The industrial solid waste generated by Steel plants like DSP and BSP should be properly disposed off for protecting the ground water from being contaminated in the region.

FAUNA & FLORA

1. New forest policy for Damodar river basin should emerge to enhance forest cover to atleast 33% of the total land.
2. Special task force should be made to take measures for the protection of existing forests and wildlife sanctuaries falling in the region (Hazaribagh National Park, Palamau Tiger Reserve, Migratory Corridor in North Maranpura Valley and forest area of Koderma, Topchachi and Parasnath).
3. Development of green belt must be attempted in and around industrial establishments, overburden dumps, roads and highway corridors to attenuate the environmental hazards.
4. Implementation of agro-forestry, social forestry and afforestation with medicinal plant cultivation programmes should be given an honest attempt.
5. Aquatic environmental safety programme may also be initiated to restore vanished fishes and other species of Damodar river.

6. Development of biosinks for pollutant assimilation like turtle experiment may be done in the line of Ganga purification, especially in most polluted zones at Panchet Reservoir and Durgapur regions.

NOISE

1. Development of green belt, noise attenuation system like provision of acoustic walls should be done at each of the industrial premises (thermal power plant, steel plant, coal washeries, coke plants and open-cast mines)
2. Old machineries being used in industries should be replaced by modern equipment, fitted with silencers and noise absorbers.
3. Heavy earth moving machineries in coal mines should be properly maintained to reduce the noise level.
4. Flyovers at busy traffic junctions and railway crossings should be constructed to reduce vehicular emission and noise pollution (Andal, Mahuda and Kumardhubi locations).
5. Plantation along the transportation corridors should be done.

SOCIO-ECONOMIC ASPECTS

1. In urban and rural sectors, basic amenities like potable water supply, medical facilities, educational institutions, power supply, transportation, communication and sanitation facilities should be strengthened.
2. Cooking gas facility for the domestic purposes must be provided to mine workers to prevent open coal burning.
3. Implementation of novel and appropriate family planning programmes and promotional activities should be attempted.
4. Promotion of Non-material Quality of Life (NQOL) Concept should be advocated.
5. People should be encouraged to set up cottage industries and other small scale industries by providing interest free loans/soft loans.
6. Agricultural sector should be promoted in the West Bengal region.