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DEPARTMENT OF ENVIRONMENT & REMOTE SENSING

GOVT. OF J&K SRINAGAR/JAMMU

From the Editor's Desk

The Wetlands carry a great importance in the Socio- economic profile of the State of J&K.

Wetlands are areas where water is the primary factor controlling the environment and associated animal and plant life like Wular wetland.

There is a strong link between wetlands, tourism and recreation. Wetland tourism needs to be thought of in the State, as it has benefits both locally and notionally by way of stronger economies, sustainable livelihoods, healthy people and thriving ecosystems. Ensuring well managed tourism practices in and around Wetlands of the State and simultaneously educating tourists on the value of wetlands contribute to their health and long term benefits to wildlife economics and biodiversity. This needs to be looked into more discreetly in view of Wetlands Rules 2010.

In addition apart from scenic beauty of the Kashmir Himalayas due to Wetlands, Glaciers have a very great impact. As Kashmir Himalayas receive more than 70% Precipitation during winter and early springs because of westerlies. The climate change is vivid here as there are diminishing each year and has already resulted in present abnormal Precipitation distribution in the region. A complete analyses including mapping and other environment safe guards are required as a part of quick action.

It thus becomes imperative for the State to undertake a comprehensive Environmental Impact Assessment (EIA) for each and every project in all development sectors as is also required under EP ACT 1986 (EIA notification of 16 Sept. 2006).

The state needs to undertake environmental studies which will be backed up by the remote sensing and GIS technique, so that identification of environmentally sensitive areas gets quickened up for formulation of proper Environmental management Action Plan.

Sojourn climate is God's blessing to the state of J&K and we need to take effective measures to preserve and conserve it for health and well being of posterity.

Editorial Board

Wular Lake:-

Wular Lake is one of the largest fresh water lakes in Kashmir Himalays. It plays a significant role in hydrographic systems of the Kashmir Valley by acting as a huge absorption basin for the floodwater of the lake. It is an important natural habitat for wildlife. It contributes to about 60% of the total fish production within the State. The

Lake is a source of livelihood for a huge human population living within the immediate catchment of the lake.

The major threat to the lake is extensive siltation excessive weed growth etc. It has shrunk from 202 sq kms in 1911 to 29 sq. kms. It is a designed Ramsar site under the wetland Conservation plan. This lake is suitable wintering site for a number of migratory water fowl species such as common Teal, Blue Winged Teal, Mallard apart from large number of flora & fauna which is found in the lake and is house to many extinct flora & fauna.

It is located about 34kms North West of Srinagar city at an altitude of 1530 kms. It is between 34"20' latitude and 70.42 longitude. It is elliptical in shape with a maximum length of 16 km and breath of 7.0 kms. The lake is surrounded by high mountain ranges on the North eastern and north western sides, which drain their run off into the lake through various nallahs of which the prominent are Erin and Madhumati. On the Eastern and southern sides are the low lying areas of Sonawari. The land reclaimed has been brought under cultivation growing paddy dry Willow and fruits. The agriculture run off and sewage are the contributory factors of the present position of the lake. In the north, the village are Ashtung mangnipora, Watapora, Qazipora, Kaloosa and in the east are

Bandipur, Nosu, Wethra, Gurur, Saderkot, Ajas and in the west village include.Sopore, Kanibhati and Watlab.

The hydrology of the wular lake is complicated and the main drains which

supply to the lake include Astengo Nallah, Erin nallah, Kinhuma Nallah, Gadkul nullah, Ningl, Argam Botengo,Ajas and Haritar. The minimum average inflow in the lake has been observed to fluctuate between 1030 & 43314 Cusses while maximum outflow between 870 and 318 cusses. More than 8000 fisherman earn their livelihood from this lake. Many people are engaged in Water nut harvesting and Lotus Rhizomes.

This lake is fed by large number of streams which enter it from all sides, Jhelum being the most important which enters this lake at Baniyari in Hajan. The lake is located on its delta and Jhelum deposit most of its silt and nutrient load there. Other note worthy tributaries are Madhumati,Erin, Ningli and watapora. Jhelum is the only distributary which leaves at Ningli near Sopore on its Southern side. Water is mostly alkaline.

The only outflow of the lake is the river Jhelum flowing through Sopore and Baramulla towards POK. The urbanization and forest management practices in the inflowing catchment of Wular-I & Wular-II, Gunder, Ningli, Erin and Madhumati besides agriculture, Horticulture and animals husbandry practices have contributed to eutrophication of the lake.

Besides plantation activity, use of chemical fertilizers, pesticides and fungicides in the

catchment area and socio-economic conditions of the people contribute to lake condition and the demarcation.

The priority of Govt. should be to demarcate the lake and carve out a comprehensive strategy for the Wular Lake. As per records and data collected by the dept.(2007-8) there are 3 Tehsils in which Wular Lake falls viz:- Bandipora, Sopore and Sonawari. The encroachments around the Wular Lake are as under:-

Bandipora - 11,853 Kanals
Sopore - 6,186 Kanals
Sonawari - 50,258 Kanals

Effective measures need to be taken in this connection.

Environmental issues with Lakes of the State

1. Siltation.
2. Soil erosion in the catchment.
3. Carrying of nutrient load by river Jhelum and dumping of the same in

Wular.

4. Prolific raising of plantation at Ningli.
5. No Check on population and housing around the lake.
6. Flow of sewerage into the lake untreated.
7. Run off from the agriculture fields due to unplanned land use strategy.
8. Use of fertilizers, pesticides and weedicide.
9. Water rights to the locals for water Chestnut and Nandroo.
10. Change of land use/ land cover.
11. Deteriorating water quality.
12. No potential for hydro-electric power projects due to receding water in land.
13. Weed infestation.
14. Eutrophication.
15. Reckless fishing activities.
16. Movement of heavy vehicles.
17. Noise created by construction and other developmental activities leading to water birds and other migratory birds to change their nesting ground.
18. Socio-Economic condition of the locals.
19. Forest and non-forest areas under stress.

Suggested Measures for Conservation:

1. To arrive at a scientific land use policy.
2. To device a flood control strategy for the valley.
3. Demarcation and mapping of the lakes.
4. Research and development in the lakes.
5. Desilting and deweeding of the lakes.
6. Water recharging.
7. Land use, land cover studies and treatment of catchment.
8. Bio-diversity studies.
9. Water budgeting.
10. Baseline data bank creation on the production of sewage and other agriculture run off and solid waste created.
11. Installation of Micro Sewage treatment plants.
12. Diversion of sewage and drains into treatment plants.
13. Creation of re- creational parks around the lake.
14. Installation of watch towers on the lake.
15. Round the clock water quality monitoring.
16. Bio- mapping of the lake.
17. Water harvesting to enrich the aquifer.
18. EIA studies to be under taken in all development activities in and around the lake.

19. Open latrine system to be abolished.
20. Polythene banning.
21. Catchment development (pastures, development, trampling to be banned).
22. Rehabilitation plan for displaced persons/ families.
23. Removal of manmade bunds to increase the water span and flow of water.
24. Siltation needs tackling on war footing.
25 Eco-friendly dredging needs to be carried out.
26. Silt traps on the mouth of a each nallah and the incoming channels.
27. Treatment of waste water.
28. Argumentation for Phosphorous and sulphur.
29. Bio- diversity mapping and comprehensive studies.
30. Reshaping of reed belts for nurturing and nesting aquatic migratory birds.
31. Involvement of NGOS and schools for awareness.
32. Mobile air and water lab.
33. Soil erosion through contour bunding.
34. Duckweed cultures may be arresting by contour bunding.
35. Stabilization ponds establishment thereof.
36. Ring channel in the periphery of the lake for arresting erosion.
37. Rain harvesting.
38. Development of Benthic invertebrate communities.
39. Fisherman welfare scheme.
40. Kangri and handicraft centres to be established.
41. Growing of waste land species as bio-indicators e.g dragon fly is extremely sensitive to changes in grassland and water quality.
42. Medicinal value and Biological important species to be encouraged.
43. Fencing on all sides of a compartment.
44. Dibbling, contour Bunding terracing, gully plugging, DRSMS soil/ sand fill. Dredging and desilting, manual deweeding can be part of work areas.
45. Removal of encroachments.
46. Ground water Replenishment.
47. Climate change mitigation.
48. Recreation and tourism.
49. Cultural value.
50. Natural regeneration.
51. Patrolling by motor boats.
52. Entrophication.
53. Arresting loss of species.
54. Legislative and administrative measures.
55. Water budgeting and sustainable utilization of wetland.

GLACIERS

Receding glaciers in Kashmir Himalayas is the main indicator of climate change in the region. The Kashmir Himalayas receive more than 70% precipitation during winter and early springs because of western lies which is diminishing year after year. About half of the greater Himalayas is occupied either by the snow fields or glaciers aboding this mountain range. Their melt run off make


Kangrez & Shafat Glaciers

the north western Himalayan rivers perennial on which half of the population of Indian sub continent is dependent for food and energy. Apart from global climate change most of the damage caused to the environment locally on the name of economic development which include ecological surgeries like change of forest areas, earth filling in vast submersible areas for housing colonies, change in land use like paddy to orchards, urbanizations deforestation, desertification etc has drastically changed the climate of the Himalayan region which has resulted in the present erratic abnormal precipitation distribution in the region. 30 years back the State used to have number of snowfall spells in each winter with minimum of 1-2ft, snow in each spell. We used to have normal snow fall from November to middle of March. The higher reaches of Himalayas as well as Pir Panchal range would receive 15-25 ft. Snow every year which would get accumulated in the upper mountain valleys called as snow accumulation zones and would melt slowly and feed all the streams throughout


Glaciers of Chinab River

summer period. Whereas presently there is hardly 1-2 ft. snow falling during the entire winter period in the valley and maximum of 5-6 ft. snow on the higher reaches which mostly disappear in the spring season only. Most of the streams of all the rivers become

dry. There seems 60% loss of snow/glacier cover in the Himalayan region during the past 70 years. When the comparison of toposheet is made with the latest satellite imagery, undoubtly there is an increase in the temperature partly due to global warming and mainly because of the local and regional human interference on the environment which is accelerating the rate of snow and glaciers melt year after year. This remarkable change in the temperature in the region is well pronounced when we see the common staple food of the region like maize, wheat, local paddy etc. is being grown in those high altitude villages like Aru (Pahalgam) Sadou (Shopian) etc which could hardly produce peas, potatoes and buck wheat as their staple food. Not only this, the discharge of the main rivers like Chenab, Jehlum Indus and their main tributaries has decreased to more than 50% what was 60 years back as per cwc data. We have lost more than 40% of the wet area during the past 5 decades which has caused a huge damage to the vegetation cover of the upper reaches and has deepened the water table. These changes have started alarming the life of our dams, rivers valley projects, irrigation networks, tourism etc. Draughts have started reckoning after every 3-4 years and almost in all the major streams of Kashmir valley there is huge

water scarcity every year which is the main worry to the farmers who have started changing the land use. The deptt. has studied few glaciers of Chenab, Jehlum, Suru, Zanskar, Nobra valleys and a few mountains glaciers for the last 20 years which include Thaywas, Machoi, Kangrez, Shafat, North polo and Siachin.

The study revealed that all the glaciers of the Himalayan region are fast receding

more because of less precipitation in winter in the form of snow than due to rise in temperature. This recession of glaciers and snow fields will have far reaching effects on

the environment of this region as well as the social set up of the people living in this area.

The major problems can be:

1. A further shrinkage of glaciers the melt run off will increase and tail irrigation catchments of glacier fed rivers face water shortage.
2. Water table will go deep and spring will loose discharge and people dependent on them will face lot of water problems.
3. Decrease in hydro-power potential as well as the life of projects.
4. Wet surface area will reduce further and there will be upward swing in temperature which will further hasten the snow melt run off and will tell upon the life of the glaciers.
5. Change in the land use may occur due to paucity of water in the tail and river catchments which will inturn bring the change in eco- systems.
6. Change in local climate

This all demands a comprehensive scientific study for creation of a data bank on Himalayan glaciers so that a future policy is conceived under the Himalayan Ecosystem of the National Action plan on climate change.

Wasteland status of J&K

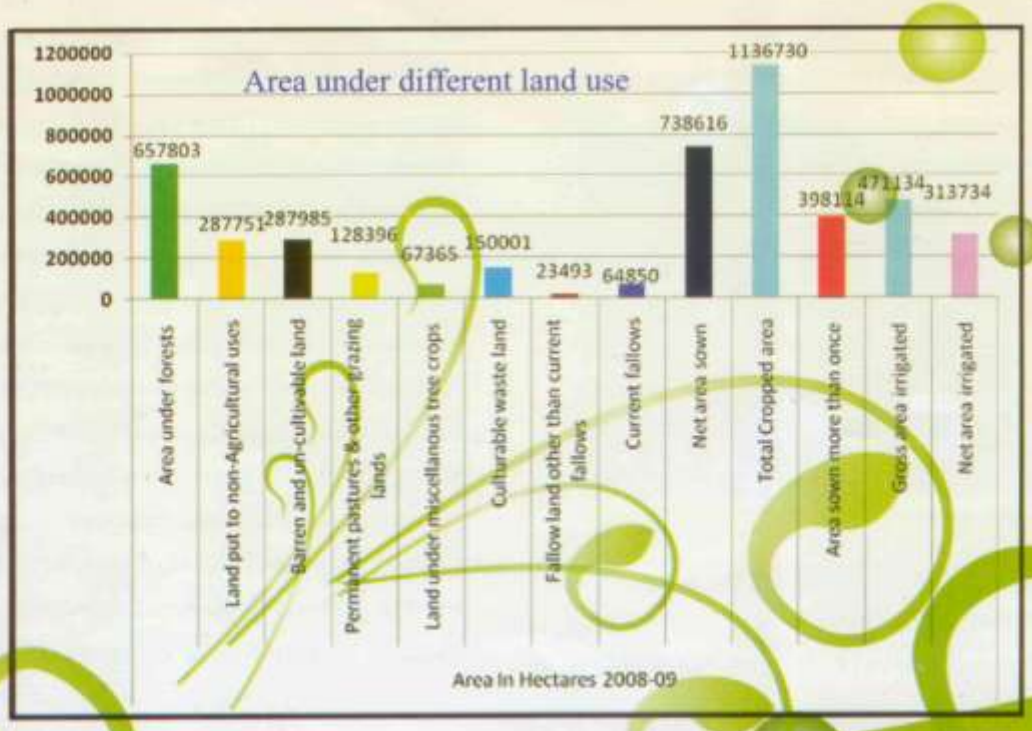
Wasteland is described as the degraded land which can be brought under vegetative cover, with reasonable effort, and which is currently under-utilized, and land which is deteriorating for lack of proper water and soil management or on account of natural causes.

Wasteland mapping on 1:50,000 scale was undertaken in the State using satellite datasets corresponding to different years (1986-2000), these wasteland maps were updated in 2004 by using one season (Rabi) data set of 2003 a modified classification system with sub classification of the categories was used. Two types of wastelands are mainly reported in the State are:

1. Natural wastelands
2. Manmade wastelands

The wastelands which are formed due to natural processes like weathering, erosion, desertification, frost action, landslides and snow avalanches etc. can be brought under productivity by adopting various biological and mechanical methods for its reclamation. Only barren rocky area cannot be reclaimed for vegetal cover but it can be used for urbanization, industrialization etc. In Jammu region apart from barren rocky another major wasteland category is sandy desertic particularly in Kathua area which are the natural wasteland categories in addition to number of other wastelands

mostly caused due to human activities. In Kashmir region, besides barren rocky wasteland, there is scrub land which has been mostly found on the steep sloppy areas there is also wasteland caused due to snow avalanches, landslides & other natural processes like frost action. Manmade wastelands include those caused by the brick kilns, stone crushers, deforestation and unplanned urbanization. In ladakh region almost 97% of the total area comes under various categories of wasteland, which are desertic in nature. The important categories of the wasteland include barren rocky, sandy desertic. The wasteland caused due to human activity in Ladakh region is mainly due vegetal degradation as there is huge pressure on biological resources of the region to meet the fuel/fire wood and the fodder requirements of the people especially in the Zanskar and Changthag region where people are mostly dependent on livestock for their sustenance. The wasteland map of the State in presented below As per this Figure, the State is one amongst the critically affected states with more than 50% geographical area under wastelands. With two categories of wastelands Barren rocky area (45.74%) and Snow covered and glacial area (15.8%) being predominant.



The lake of desire

WORK ON THE ARTIFICAL LAKE AT THE TAWI RIVER BED IS PICKING UP PACE AND IS PROJECTED TO BE COMPLETED BY THE YEAR 2012. THE LAKE IS PROPOSED TO HAVE BIG ADVANTAGES REGARDING TOURISM AND ENVIRONMENTAL CONCERNS ALIKE

After long wait, Jammu is all set to get an artificial lake from the left bank of River Tawi at Jogi Gate. This is a step towards the beautification of the temple city, which has been craving for attention for a long time. "At last, a realization has dawn on the policy planners to address to the city's needs which is thronged by over 30,000 countrymen each day," says Raj Kumar, a retired senior official of the state administration.

The preliminary work on the Rs 30 crore lake project is apace with the J&K tourism department and the irrigation department joining hands to ensure its completion within a stipulated time frame.

As per the experts and those engaged with travel and tourism, the upcoming artificial lake will help give a big boost to local tourism, bring down temperature in the Jammu city besides recharging the ground water level besides attracting migratory birds which is a step towards the environment conservation.

The city dwellers are excited over the project and wish a Boulevard to be constructed around the lake so that it can emerge as a pathway for morning and evening walkers besides those spending some time away from the hustle and bustle of the city life.

"It is an important step towards tourism promotion in the region that has witnessed neglect for the previous six decades and will eventually give boost to the economic activity in the entire area," said Gulshan Kumar, a shopkeeper.

Those residing close to the lake project are thrilled to see the pace of work on this vital project, as it is going to change the destiny of many besides giving an aesthetic look to the grandeur of the city landscape.

"We want that the lake should come up at the earliest. It is a great stride and will prove advantageous for the people residing nearby because of its economic significance and potential to generate employment," observes Sourabh Kapoor, a resident of Prem Nagar.

"At last the state government has woken up from the deep slumber and the available resources are being exploited to develop the world class tourism infrastructure in the state. The state has many such places, which could be developed as potential tourist attractions," says Gresham Bano, a resident of Sidhra.

"When completed this lake will surely be another asset for the state and an addition to its rich tourism potential," she adds.

To offset the apprehensions regarding the violation of the provisions of the Indus Valley Treaty, a three member team led by Pakistan's Commissioner for Indus Water Treaty (IWT), Sheeraz Jameel Memon, visited the site of the artificial lake recently.

"They may have doubts regarding violation of Indus Water Treaty signed between the two countries but we have carried out work within the permissible limits of the pact," the minister for PHE, Irrigation and Flood Control Taj Mohiud-Din said, adding, "No violation has been committed in the design of the lake or even in the water storage."

Though started beyond the stipulated calendar, the artificial lake project is in full swing and is expected to be completed by 2012. This project will not only help in irrigation but will also help to attract tourists.

First eco-tourism project in J&K

Jammu: Set amidst the verdant woods and mountain peaks with a chain of high altitude lakes, "Dera-ki-Gali" will be set up as the first eco-tourism spot in Jammu and Kashmir.

"We are setting first eco-tourism project in Jammu and Kashmir at famous woodland of Dera-Ki-Gali in Pir Panchal belt in Rajouri district. We are following states like Karnataka and HP in eco-tourism," minister for forests and environment Mian Altaf said.

"Dera-ki-Gali" and its adjoining areas will be developed under the project in a phased manner, he said. Altaf on Wednesday inspected pace of work on various ongoing eco-tourism projects at "Dera-ki-Gali" and also took stock of the situation.

Heavy rain due to man-made warming: Study

SRINAGAR: S.D.A. Housing Colony Bemina,
Srinagar-190018 Telefax: 0194-2494585,0194-2490823
May-October

Jammu: Paryavaran Bhavan Forest Complex
Transport Nagar Gladni Narwal-180016
Telefax: 0191-2474553, Telefax: 0191-2490020
November-April

email- jk@envis.nic.in