

**ACTION PLAN FOR RESTORATION
OF POLLUTED STRETCH OF RIVER NAGAVALI
ALONG JAYKAYPUR TO RAYAGADASTRETCH**

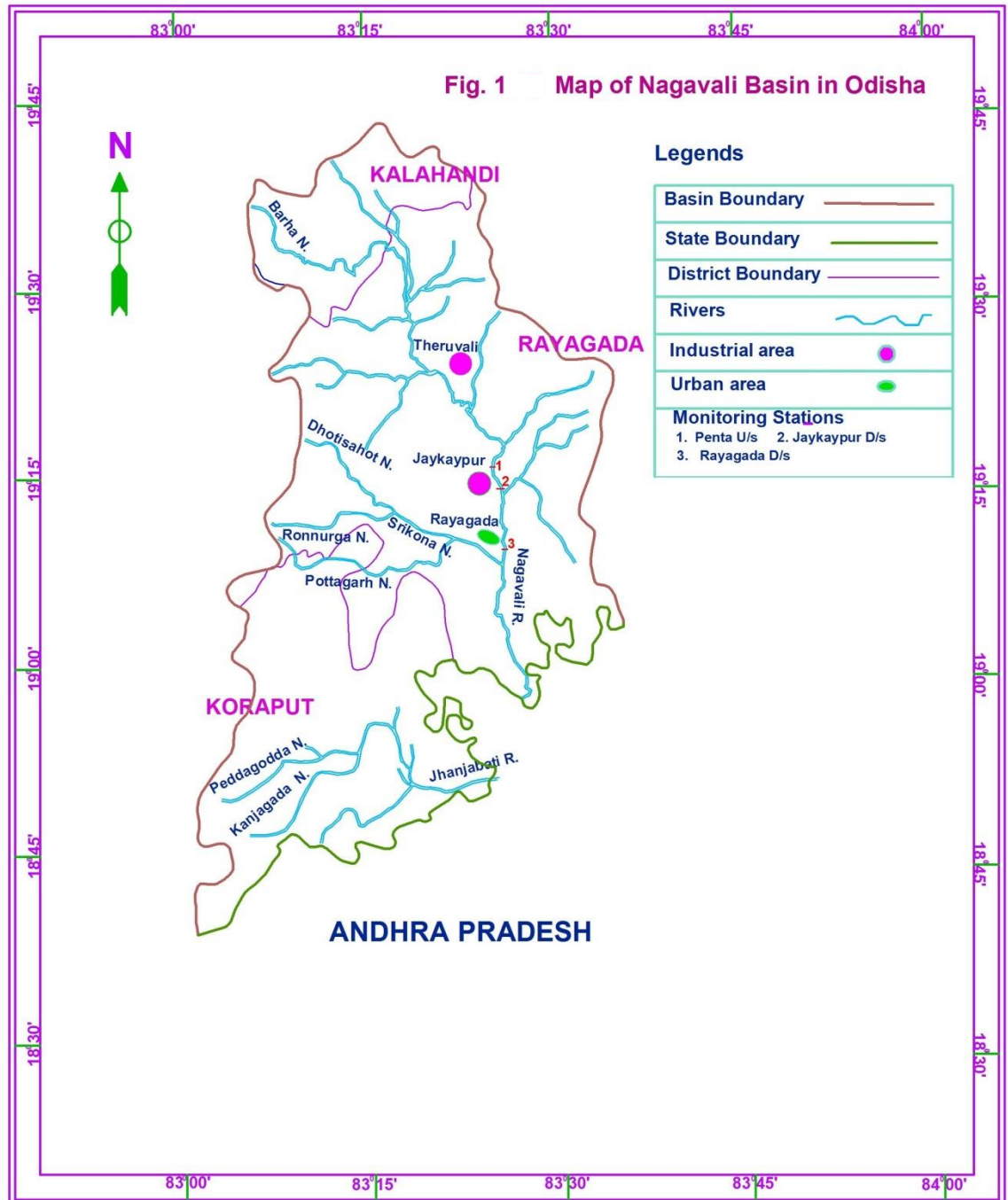
1.0 Background

Water quality assessment of river Nagavali has been carried out by the State Pollution Control Board, Odisha under the project “National Water Quality Monitoring Programme” on regular basis at three locations, such as Penta (Jaykaypur upstream), Devodola (Jaykaypur Downstream) and Pratappur (Rayagada Downstream). The maximum Biochemical Oxygen Demand(BOD) range in this stretch of Nagavali river during 2017 was observed to be in the range 3.1-3.9 mg/l. BOD has exceeded the tolerance limit of 3.0 mg/l at Jaykaypur Downstream twice during the total period of observation and therefore has been identified as polluted river stretch by the Central Pollution Control Board (CPCB). The polluted river stretches are categorized under five different priorities based on the BOD values as per Central Pollution Control Board (CPCB) classification. Monitoring locations with BOD concentration exceeding 30 mg/l has been categorized as Priority-I. Monitoring locations with BOD concentrations in the range 20-30 mg/l, 10-20 mg/l, 6-10 mg/l and 3-6 mg/l are categorized as Priority-II, Priority-III, Priority-IV and Priority-V respectively. Based on this classification, Nagavali river stretch along Jaykaypur to Rayagada has been categorized under Priority-V.

2.0 Water quality of Nagavali River

Nagavali river originates from the Bijipur hills of the Eastern Ghat near village Lakhabahal in Kalahandi district of Odisha. It is an interstate river with a total length of 217 km flowing through Odisha and Andhra Pradesh. It covers 125 km stretch in Odisha state and has a basin area of 48.8% of total basin area. From its origin to its exit from Odisha at Karada village of Rayagada, it flows mostly through very scarcely populated areas with almost no industrial and mining activities. There is only one major town, Rayagada, one large pulp and paper mill (M/s J.K. paper Mills Limited) at Jaykaypur and one ferro alloy plant (IMFA) at Theruvaliare in the Odisha portion of Nagavali river basin.

Water quality of the river Nagavali is monitored at three locations- Penta U/s, Jaykaypur D/s and Rayagada D/s. Water quality monitoring stations are shown in Fig.1.



Monthwise water quality data of river Nagavali with respect to Biochemical Oxygen Demand (BOD) during the year 2017 is given in Table-1. The data shows that BOD has exceeded the tolerance limit of 3.0 mg/l only twice at Jaykaypur downstream during period of monitoring.

Table-1 Monthwsie BOD (mg/l) in Nagavali river during 2017

Month	BOD, mg/l		
	PentaU/s	Jaykaypur D/s at Devodola	Rayagada D/s at Pratappur
January	0.3	3.5	0.5
February	1.9	2.6	1.1
March	0.2	1.7	0.8
April	1.2	3.4	0.7
May	0.8	1.5	0.8
June	1.5	1.8	1.6
July	1.0	1.6	2.6
August	0.5	0.5	0.6
September	0.7	1.3	1.8
October	1.0	2.1	1.6
November	0.6	1.2	1.6
December	0.3	2.5	2.4
Minimum BOD, mg/l	0.2	0.5	0.5
Maximum BOD, mg/l	1.9	3.5	2.6

3.0 Sources of Pollution

Deterioration of water quality in the Nagavali river along the stretch Jaykaypur to Rayagada may be attributed to the insignificant flow during lean period and riparian activities.

M/s J.K. Paper Mill, the large pulp and paper mill, established on the Nagavali river catchment area has set up an effluent treatment plant to treat the wastewater to achieve the stringent stipulated limit prior to discharge into Nagavali river. Further, the industry has also set

up a 2 MLD capacity sewage treatment plant to treat the domestic wastewater of its industrial township prior to discharge to Nagavali river.

However, during non-monsoon period, due to non-availability of dilution in the river, marginal water quality deterioration has been observed.

4.0 Action plan for restoration of Water quality of Nagavali River along Jaykaypur to Rayagada stretch

Hon'ble National Green Tribunal (NGT) Principal Bench have mentioned the suggestions of the CPCB in Para 42 in the order of the Case No. 673/2018 for implementation of following a two-fold concept for restoration of polluted river stretches.

1stconcept : To target enhancement of river flow through interventions on the water sheds/ catchment areas for conservation and recharge of rainwater for subsequent release during lean flow period in year. This concept will work on dilutions of pollutants in the rivers and streams to reduce concentration to meet the desired level of water quality.

2ndconcept : Regulation and enforcement of standards in conjunction with the available flow in rivers/ streams and allocation of discharges with stipulated norms.

Since the BOD deviations are observed to be marginal as well as frequency of deviation is few, the water quality of the river can be improved by enhancement of river flow through interventions of the river catchment area for conservation and recharge of rainwater for subsequent release during lean flow period in the year.

