GOING AHEAD WITH IWRM
A
SPIRAL STUDY FOR BAITARANI BASIN.

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Presentation Basics.

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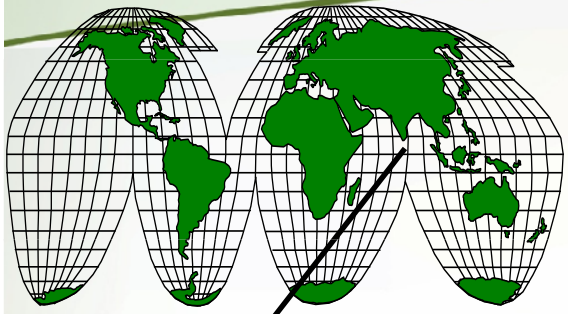
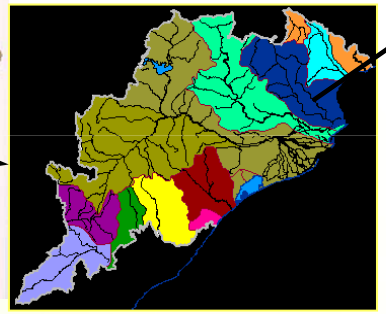
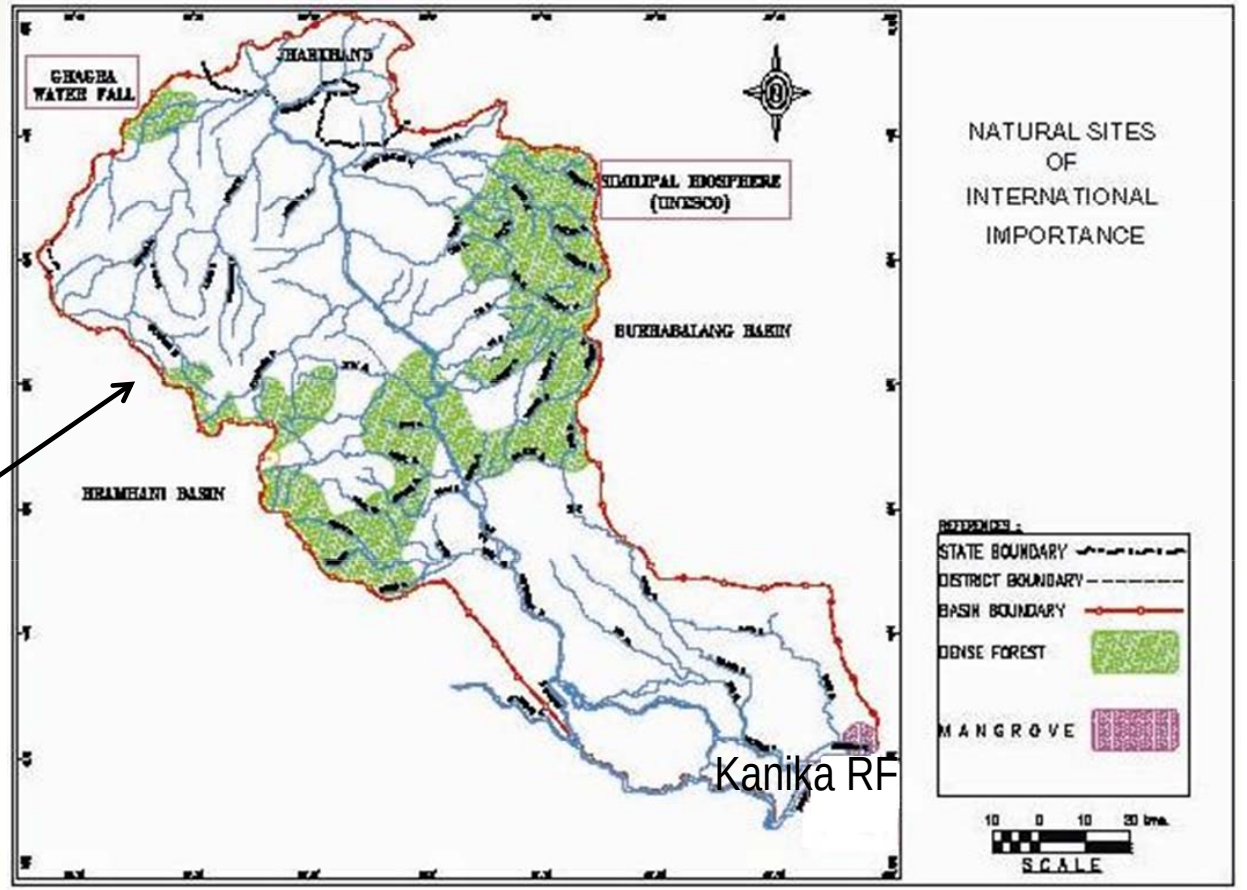
1. Basin Profile
2. Basin issues
3. Possible solutions
4. IWRM Spiral
5. Conclusion

BASIN PROFILE

Basin Location.







Salient Features.

Baitarani Basin

Catchment Area (Total): 14,218 Sqkm

Orissa:13482, Jharkhand:736

Districtwise Area:

Balasore:42, Bhadrak:2198

Jajpur:1006, Kendrapada:274, Angul:31

Keonjhar:6824,

Mayurbhanj:2926,Sundergarh:181

Major Tributaries (Odisha):

Deo, Kanjhari, Kusei, Salandi

Population (2001): 38,29,931

Density:269 / Sqkm

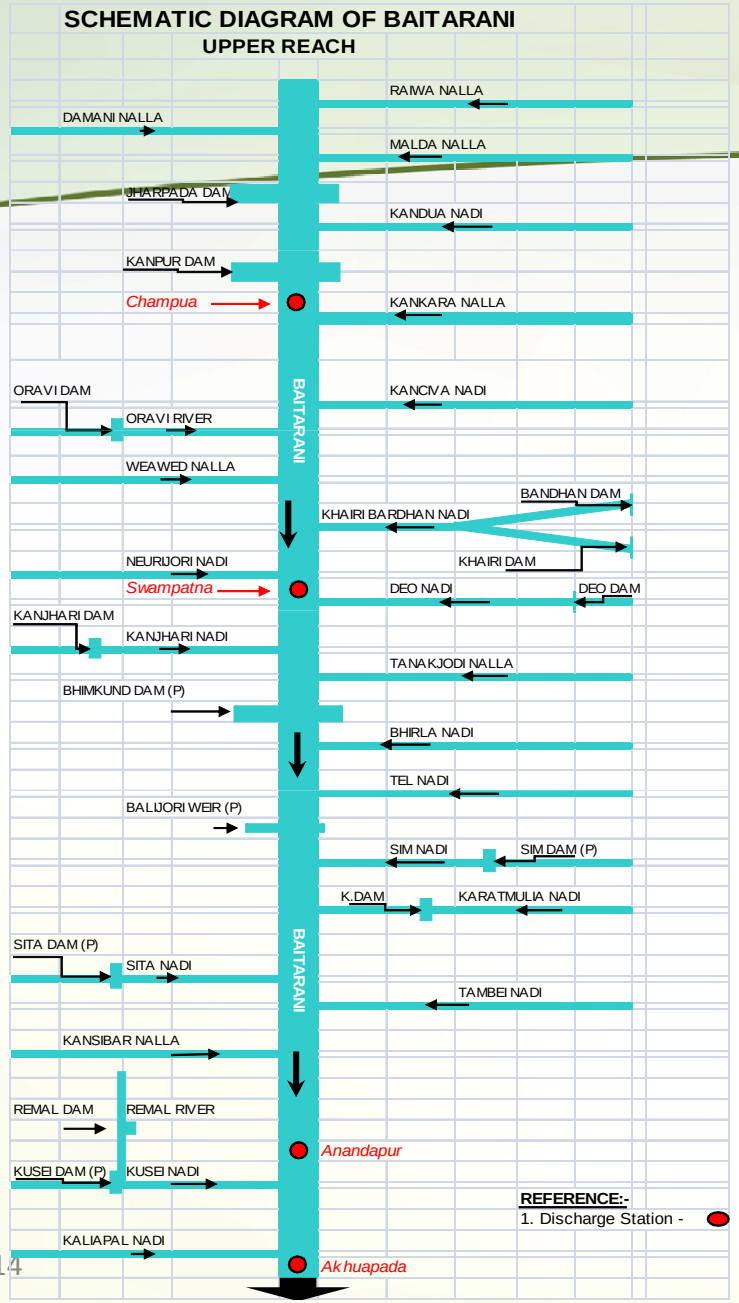
Annual Rainfall:

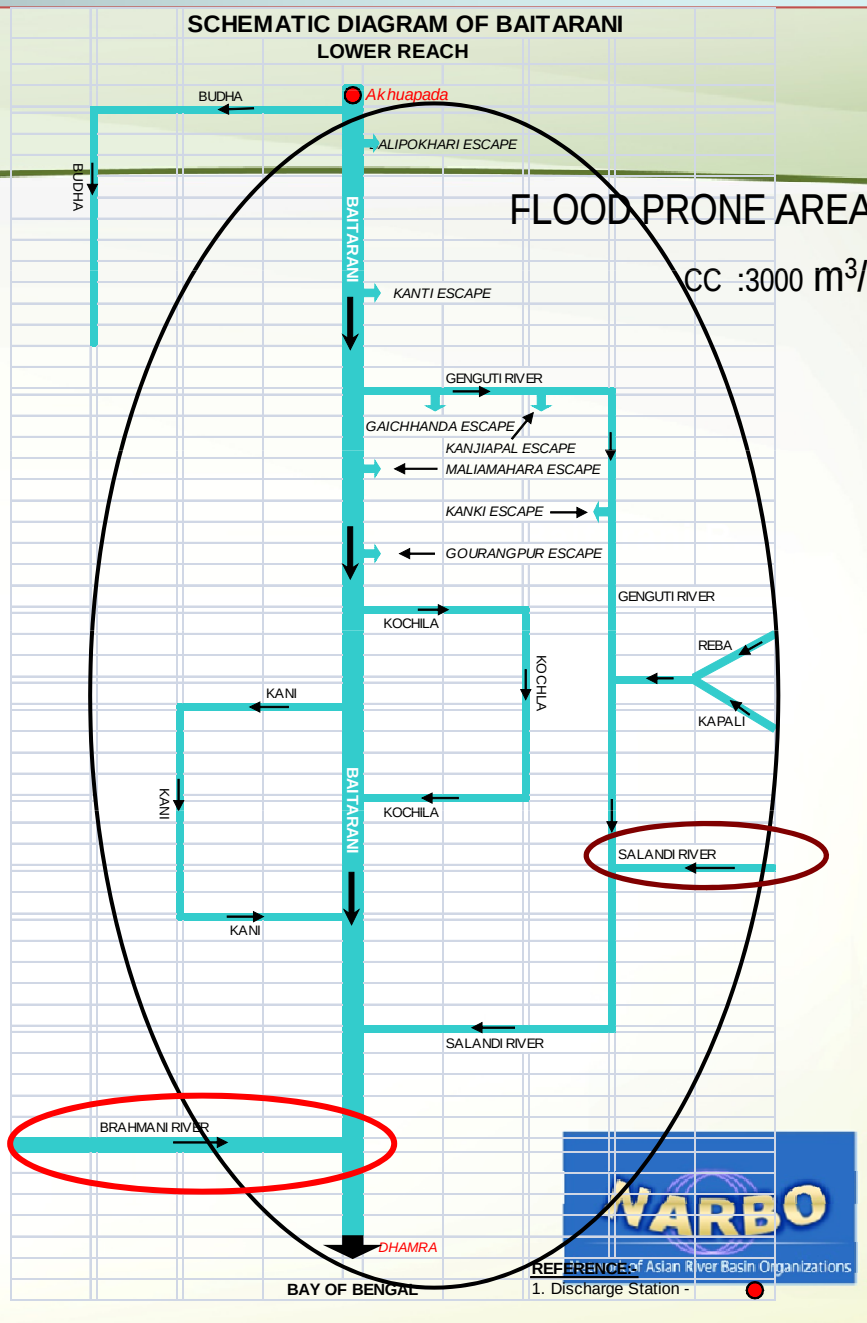
Max:3094 mm, Min:642 mm

Population(2051):100,63,272

Dep. Flow : 5434 MCum

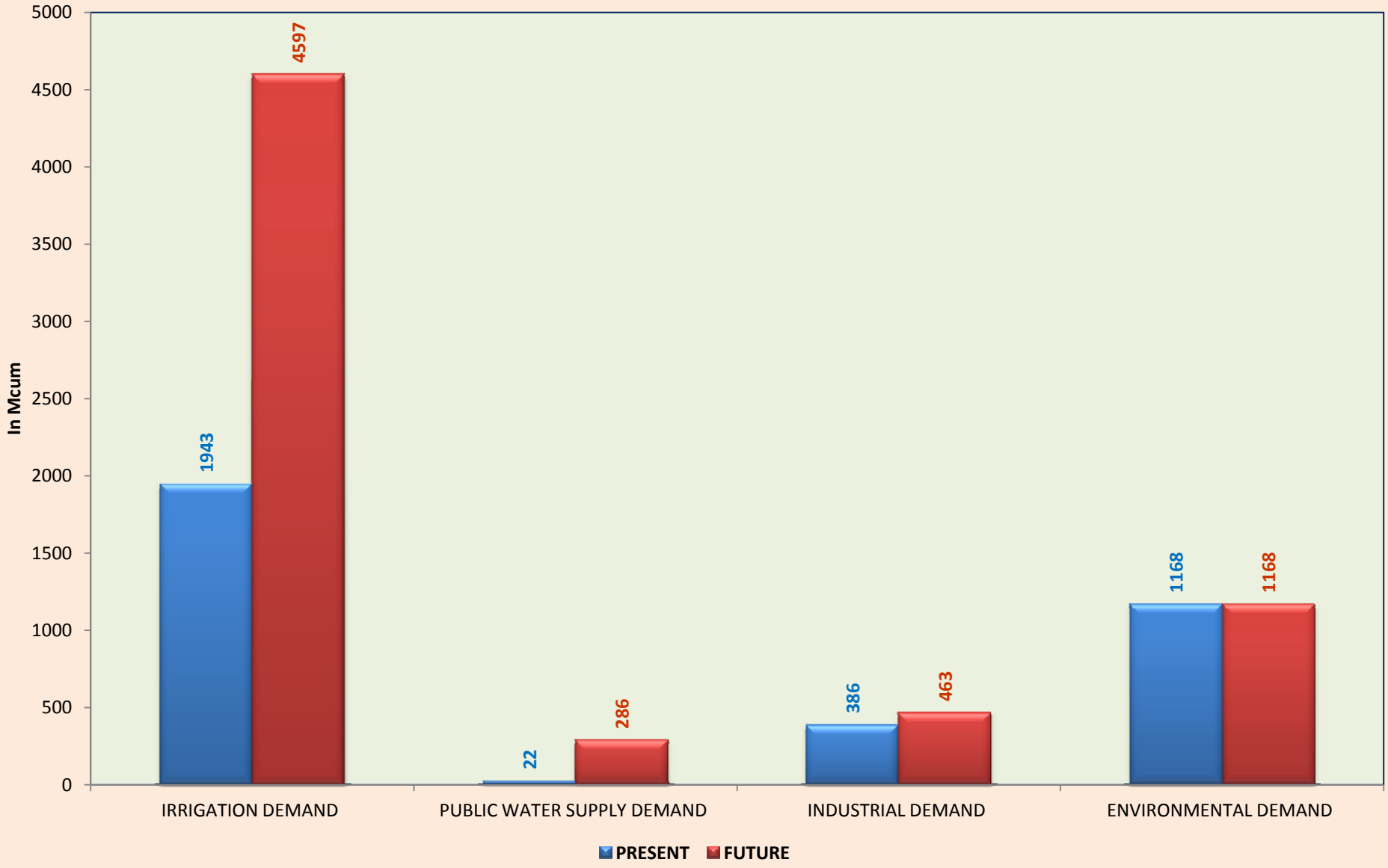
Salient Features.



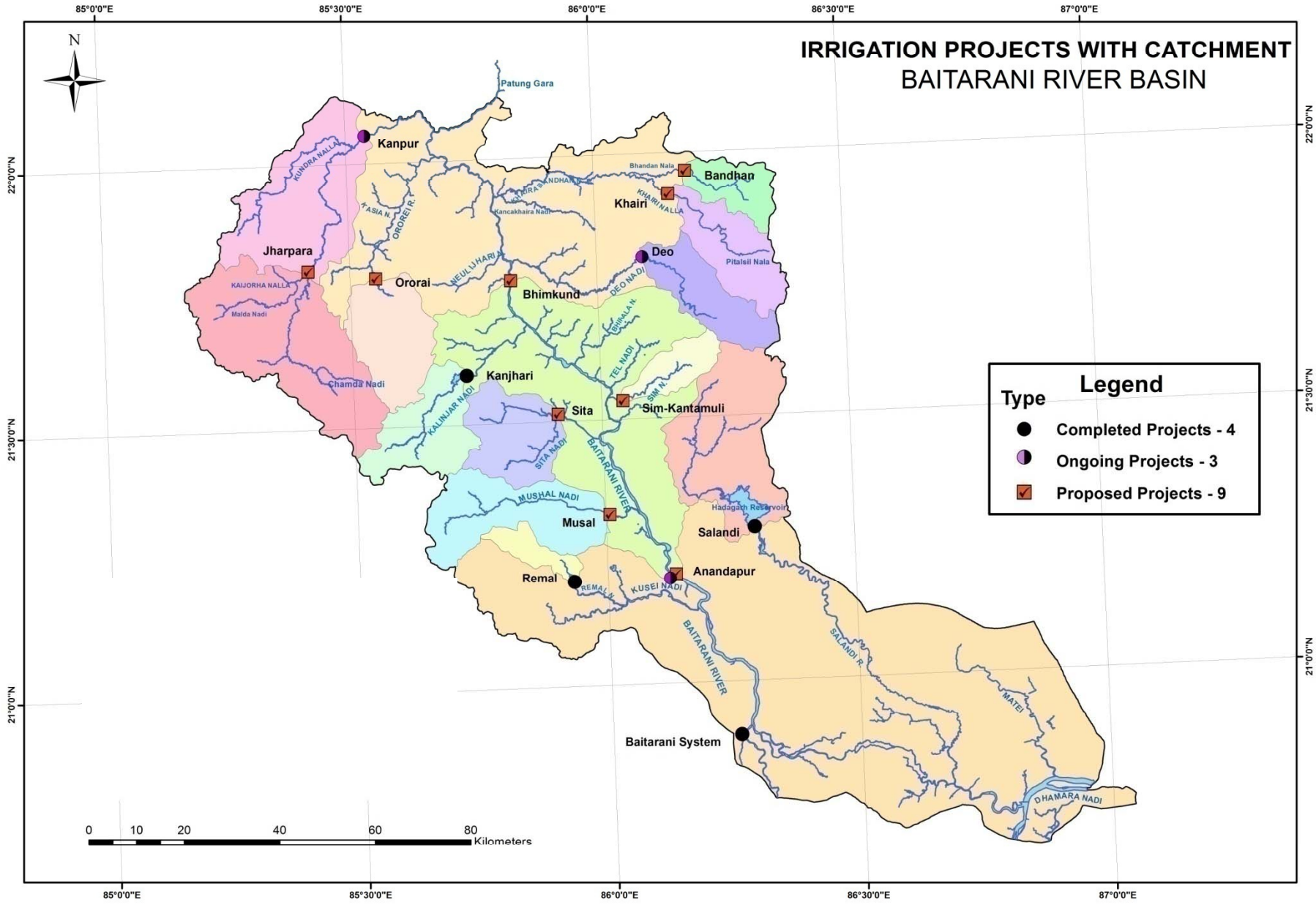


Salient Features.

BAITARANI BASIN DEMAND (PRESENT vs FUTURE)



Salient Features.



Irrigation Projects.

Existing Irrigation Projects

	C.A in Km^2	C.C.A in Ha
Salandi	**674.00**	**85894**
Kanjhari	**360.00**	**9800**
Remala	**100.00**	**3900**
Akhuapada	**1430.00**	**32700**

Ongoing Irrigation Projects

	C.A in Km^2	C.C.A in Ha
Kanupur	1525	29578
Deo	292	9900
Anandpur Barrage		60000

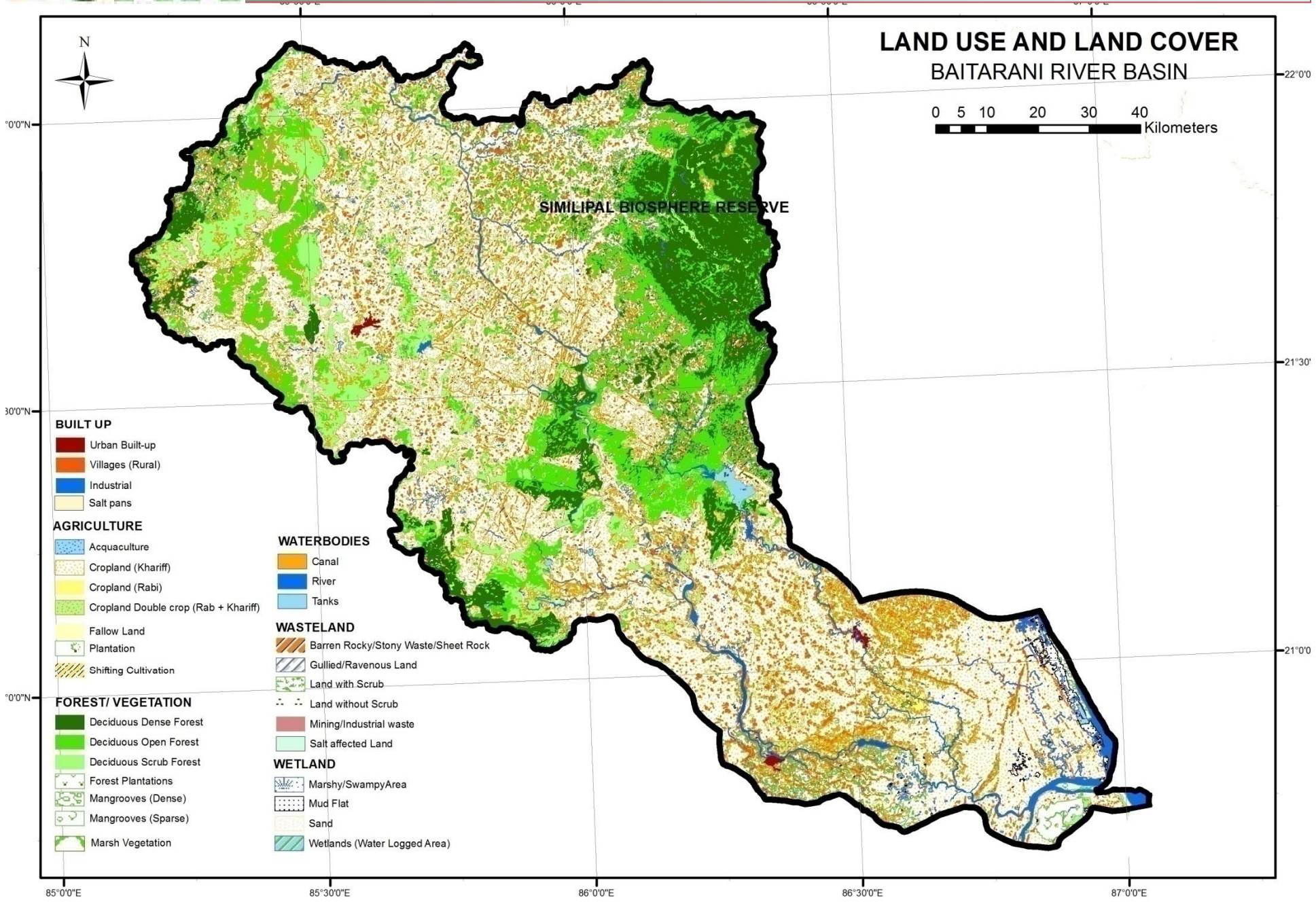
Irrigation & Hydel Projects.

Proposed Future Project.

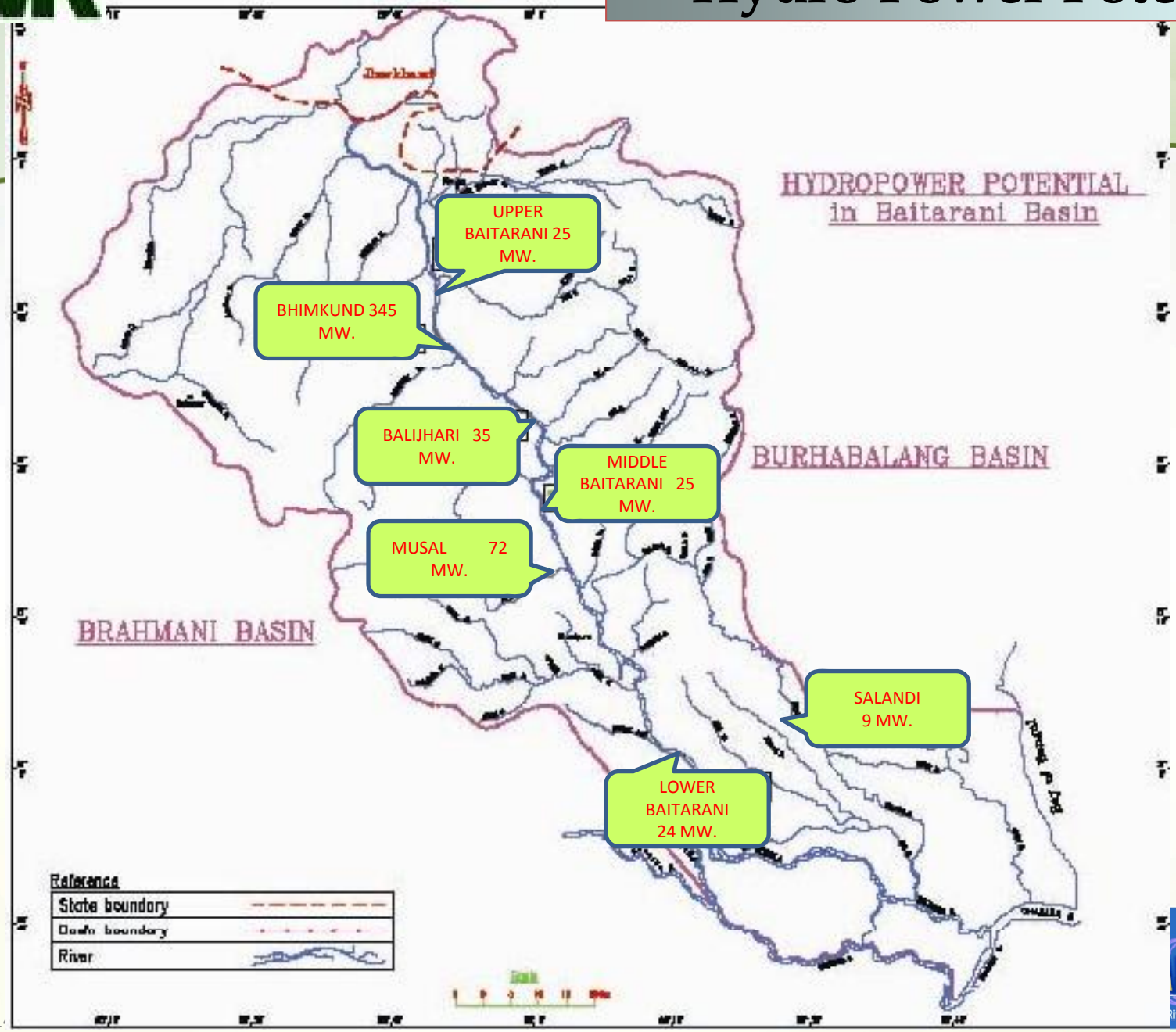
Sl.	Name of the Projects	C.A in Km^2	C.C.A in Ha.	Power Installed Capacity in MW
1.	Bhimkund Integrated (Rajnagar) (H)		60000	P
a.	*Balijori weir*		Stabilization (60,000)	P
b.	*Baigundi (H)*			160
2.	Khairi & Bandhan	588	7000	
3.	Musal (H)	370	9000	P
4.	Ororai	383	10000	

H-Hydro Electric, P-Proposed

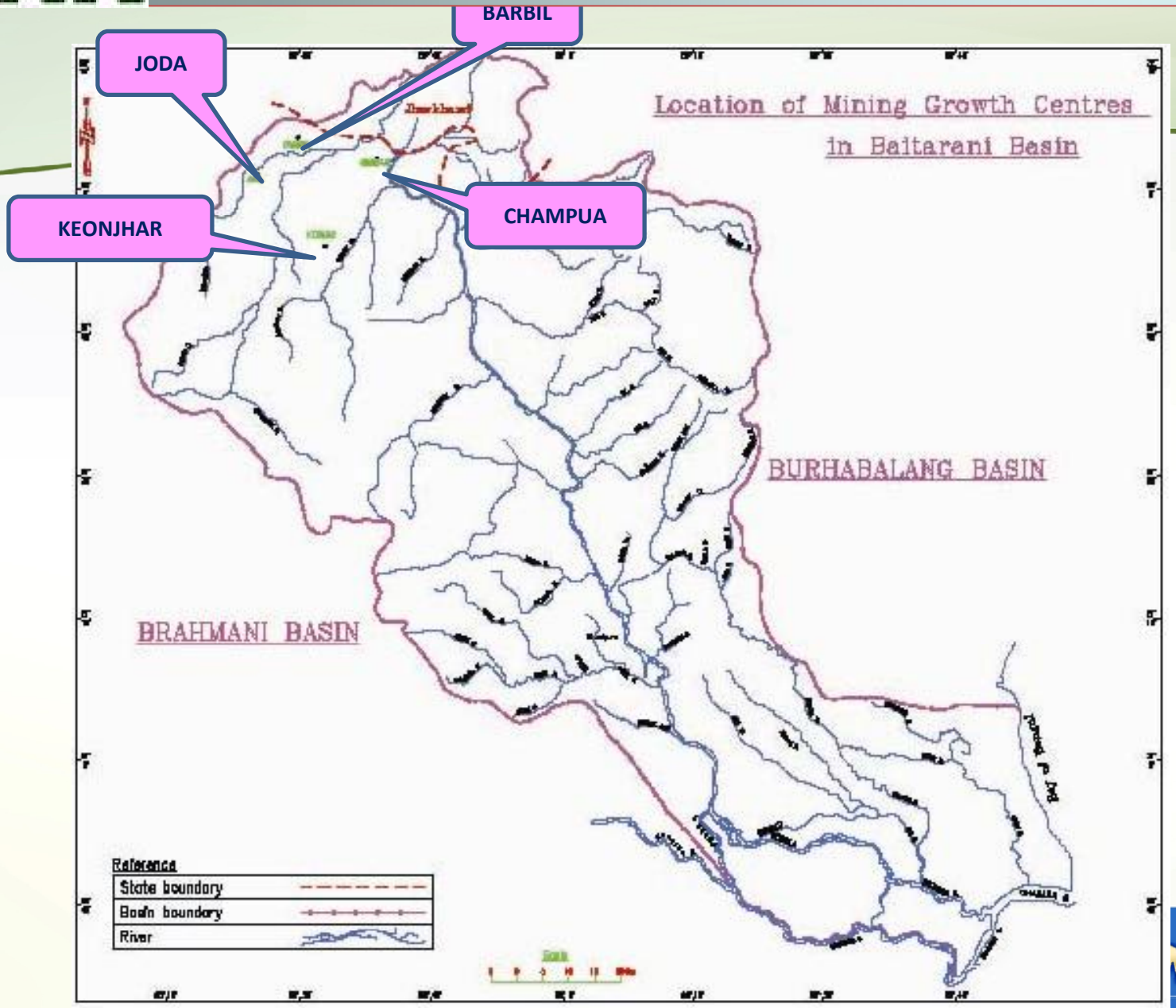
Salient Features.



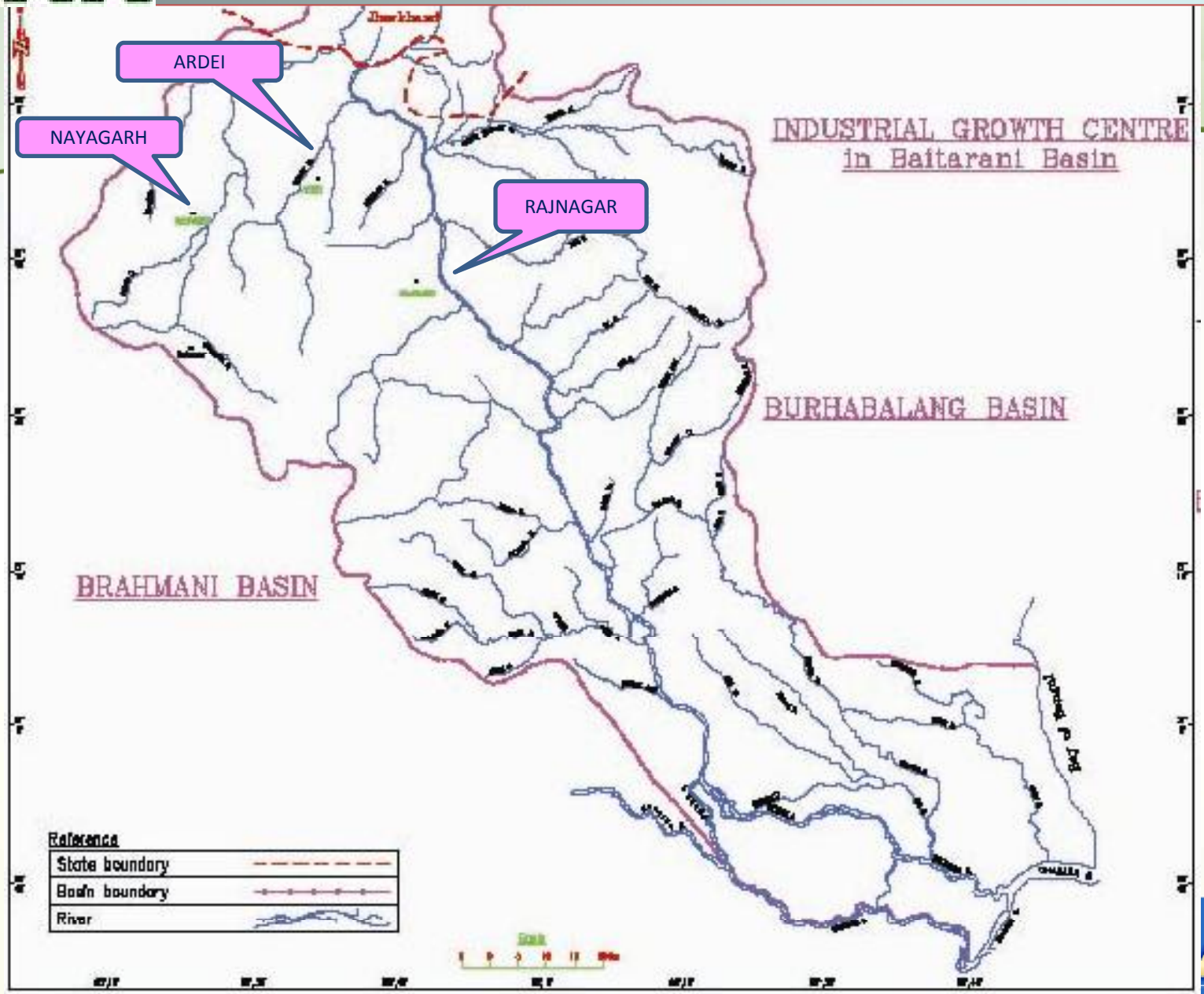
Hydro Power Potential.



Mining Sites.



Industry.



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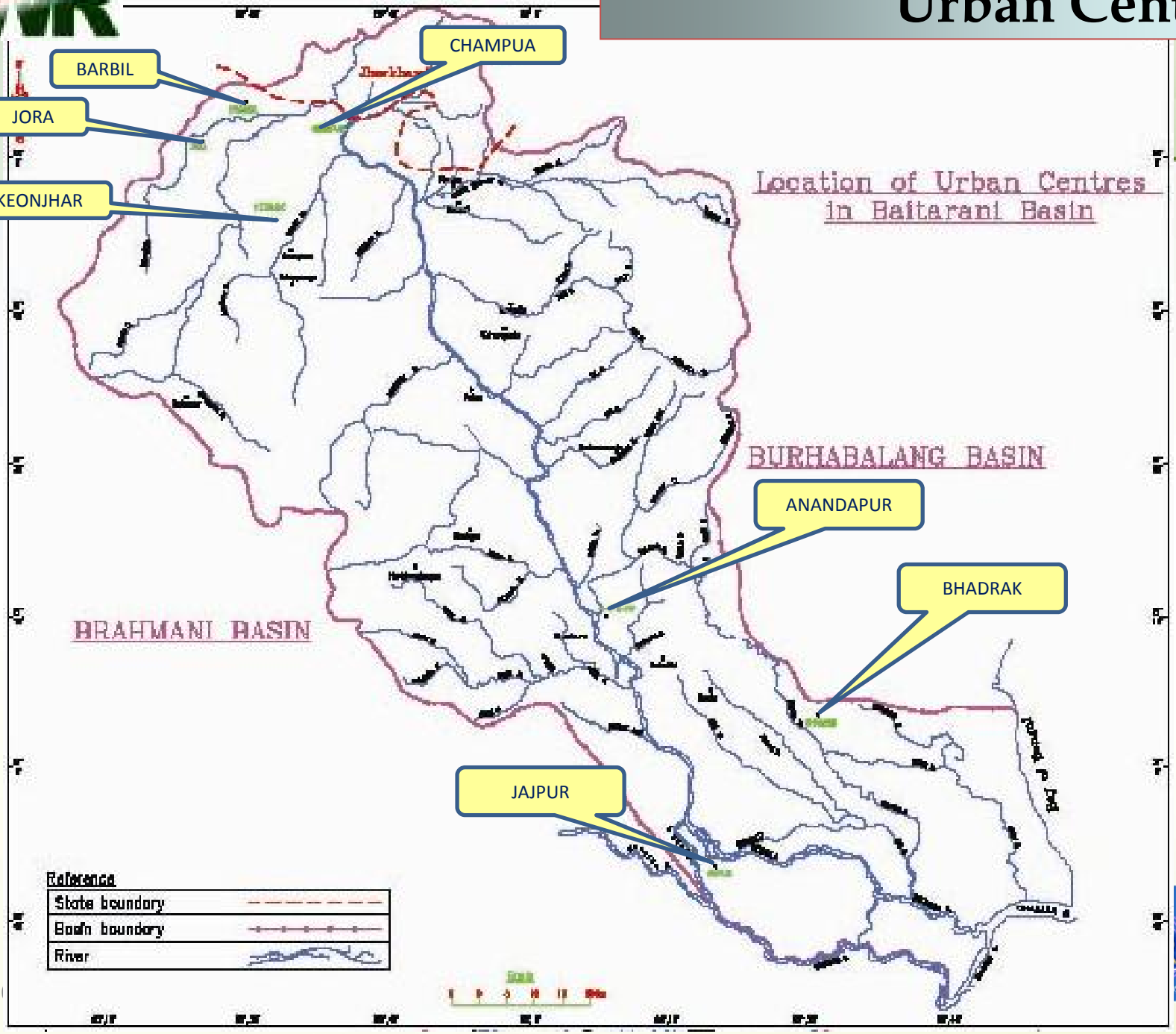
Urban Centers.



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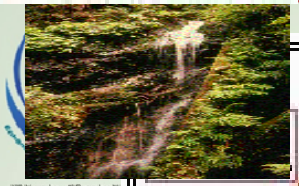

Ghagara Waterfall

CURRENT ISSUES.

Current Issues.

- Increasing demand of water for agriculture and industry
- Inadequate storage-only few reservoirs in the basin
- Water quality deterioration due to the untreated discharges from industries , mines and urban areas
- Increasing flood due to the changing rainfall behaviors and low carrying capacity of rivers
- Saline intrusion in the coastal region of the river basin
- Protection of Bhitarakanika Eco system-a Ramsar site and Similipal Bio reserve
- Hydropower potential not utilized
- Drainage congestion and water logging in coastal area
- Soil erosion in upstream region

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FUTURE PERSPECTIVE.

Future Perspective.

- Framing and implementing Water Frame Work Law.
- Strengthening River Basin Organization.
- Training and capacity building of farmers, Water user Associations
- Awareness generation among different stakeholders.
- Creation of new Reservoirs with space for flood moderation with proper EIA study.
- Quantify Environmental Flow and assure in different stretches of the river.
- Maintain desired water quality in the river by continuous monitoring and enforcing law against polluters.

Future Perspective.

- Explore and put up hydropower facilities to its potential
- Policy level intervention for effective implementation of IWRM in Baitarani Basin

BAITARANI

RIVER BASIN ORGANISATION.

River Basin Organisation

It is a 2 tier arrangement consisting of a Board & a Council

The Board

- A *professional body* of experts in water related activities .
- The board to look after plan development of water resources of the basin.

The Council

- A body of *stake holders* in the water resources sector in the basin.
- The council to deliberate on action plans & projects put up by the board and accord necessary approval.
- The council may also require the board to study different aspects and problems relating to the basin and come up with a solution.

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River Basin Organisation

- The Council comprises
  - Maxm 25 stakeholders from the basin area
  - Chairman – Minister/Minister of State, Water Resources
  - Members
    - MP, MLA, Chairperson of Zilla Parishad of the basin area
    - RDC, Dist. Collector
    - 2 NGOs nominated by DoWR
    - 4 Presidents of Apex Societies/Distributary Committes formed under Pani Panchayat Act (*for 2 yrs in rotation*)
    - 2 nominated representatives from Industries Deptt.
  - Special invitees – District level officers of the Line Department
  - Member Secy. – Chief Engineer & Basin Manager of the basin

River Basin Organisation

- The Board comprises of
  - Chairman – Principal Secretary, Water Resources
  - Members (in the rank of SE/DD) from each of the following orgns. working in the basin
    - Public Health/RWSS
    - Minor Irrigation/GWSI/Lift Irrigation/Hydrology
    - Agriculture/Water Shed Mission
    - Odisha State Pollution Control Board
    - Industries
    - Fisheries
    - Energy
  - Member Secy. – Chief Engineer & Basin Manager of the basin

River Basin Organisation

- The Member Secy. has a RBO Cell to provide technical and other inputs to the board to discharge its functions & powers and to ensure implementation of decision taken.

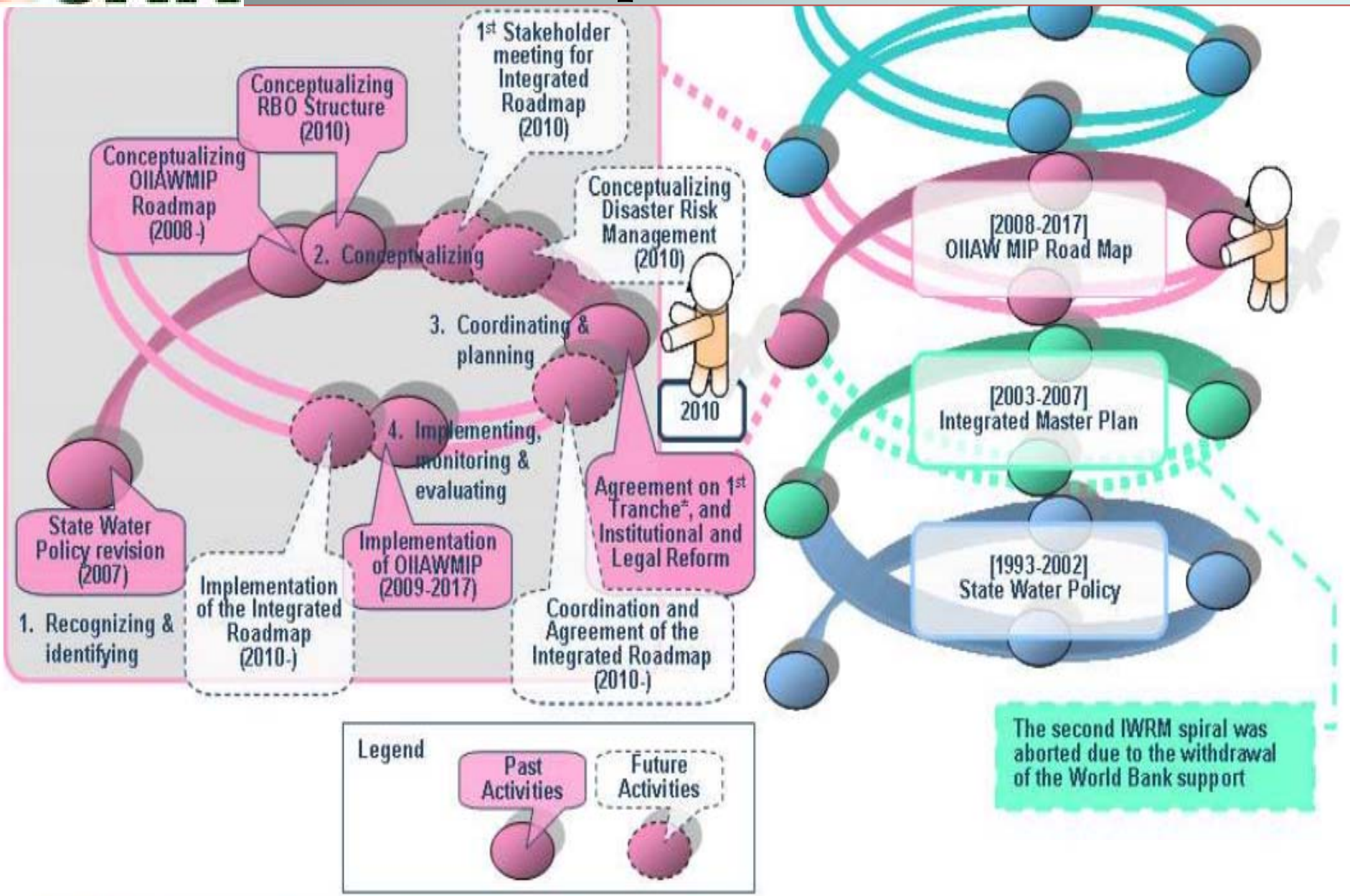
- The RBO Cell functions in the Office of the CE&BM of the basin with following staff pattern.
  - Executive Engineer – 1no
  - Asst. Engineer – 2nos
  - Junior Engineer – 1no
  - Steno-cum-Jr. Clerk – 1no
  - Peon-2nos

IWRM SPIRAL.

"FIRST STEPS" TOWARDS IWRM IN ORISSA: THE STATE WATER POLICY 2007

- Hydrological unit (River Basin) as unit for development and management
- Priorities for allocation
    1. Drinking and domestic use
    2. Ecology
    3. Irrigation, agriculture, fisheries
    4. Hydropower
    5. Industries
    6. Navigation and other uses
- RBOs with stakeholder participation
- Macro-level multi-sectoral river basin plans
- Beneficiaries covering O&M costs, and some capital costs
- Respecting traditions, tribal ethos etc.
- State exploring possibility of regulatory authority

IWRM Spiral for the state of ODISHA.



* The 1st Tranche Irrigation Infrastructure Investment Program

IWRM Spiral Baitarani Basin.

Year	Issues/Actions
1950	Flooding of deltaic area each year,Food crisis due to absence of irrigation. Construction of Salandi dam & Akhuapada barrage was planned.
1960	Construction of Salandi dam & Akhuapada barrage was started.
1969	Akhuapada barrage and canals completed. Irrigated 32700 Ha
1976	Salandi dam and canals completed, Irrigation to 85894 ha and flood control of 6000 km^2
1977	Planned to construct Kanjhari and Remala Medium Irrigation projects
1979	Construction of Remala dam and canal system started
1980	Construction of Kanjhari dam and canal system started
1984	Remala dam project completed and 3900 ha irrigated

IWRM Spiral Baitarani Basin.

Year	Issues/Actions
1989	Kanjhari dam project completed and irrigated 9800 ha
1990-2008	Minor irrigation and watershed projects were completed irrigating 10000 ha
2004	Third spiral study completed.
2009	Construction of Deo Irrigation project started to irrigate 9900 ha
2010	Baitarani RBO notified
2011	Construction of Kanupur irrigation project started to irrigate 29578 ha & construction of Anandapur barrage started to irrigate 60000 ha.

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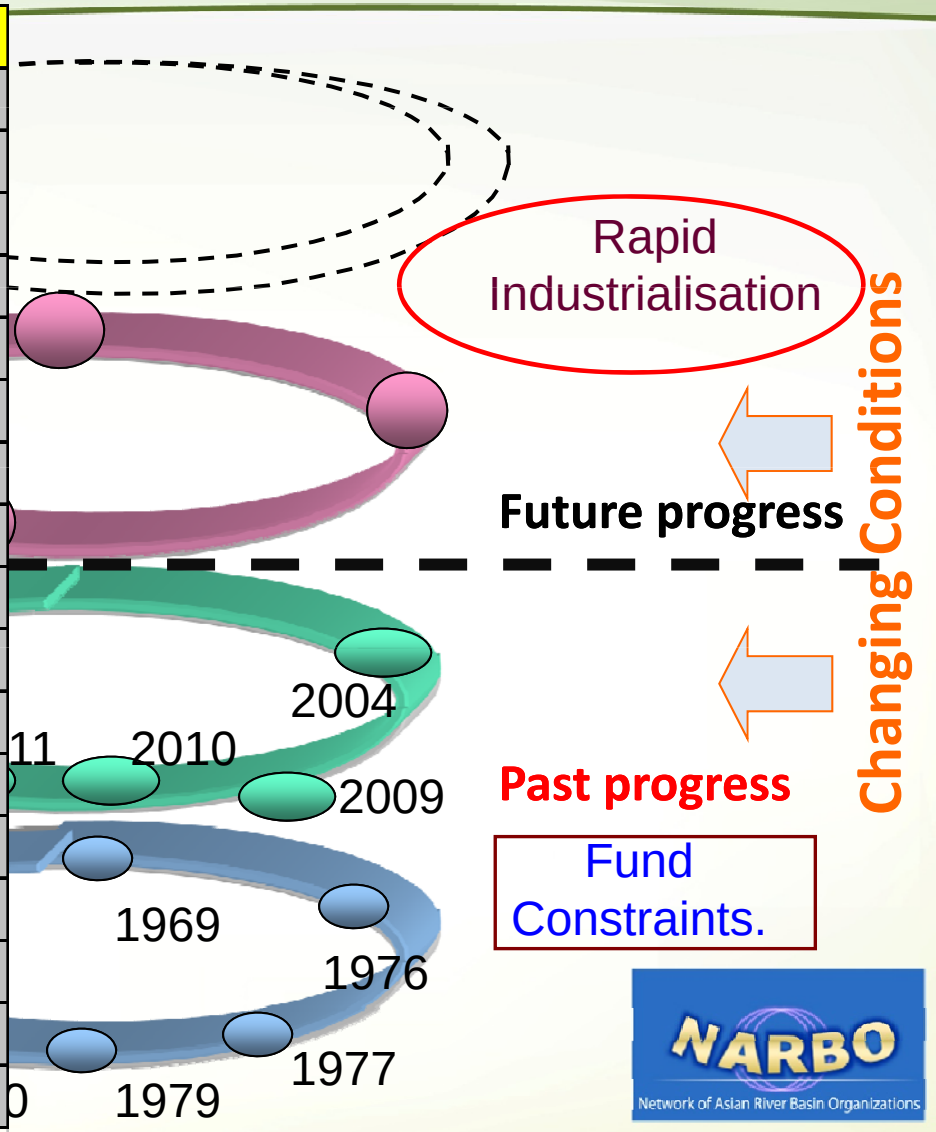
IWRM Spiral for the Baitarani Basin.

Year	Progress
1950	High flood and Food Crisis
1951	Planning of Salandi and Akhuapada Projects
1960	Construction of Salandi Dam and Akhuapada barrage started
1969	Akhuapada barrage canal completed
1976	Salandi Dam and Canal Completed
1977	Kanjhari and Remal Project planned
1979	Construction Remal Irrg. Proj started
1980	Construction of Kanjhari Dam started
1984	Remal Dam completed
1989	Kanjhari Dam completed
1990	MI and Watershed Projects started
2004	3rd Spiral study completed
2009	Construction of Deo Proj. started
2010	Baitarani RBO notified
2011	Construction of Kanupur and Anandapur Proj. started
2013	4th Spiral study started
2014-17	Further Conceptualisation

Note : Some date specific data assumed



KEY for SUCCESS.

Key for Success.

- Effective Water User's Association (Panipanchyats).
- Willingness of Govt. for investment in infrastructures.
- Emphasis on Ecological flows.
- Co-ordination among line departments.

27th November – 4th December 2013 Sri Lanka

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Enhanced Water Security Through IWRM
Mahaweli Experience
27th November – 4th December 2013 Sri Lanka

CONCLUSION.

Conclusion

- To get the IWRM benefit the RBO will be made effective.
- Future projects will be taken up resolving the R & R issues.
- The 4th spiral study has been taken up to resolve the conflicting demands and implementation huddles.

THANK YOU

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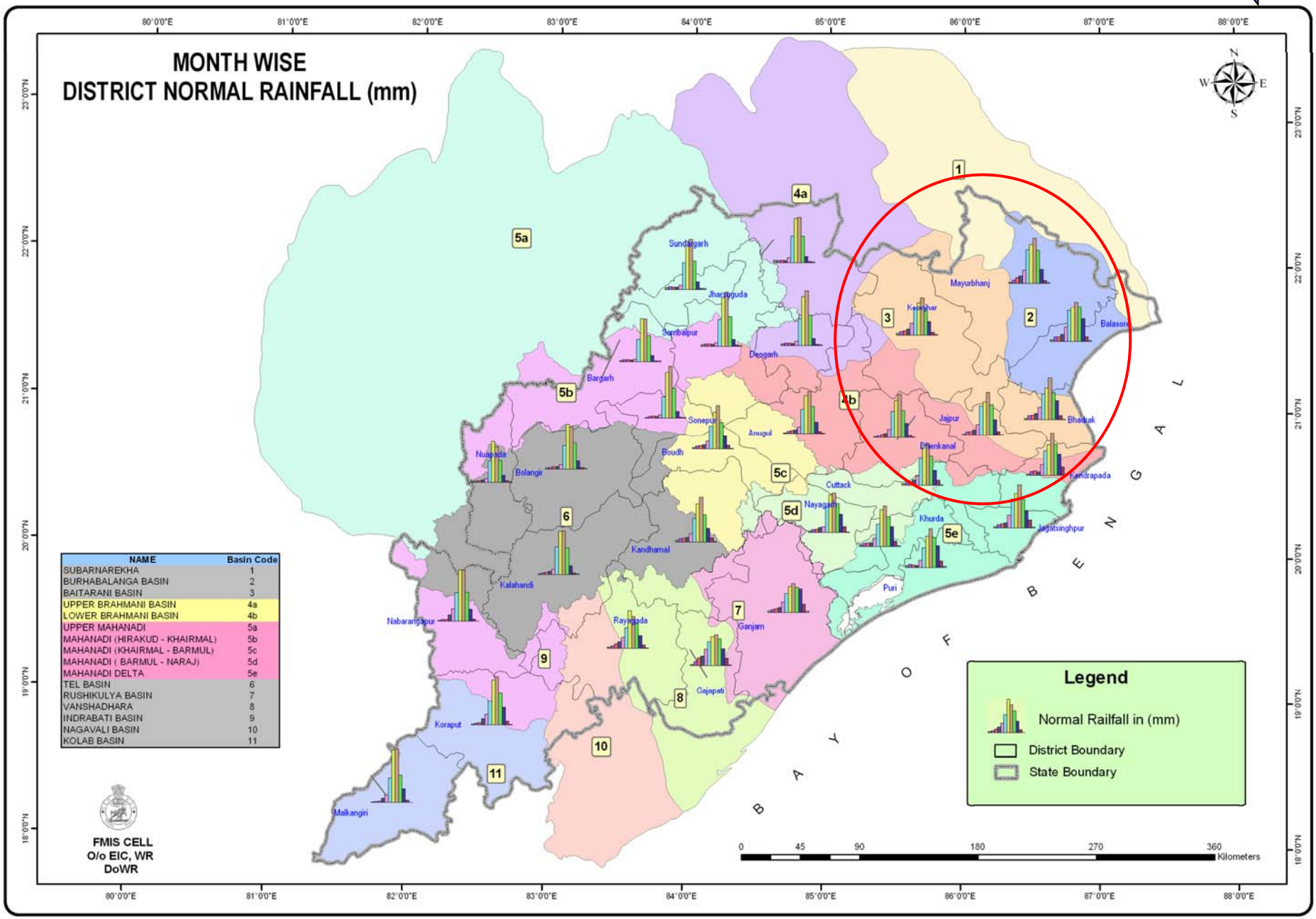
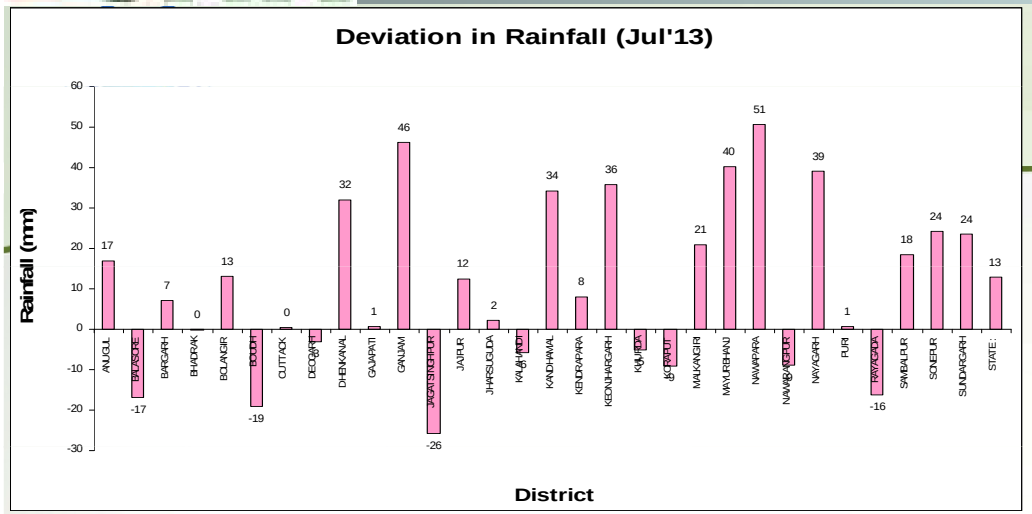
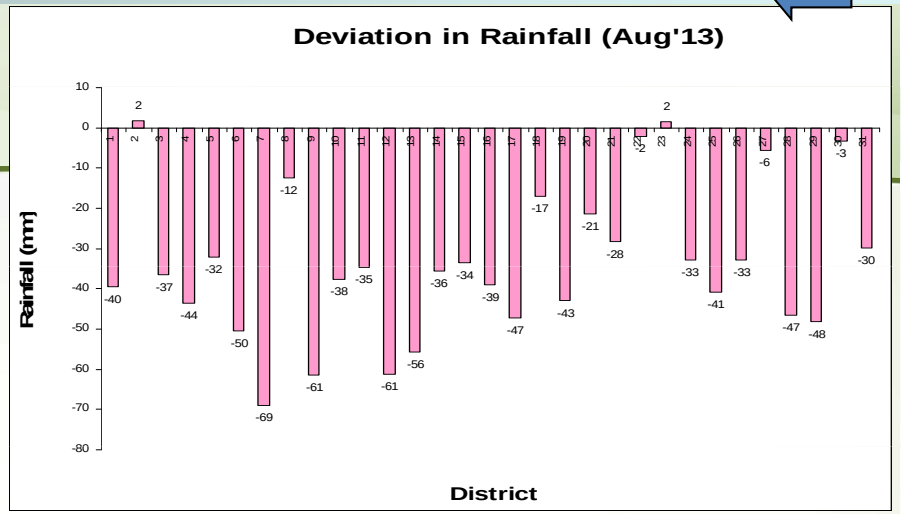
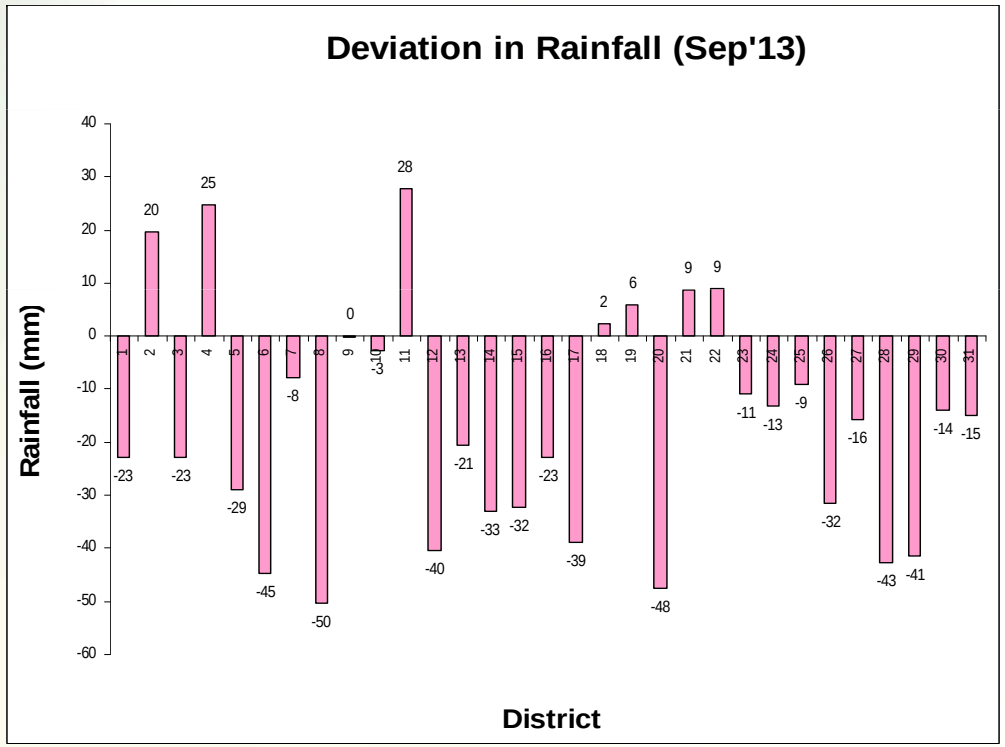
NORMAL RAINFALL OF THE STATE.

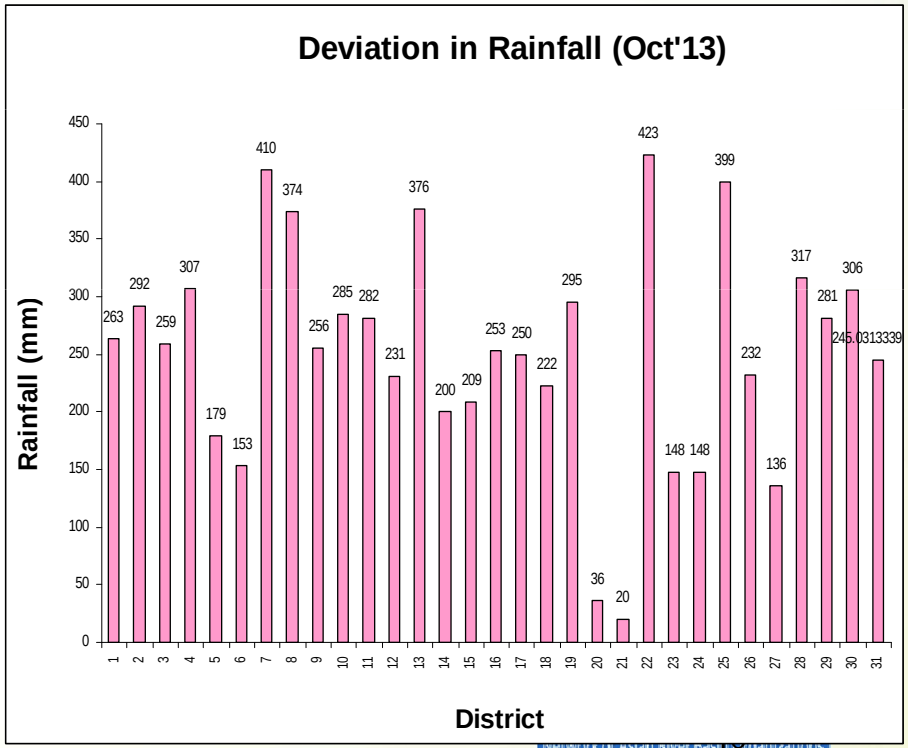


RAINFALL IN ODISHA '2013).









Data Source : IMD, Bhubaneswar.

NORMAL RAINFALL OF THE STATE.