

# Case Area from India

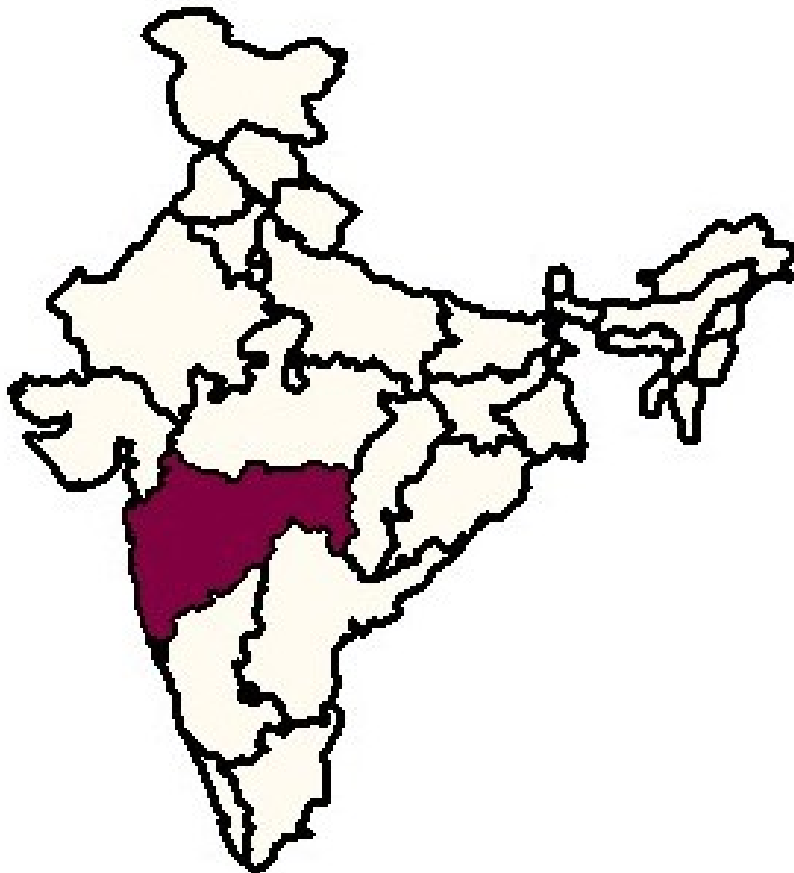
## Warna River Basin in the Western Ghats

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# Case area



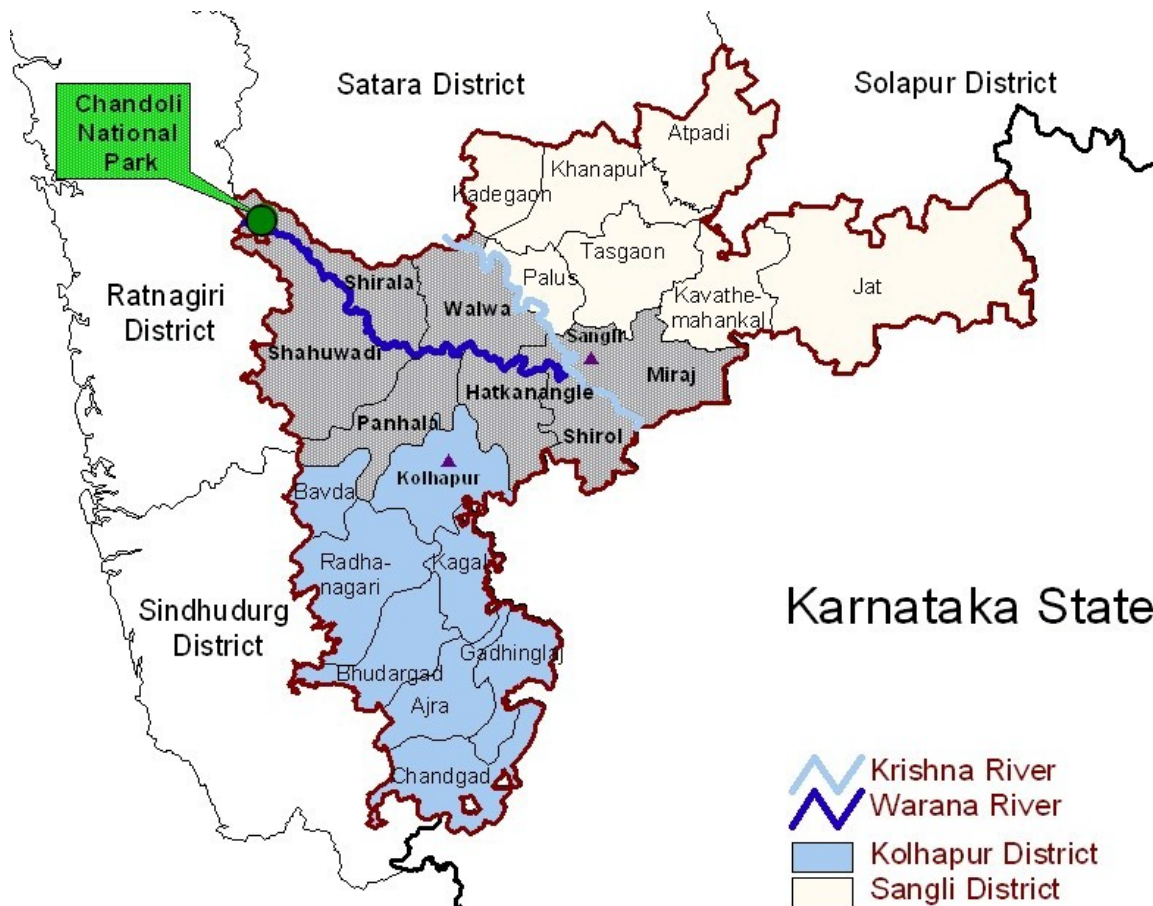
Case area: Warna river basin in the state of Maharashtra, India

# Case area

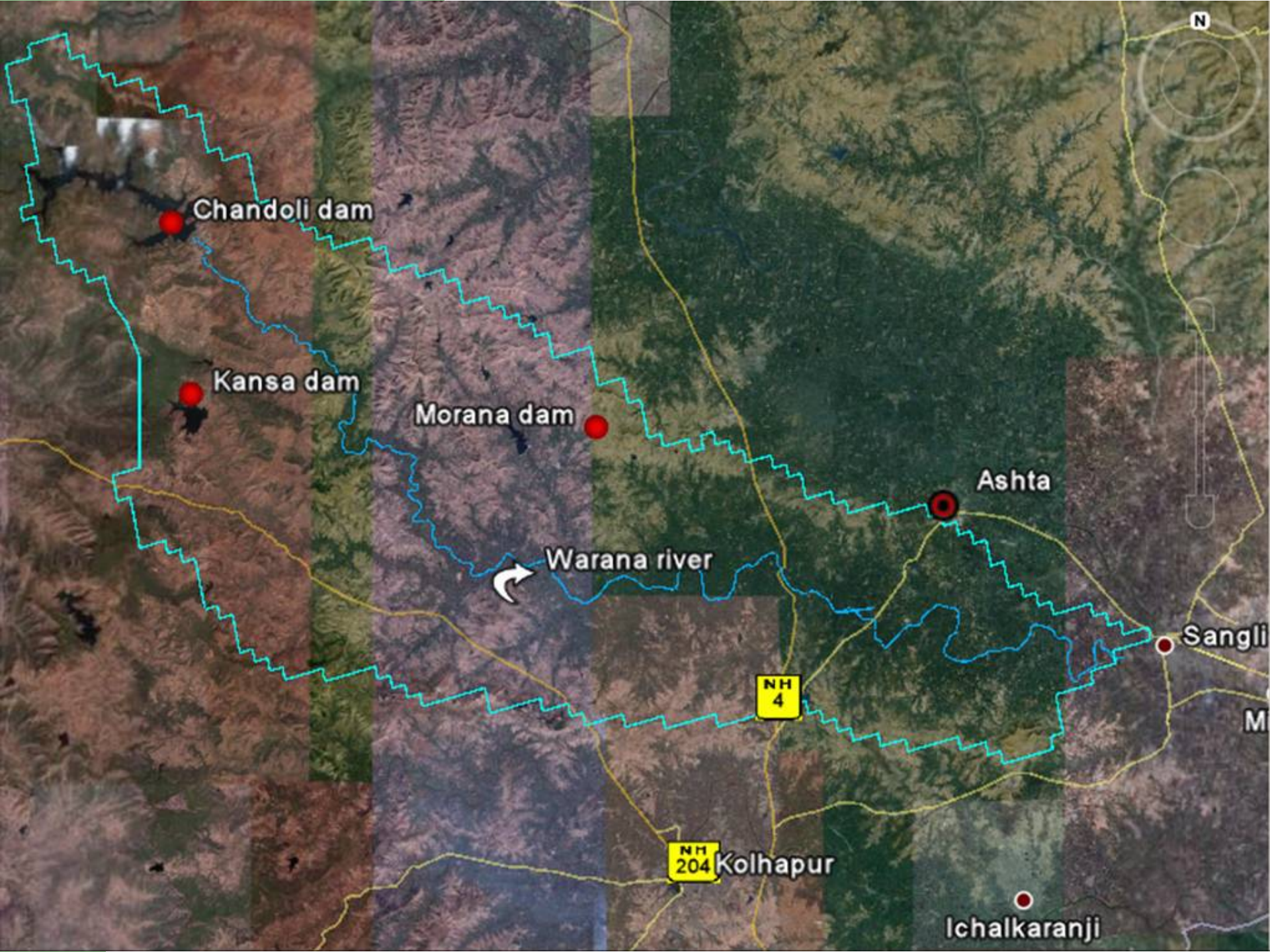


Sangli and  
Kolhapur  
districts in  
South  
Maharashtra  
that include  
the case  
area

# Case area



River warna  
and the  
Chandoli  
National  
Park



Chandoli dam

Kansa dam

Morana dam

Ashta

Warana river

Sangli

NH 4

NH 204 Kolhapur

Ichalkaranji

# Profile of the area

- Warna river is a tributary of the larger, interstate river, Krishna; water use in the basin is regulated by the interstate water tribunal award
- Total Area: about 1500 sq. km.
- Total Population: about 200,000
- Rainfall: more than 1500 mm/year; 85% of the rains in the months of June to September

# Profile of the area

- Per capita water availability: 3400 m<sup>3</sup>
- As per the interstate water tribunal's award, Maharashtra can use 960 Mm<sup>3</sup> of water from Warna sub-basin
- Warna (also called Chandoli) dam is the largest in the sub-basin
  - live storage of about 779 Mm<sup>3</sup>
  - irrigation potential: about 87,000 ha

- From the point of the interactions between biodiversity, livelihoods and vulnerability, the basin may be divided into two main regions:
  - The upper portion of the basin: the catchment area of the Warna dam which also includes the Chandoli Wildlife Sanctuary
  - The valley portion downstream of the Warna dam

# The upper portion of the basin

- People are mostly engaged in subsistence forms of agriculture (single and/or double cropping systems mainly dependent on the rainfall)
- Many of them also are dependent on the forest and forest resources for their livelihoods
- Triple displacement pressure on the people of this area
  - Warna dam and mining: serious implications for the lives and livelihoods of the people as well as health of the forest
  - Chandoli Wildlife Sanctuary and National Park: about 32 villages affected (total population of about 8,000)
  - Earthquake prone area: in 1993 there was series of earthquakes in this region; 20 villages fall in this earthquake prone region

# The valley portion of the basin

- This portion of the basin is known for its cooperative tradition
- About 65 cooperative lift irrigation schemes functioning
- Warnanagar Cooperative Sugar Factory - started way back in 1955
  - Today an agro-industrial complex has developed around this sugar factory and the complex includes 25 cooperative societies for the production of sugar and dairy products, poultry, and financial credit; around 70 villages spread over the area covered by this cooperative network
  - Warna Wired Village Project -- launched as a pilot project by the Information Technology Task Force of the Prime Minister's Office (India) in 1998
- An area of conflict over water

# Biodiversity and livelihood issues

- Dhangar (shepherd) community is the major forest dwelling community; they eke out their livelihoods from a combination of shepherding (which includes temporary migration), collection of minor forest produce and subsistence agriculture
- The lower part of the basin has mixed caste villages and depends on settled agriculture and the agro-industrial development in the region
- The forest areas in the Warana basin, which is part of the Western Ghats: recognised as a hot spot in terms of endangered natural biodiversity

# Biodiversity and livelihood issues

- Significant changes in agriculture especially in the valley portion since the 60s;
  - High, external input based agriculture
  - Market driven
  - Sugarcane centred agriculture - negatively impacted on agro-biodiversity
  - Though in the upper portion of the basin there have not been significant changes in agriculture, certain traditional practices to sustain soil fertility and weed control have been changing

# Biodiversity and livelihood issues

- Western Ghats and the wider context of climate change
  - The Western Ghats, one of the world's acknowledged biodiversity hotspots is a key component of the mega bio-diverse nature of the country
  - The Western Ghats is vulnerable to climate change and there is a need for focused research on some of the regions, including Western Ghats, as such regional specific studies do not exist today (R. K. Pachauri, Chair, IPCC)
- Triple displacement of the people
- Increasing animal-human conflicts
- Bauxite mining within the Chandoli Wildlife Sanctuary

# Presence of civil society organisations

- There is a very active civil society initiative in the region to organise the people displaced by the Warna dam project and Chandoli Wild Life Sanctuary
- There are many NGOs and academic institutions working in the area of environment (including biodiversity)

# Advisory Committee

- **Prof. Madhav Gadgil:** widely known academic/expert on biodiversity issues; played an important role in the Biodiversity Bill of 2002; involved in efforts like networking of Indian Biodiversity databases, people's biodiversity register, National Biodiversity Strategy and action Plan: Western Ghat Region, etc.; Chairperson of Scientific and Technical Advisory Panel of Global Environment Facility; presently heading the Maharashtra Geno Bank Project.
- **Dr. Bharat Patankar:** leading activist from the region involved in organising people around displacement, equitable and sustainable use of water, etc.
- **Ms. Sanskriti Menon:** Centre for Environment Education, the best known NGO involved in environmental education
- **Shri Madhav Gogte:** retired Chief Conservator of Forests from Maharashtra
- **Dr. Sanjeev Nalawade:** Head of Geography Department, Fergusson College, Pune; has written extensively on biodiversity issues