

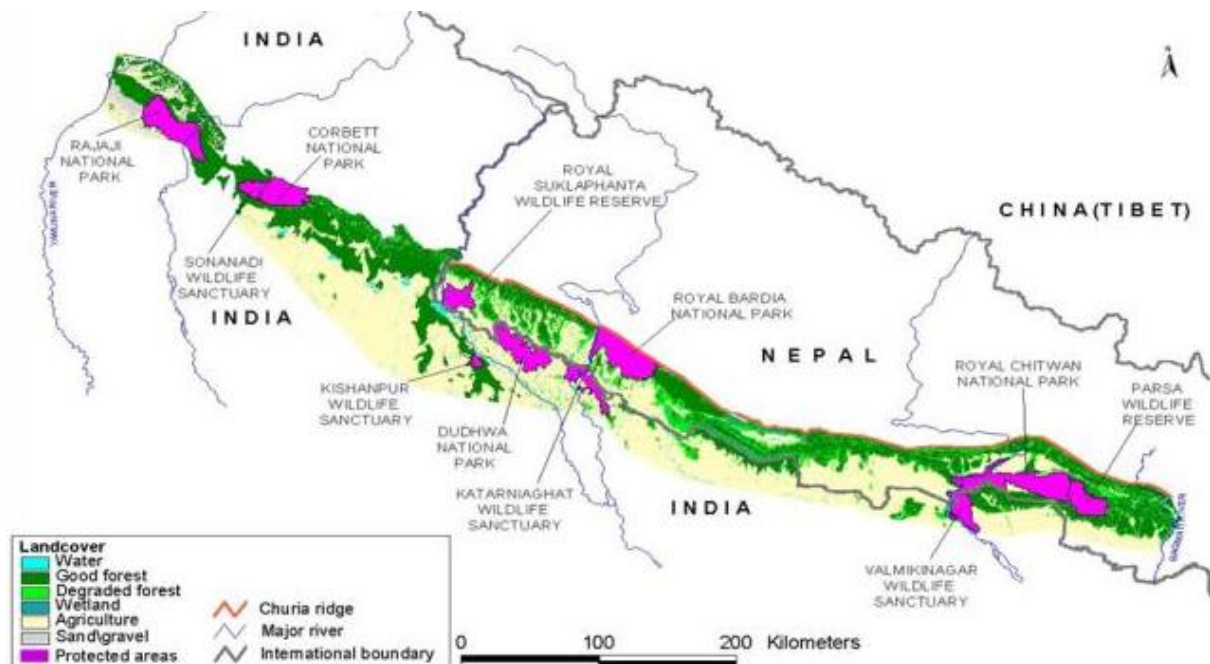


India: Biogas for the Tigers

The goal of Terai Arc Landscape program is to create a single functioning landscape through restoration and maintenance of key corridors for wildlife, linking 11 protected areas in the 800 km long landscape along the foothills of the Indian Himalayas.

The specific threats to this landscape are:

1. Forest conversion due to agricultural expansion
2. Unsustainable harvesting of timber
3. Unsustainable extraction of fuel wood and fodder
4. Overgrazing of reserve forests specifically in corridor areas
5. Wildlife poaching



Terai Arc Landscape, India, WWF Eastern Himalayas Ecoregion

In the Kotabag-Bailparo Corridor, 60% of land coverage is forest, with approximately 15% of land dedicated to wheat and rice cultivation and commercial growing of vegetables (tomato, onion, cabbage, cauliflower). The Kotabag-Bailparo corridor contains 15 villages with 11`800 people, representing approximately half of the total population of the Kotabag Block (38 villages and 25`800 people). Population density is 394 persons per sq. km (the national average is 324 / km²).



MARTIN HARVEY / WWF-CANON

Indian tiger (*Panthera tigris tigris*). Six week old cubs. Endangered species

Human-wildlife conflict takes a number of forms. The *Mallotus philippensis* tree found in the forests is good food for elephants, but is also used for fodder for cattle. Sugar cane is grown along the corridor, inviting conflict with elephants. There is little natural grassland in the corridor, leading ungulates to move towards village boundaries to feed on standing crops. Tigers and leopards have been found to prey on cows left to graze within the forest or at village boundaries.

More than 90% of fuel needs in the area are met with wood gathered from the forest. This introduces human presence into the habitat of the wildlife, which together with the practice of letting cattle graze in the forest increases the potential for conflict between humans and wildlife. On average a family consumes approximately 23-24 kg of wood per day in winter and about 15-16 kg per day in summer. Consumption in a village varies considerably from this average, depending on the proximity to the forest, the season and the availability of agricultural waste and cattle dung as alternative sources of energy. One or two members of the family forage for fuel wood, carrying 30-35 kg per load, as the result of 4-5 hours of searching.

This project addresses the pressures on the forest from the unsustainable harvesting of fuel wood and overgrazing in the forest by cattle. It seeks to achieve this through a series of initiatives:

- Capacity-building of community-based institutions. Self-help groups provide a channel for local learning.
- Support for a fodder plantation program to reduce the demand for fodder from the forests. Approximately 750 households in 15 villages have been reached via village "Self-Help Groups". Seeds for growing fodder grass (clover) on private land were provided, with villagers covering approximately 20% of the costs.



BELLA ROSCHER / WWF-SWITZERLAND

Cooking with biogas, buffer zone of Corbett National Park, Terai Arc Landscape, India

- Adoption of alternative energy sources, specifically biogas plants. These provide a direct alternative to fuel wood for cooking, and since they require cattle dung as an input they also encourage for stall feeding of the cattle. Both directly reduce pressure on the forests and the potential for human-wildlife conflict (tigers feeding on cattle). Initial results indicate fuel wood consumption is reduced to 70% of previous levels.
- In addition, replacing wood burning with biogas reduces CO₂ emissions by approximately 4 tons per year, the equivalent annual emission to a small car.

The 120 biogas digestors currently in operation have shown positive impact on tiger conservation. When WWF India initiated these "pilot digestors" in 2007, the occupancy of tiger was two beats (basic unit of a range). By now, the occupancy has increased to 10 beats. The impact is interesting because with the increase in occupancy the human-tiger conflict has gone down. We are looking forward to have a detailed scientific study soon to justify this with more proof.



BELLA ROSCHER / WWF SWITZERLAND

Mrs Khasti Devi next to her biogas unit.

WWF Schweiz

Hohlstrasse 110
Postfach
8010 Zürich

Tel.: +41 (0) 44 297 21 21
Fax: +41 (0) 44 297 21 00
E-Mail: service@wwf.ch
www.wwf.ch
Spenden: PC 80-470-3



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