

# Panaji, Goa (India)

## ECOLOGISTICS PROJECT CITY PROFILE

### ABOUT THE CITY

Panaji, the capital of Goa, is a vibrant city where the traditional and the contemporary co-exist in harmony. The city, with its picturesque setting, vibrant culture and heritage, rich biodiversity and growing economy, is an international tourism hotspot. Events organized in and around the city like the carnival, the International Film Festival of India, the Sunburn Music Festival, Supersonic, the wine festival and others, attract many international tourists. The economic base of Panaji is formed by tourism, which can be categorized under hospitality, restaurants, trade and commerce. The city is a major trading centre for agricultural products and other commodities among the neighbouring cities. It also serves as the educational and medical hub for the district.

### City transport

#### PASSENGER

Panaji has a unique character due to the Portuguese history of Goa. The city was designed for pedestrians and other non-motorized traffic. Currently, with the growing population and the increase in vehicles, there is pressure on the infrastructure. Traffic jams and parking along streets have become the norm. The public transport system is dependent on private initiatives and only serves lucrative routes. The public transport system in Goa consists of buses, motor cabs, auto-rickshaws and pilots (motorcycles). It is estimated that about two-thirds of the bus operators are private and the state-owned Kadamba Transport buses operate parallel to the private operators. Inadequate public transport with low frequency and overcrowding is causing people to shift to private vehicles, leading to an increase in parking demand in the city. Due to a lack of focus on pedestrian safety, footpaths are not continuous and maintained, leading to poor walking conditions.

Ferry transport is a significant transport mode in the city. There are three jetties transporting people and vehicles across the Mandovi river. The more than 0.3 million passengers are served annually as per the City Development Plan 2041 (CDP). The Goa Tourism Development Corporation (GTDC) and few private operators have introduced river cruises along the Mandovi river in the evenings.



MODAL SHARE (2012-13)

Two-wheeler	65%
Private car & jeep	28%
Goods vehicle	3%
Two-wheeler on hire	2%
Rickshaw	1%
Bus	1%

#### Land area

City: 8.2 km<sup>2</sup>  
Urban area: 21.01 km<sup>2</sup>

#### Population

City: 40,017 inhabitants  
Urban area: 0.1 million inhabitants

#### Population density

4,880 inhabitants/km<sup>2</sup>

#### Name of the Mayor

Mr. Vithal Dayanand Chopdekar

#### Connectivity

Air, rail, water and road

#### Economy

Tourism

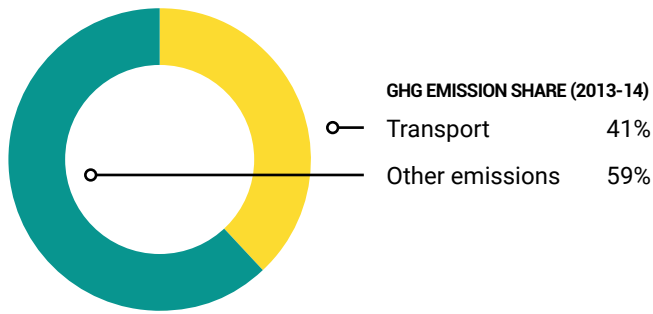
#### Main website (municipality)

[www.ccpgoa.com](http://www.ccpgoa.com)

#### FREIGHT

In terms of goods flows, the entire movement of iron ore in Goa is on waterways. As per the Comprehensive Mobility Plan (CMP), there are 133 barges with an average freight carrying capacity of 807 tons carrying ore by the river to the port, though currently iron ore mining is banned due to environmental issues. Around 8,000 trucks carrying iron ore from across the border (Karnataka) reach the Usgao-Dharbandora hub and diverge into three directions to various unloading points. The Mandovi, Zuari, Sal, Chapora and Talpona rivers are all inland waterways and are used extensively, particularly to transport minerals to the port. In some places in Goa, there are river crossings which are serviced by ferry boats. Since Panaji is visited by approximately 900,000 tourists annually, the consumption of local goods is considerably higher compared to other cities. As per interactions with various stakeholders, it was observed that independent retailers and local convenience stores together represent the majority of all daily deliveries in Panaji. Delivery of goods to these local stores varies from three times a week to twice a day. Also, the delivery vehicles were characterized by low goods fill rates. Growth in the use of the Internet has led to the rapid development of e-commerce, which is one of the fastest growing consumption sectors in Panaji. Additionally, food delivery applications, such as Uber Eats, Zomato and Swiggy, constitute a major share of goods trips. However, e-commerce and app-based food delivery companies rely on private two-wheelers for goods deliveries.

## GHG EMISSIONS PROFILE



The existing GHG emissions inventory was prepared in accordance with the approved principles and standards of the Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC).

During the year 2013-14, the transport sector contributed to approximately 55,406 tons of CO<sub>2</sub>e, i.e. 41 percent of the total GHG emissions.

## TRANSPORT DECARBONIZATION STRATEGIES

The City has proposed to implement a public bike-sharing system for the entire city along with the introduction of services in the city for bus tracking. Other elements include journey planning through mobile applications based on real-time data to optimize operations and boost ridership. The following are also proposed as part of a larger low-carbon development strategy:

- Expand the city bus service network and integrate it with proposed pedestrian zones, bike-sharing stations and ferry routes to ensure last mile connectivity and accessibility.
- Implement a light bus rapid transit (BRT) route service from Karmali Station to Panaji.
- Introduce a hop-on hop-off bus service in the core city area and along touristic sites to reduce congestion.
- Shift towards the use of compressed natural gas (CNG) fuel in the city bus fleet.
- Improve and increase the frequency of existing ferry systems for Betim-Panaji, Riabander-Chorao and Riabander-Divar, and develop new ferry routes along Old Goa-Divar-Ribandar-Panaji, Divar-Chorao-Ribandar-Panaji, Divar-Chorao-Brittona-Panaji, Riabandar-Panaji and Brittona-Panaji.
- Develop a pedestrian footpath network around 18th June Road, Swami Vivekanand Road and Governador Pestana Road, and pedestrian zones along DB Road and historical areas like Panaji Church, Boca Da Vaca and Miramar Beach.
- Enforce motorized vehicle-free zones in the city core area.
- Restrict and regulate the entry of heavy vehicles in the city via zones and scheduling.
- Encourage mixed-use development as a combination of residential, commercial, cultural and institutional uses, where these functions are physically and functionally integrated, and which provides pedestrian connections, reducing the need for long distance trips.

