

## Challenges & Opportunities of Infrastructure Development of an Island Village: A Case Study of Chodan Island in Goa

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**Abstract:** Reliable and effective infrastructure remains a major challenge in the villages. The scenario is still more grim for Island villages which often remain isolated from the mainland. Lack of infrastructure and favourable improvement escalates and create many hardships affecting the productive life of the villagers. This paper highlights the infrastructural needs of the Island village and how lack of infrastructure, specifically, adequate and timely transport facility, adversely affect the villagers.

## INTRODUCTION

Chaudhary Charan Singh, the then Prime Minister of India, beautifully summarized the significance of villages, when he said that the true India resides in its villages. The village, according to Gandhi, was where the largest possible number of village industries were booming, in which nobody was illiterate, where the roads would be clean, there would be a fixed place for evacuation, the wells would be clean, there would be harmony among the different communities and untouchability would be completely non-existent. As per the 2011 census, rural areas account for 68.84 per cent of India's total population (Census, 2011). Since Independence, there has been growing emphasis that villages have to be developed to strengthen the fabrics of the

country. In this context, the Government of India has initiated serious efforts to provide and improve the existing infrastructural needs of rural India through various scheme and programmes which is supposed to reduce seclusion and facilitate access to basic amenities leading to a productive economic and social life in the villages. Rural infrastructural development also help reduce poverty through a positive effect on agricultural productivity, real incomes and employment in the agriculture and non-agriculture sectors (World Bank, 1994).

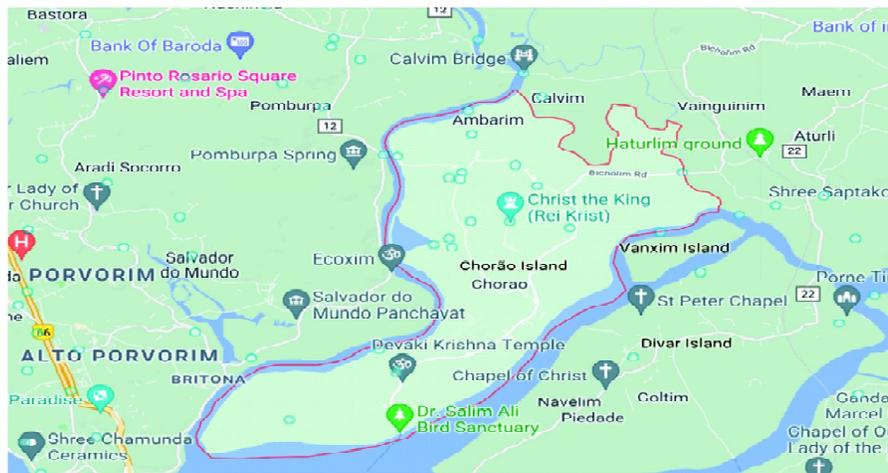
Development can have three different meanings, as improving the village, helping those in need, and bringing personal benefit (Doreathea 2001). The aim should be sustainable human development, which means broadening the scope of opportunities available to the people to improve their lives by further developing their capabilities without disturbing the existing rural setup. Among the many capabilities that are essential for enhancing the quality of life of the people, three are generally accepted as crucial, the ability to lead long and healthy lives; the ability to be knowledgeable; and having access to resources needed for a decent standard of living. It is a great challenge in making growth more socially inclusive and regionally balanced. Various infrastructural needs include roads, bridges, hospitals, power, water supply, educational institutions, banks etc. The results, showing the relative importance of various infrastructures, suggest that the government should prioritise additional investments in electricity, roads, irrigation, housing and telecommunications to enhance overall well-being (Madhusudhan 2017).

Studies also show that the development situation in a village is influenced by the size of the population and its social class structure (Chaurasia, 2018). Though there are common characteristics of a village, however, every village is unique in itself with its features and requirements. The needs of a mainland village could be different from an island village. The physical condition and limitations of coastal and small islands are different from the mainland. The coastal area is defined as an interface or transition areas between land and sea that is diverse and dynamic in function and form, and do not lend itself well to the definition by strict spatial boundaries and it is influenced by land conditions and sea conditions (Supriharyono, 2001). Because of this condition, the coastal area directly receives influences from sea and land, so it makes an uncertain condition of the coastal area. The uncertain conditions of coastal area change community livelihoods, their social conditions, and also their natural and physical characteristics (Dahuri, 2001). Also, Poor connectivity due to inadequate infrastructure between islands and centres of economic activity constitutes a critical constraint to the inclusiveness of growth. Development of rural

infrastructure in general and rural transport infrastructure, in particular, is very crucial in India (Samanta, 2015) as it can also be an obstacle to ensuring that growth benefits all. Lack of proper transport connectivity undermines the development of the islands, and thus fails to narrow the socioeconomic disparities, while improved sea and road transport infrastructure can improve access to health, education, and other social services for the poor and lower the cost of providing public and social services.

Hence an attempt is made to study the infrastructural needs and analyse the necessity of direct transport facility in an Island village with the case of Chodan village in Goa. The primary data for the study was collected with the help of a structured questionnaire. A close-ended questionnaire survey targeting 100 respondent residents of Chodan village was carried out to gather opinions regarding infrastructural importance in the village while the secondary data is collected from research journals, local daily etc.

## RESEARCH MILIEU



Chodan/Chorao Island village-Goa. Google Maps

*Geography:* Chodan or Chorao is an Island village situated in Tiswadi Taluka approximately 5 km away from the capital city Panaji. It is encircled by two branches of the river Mondovi, the rivers of Mapusa and Naroa, facing Salvador do Mundo on the north, Ribandar and Sao Pedro on the south and Divar on the east. It is the second-largest Island of Goa comprising twenty-three bairror or vaddes. It is 7.5 miles in length and 4.5 in width a total area of about 30sq miles. The total geographical area of the village is 1467.7 hectares.

*Etymology:* The island was earlier called Chudamani, which means ‘stunning precious stone’ in Sanskrit. According to the locals, who call it Chodan or Chodana, when Yashoda, the mother of Lord Krishna, threw away diamonds, the islands emerged from them. Later it got the name Ilhas das fidalgos as the Portuguese noblemen found the island very pleasurable to stay.

*Significance:* Chodan Island is one of the largest among the other 17 islands of Goa. The island is also home to the Salim Ali Bird Sanctuary, which is in the western part of the island on an area of 178 hectares, one of the largest bird sanctuaries of Goa.

*Population:* Chodan has a total population of 5,268 people and about 1,202 houses in Chodan village (Census, 2011).

*Accessibility:* There is no direct access to the Island from the mainland, though the Island can be accessed by ferries from two jetties, Ribandar and Pomburpa as well as two bridges i.e., the 37-year-old Tikhazan bridge at Bicholim and the 6-year-oldcalvim bridge.

## Infrastructure Available in Chodan Village

Table 1.1

<i>Sr. no</i>	<i>Infrastructure available</i>	<i>No</i>	<i>Total</i>
1	<b>Banks</b>		
	State Bank of India	01	
	Central Bank of India	01	
	HDFC Bank	01	
	Canara Bank	01	<b>04</b>
2	<b>Education institutions</b>		
	<b>Schools</b>		
	Dayanand High School	01	
	St. Bartholomew’s High School	01	
	<b>H.S.S</b>		
	R&P Salkar Higher Secondary	01	<b>03</b>
3	<b>Anganwadis</b>	04	<b>04</b>
4	<b>Police station</b>	01	<b>01</b>
5	<b>Primary Health Centre</b>	01	<b>01</b>
6	<b>Post office</b>	01	<b>01</b>
7	<b>Panchayat</b>	01	<b>01</b>

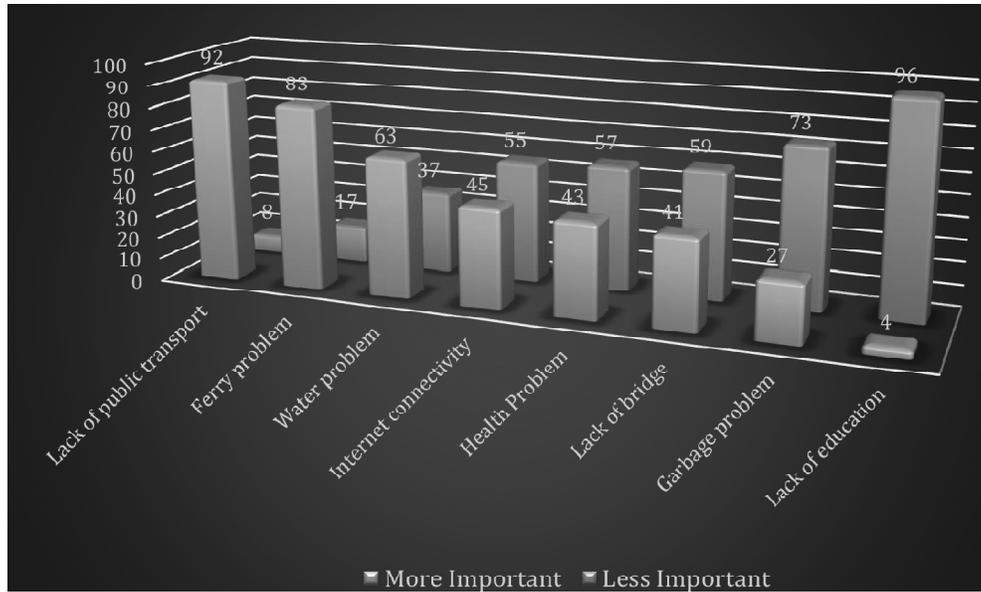
8	<b>Transport</b>		
	Private buses	04	
	Public buses (Kadambas)	02	<b>06</b>
9	<b>Old Age Home</b>	01	<b>01</b>
10	<b>Shop</b>		
	Fair price	04	
	Horticulture	06	<b>10</b>
11	<b>Religious sites</b>		
	<i><b>Churches and Chapels</b></i>		
	Our Lady of Grace Church		
	Chapel of St. Jerome		
	St. Bartholomew's Church	01	
	Chapel of Sacra Familia	01	<b>05</b>
	<i><b>Temples</b></i>		
	Shri. Peso Ravalnatha Temple	01	
	Shri. Saibaba Temple	01	
	Shri. Vasudev Temple	01	
	Shri. Vishnu Temple	01	
	Shri. Krishna Temple	01	
	Shri. Kaythayeni Temple	01	<b>06</b>
12	<b>Co-operative society</b>	01	<b>01</b>

## DATA ANALYSIS

Every village has various problems. Eight important problems were listed in the questionnaire, and the respondents were asked to tick their preferences what they considered as the most important problem and in that order list the least important one.

**Table 1.2**

<i>Sr. No.</i>	<i>Problems</i>	<i>No. of Respondents (100)</i>	
		<i>More Important</i>	<i>Less Important</i>
1.	Lack of Public Transport	92	8
2.	Ferry Problem	83	17
3.	Water Problem	63	37
4.	Internet Connectivity	45	55
5.	Health Problem	43	57
6.	Lack of Bridge	41	59
7.	Garbage Problem	27	73
8.	Lack of Education	4	96



**1. Transport problem:** Out of 100 respondents, 92 respondents listed lack of public transport as the most important problem. Since Chodan is an Island village there is no direct access to the mainland. Most of the youth travel outside the island every day for their jobs, or to attain higher education. In this scenario, the transport facility becomes more fundamental to cater to daily commuters. The Private as well as the government-owned buses which do not operate on a timely basis, pick the commuters within the village and drop them at the ferry point, from where the people aboard the ferryboat, and travel to the mainland. Due to lack of public transport, students don't reach their schools and colleges on time. Even people who are going for jobs get delayed. There is the unavailability of public transport on Sundays and other public holidays. Whereas on Ganesh Chaturthi vacation, buses are not available for almost 8 days. Private buses which operate are of mini sizes, as a result, they cannot accommodate more passengers. So, passengers have to wait for long hours till the next bus arrives. Besides, Buses are available only up to 8 pm and after that, no buses are available thus creating great inconvenience to the people of Chodan. Because of this situation, relatives and outsiders are hesitant to come to Chodan.

**2. Ferry Problem:** As there is no direct bridge connecting Chodan with Mainland, people have to rely on ferry boats to cross through the Mandovi river to Ribandar and then travel to any part of Goa. Out of 100 respondents, 83 respondents

listed the ferry problem as the most important problem because there is no timely availability of ferries. If on any day ferries are less than 5 in number, then there are long queues of vehicles and they have to wait for hours. If any medical emergency takes place ferries are not available or it doesn't reach on time and sometimes because of which patients even die before reaching to the hospital. In the winter season due to heavy fog, ferries are delayed as the drivers can't even see the way through the river. And as a result, job goes and students' lives are at risk. Sometimes students miss their classes and there are times when they have missed their exams too. In heavy rains and high winds, ferries are unsafe. People get very scared to go on the ferry. There are instances due to the high range of wind, ferries get stuck in mud. Sometimes the ferry just gets floated away due to heavy breeze and another ferry is summoned in to tow the first one away in a safe place. Even at the time of high tide in the river, ferries shake badly because of which people get afraid.

**3. Water woes:** Out of 100 respondents, 63 respondents listed water problem as more important because the water supply is not regular in Chodan. The then P.W.D. Minister SudinDhavlikar stated that Chodan village will get ample water once the project of 800 cm. from Mayem reservoir to Chodan reservoir is completed (The Goan, 2016). The work was expected to be completed by March 2017. The work costing Rs. 5.59 crore will help to provide water to Chodan daily and will solve the water shortage problem faced by the village. In some parts of Chodan village, the villagers are supplied water as late as 2 am. at night or sometimes early at 5 am. And the supply is only for 1 or 2 hours. Chodan gets water supplied through pipes laid down by P. W. D. People to have to suffer a lot to get water. They have to go to wells to get water. They have to wake up early or at midnight to get water. Sometimes water doesn't come for 1 week also because of which villagers face hardships.

**4. Poor Internet Connectivity:** Out of 100 respondents, 45 respondents listed internet connectivity as more important. The respondents emphasized that internet connectivity was very important. Whether be it social interactions, getting desired information, trading, doing Assignments, providing public e-services etc. are affected because of poor connectivity. The Internet has become one of the necessities of human life of the 21<sup>st</sup> century era. In Chodan village there is no mobile tower due to which many people face the connectivity issues.

**5. Health Problem:** Out of 100 respondents, 43 respondents listed health problem as more important. The respondents said that though there is a health centre in Chodan, there are no better facilities available for people in this health centre. And most of the time doctors are not available. Villagers are also deprived

of 108 helpline emergency service such as ambulance which is meant to provide quick and effective paramedic services in the state. The residents from Chodan, left with no option but to drive the injured/sick person in their private vehicles to the ferry point and then to a mainland hospital.

**6. Lack of Bridge:** Out of 100 respondents, 41 respondents have listed lack of bridge as the most important problem in the Chodan village. There are only two ferry points in Chodan, one is from Chodan to Ribandar which gives access to main city Panaji and another is from Chodan to Pomburpa used to travel to other parts of Goa. As explained earlier, in Chodan village, ferries are not available all time. So, people have to suffer a lot of inconveniences. Sometimes if any medical emergency takes place as the delivery of a pregnant woman or some health problems that which needs immediate medical attention then it becomes very difficult to transport such a person to the mainland hospital. For many years the villagers have been facing the problem of commuting, be it to Panaji, Bambolim or Porvorim and surrounding areas as it lacks direct access to both the Tiswadi and Bardez mainland. The UCC (*United Citizen of Chodan*) has been persistently following the demand for the past many years (OHerald, 2016).

**7. Traditional Garbage disposal mechanism:** Out of 100 respondents, 73 respondents listed garbage problem as less important because, for some parts of the village, the Panchayat has provided plastic bags for garbage disposals. The Panchayat has hired workers to pick the garbage house to house. But the work is not done on regular basis. Also, every house has a traditional way to process its garbage.

**8. Satisfactory Educational institutions:** Out of 100 respondents, only 4 respondents have listed lack of education as the most important problem. Though there is no college or technical institutes for higher studies in Chodan, often students have to go out of the island to complete their further studies, but out of 100 respondents 96 respondents listed lack of education as a less important problem because there are schools and higher secondaries in the Chodan village which have better educational facilities.

### **LACK OF BRIDGE: AN INFRASTRUCTURAL CHALLENGE**

The above infrastructural availability and data illustrates how lack of direct transport has belittled the overall aspects of public life causing inconvenience and affecting people's productivity in Chodan Island village. Students, office workers and labourers, dependent on public transport experience hurdles every day as their journey begins by taking a bus from their residence to the Chodan Island ferry point then cross the

river, reach Ribandar ferry point and then again take a bus to reach Panaji city which is 5.4 km away. The average time wasted daily by commuters is approximately 30-40 minutes. Villagers admit that travelling back and forth to Panaji and its surrounding areas by bus is more time consuming and stressful. The route via Chodan ferry is also used as a shortcut by the commuters from Pomburpa, Mayem, and Bicholim, to travel to Panaji hence ferries fail to accommodate the increasing traffic and villagers of Chodan island have no other shorter route to travel to and from Panaji. In case of emergency or unavailability of public transport and ferry the second option for Chodan villagers to reach Panaji is via the Pomburpa-Aldona route which is 27 km approximately.

There are no Medical stores or Pharmacy in Chodan village. Villagers, unfortunately, have to cross the Island to get medicines. Since there are no petrol/fuel pumps in Chodan Island the commuters with cars & bikes also have cross Island to get fuel and depending on ferries for these necessities is perilous. Besides ferries operate till 1:30 am (RND, 2020) and after 2:00 am there are no regular ferries. In case of emergency, a person or group of people who need to cross and get to the mainland back & forth after 2:00 am, have to either make a call for a special ferry or keep hooting unless the ferry arrives and had to pay 250 earlier and now 100 rupees per trip (OHerald, 2020). Being an island village, the demand for the bridge is more imperative for the natives of Chodan.

As there has been constant demand raised by the villagers to construct a bridge, many have opposed the same citing environmental issues, as construction of bridge will pave a way for rapid urbanization totally disturbing the rural setup. Even the Land Acquisition Act 2014 has acted as a deterrent in the acquisition of land which is almost non-cultivable and barren for years (Mendes, 2015). The bridge it's still remains a mirage for many villagers facing hardship every day.

## **CONCLUSION**

It can be concluded that the infrastructural development in the Island village of Chodan is not up to the mark. The lack of Medical stores, Ambulance service, Fuel Pumps and poor Internet connectivity has adversely affected the villagers. More importantly inadequate transport infrastructure and lack of direct transport facility, in terms of public buses on village roads, or untimely and unsafe ferry boats has been a major challenge in the Chodan Island village. Definitely there is a need for a bridge that will connect this island with the mainland. By having connectivity of bridge, one would reach faster to work and students would reach to schools/colleges

in time. Students will have more options in term of choosing schools and HSS institutions and avail benefits of other technical institutions. The bridge is also important in case of a medical emergency where the patient can be ferried to the hospital in time and get the required medical help. Women will get better job opportunities and women will be able to go for jobs. Sick people can go for treatment in the hospital. Old and elder people can reach with comfort wherever they want to go. This shows that bridge is important for all the villagers of Chodan. There will be no adverse impact of the bridge on the Chodan village only if the construction is carried out without affecting the village structure and with the intention of providing transport facility and not urbanising the village.

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