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The Fake Forests of Chhattisgarh

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Chhattisgarh, the 10th largest state of India, is famous for its forests and tribal population. The forest area as a percentage of the state's total area as per the latest economic survey of the state stands at 44.2%, much higher than the all-India level of 21.67%. The total tribal population of the state represents more than 10% of entire India and accounts for more than 30% of the state's population. The tribal population of the state is immensely dependent on the forests for their livelihood. The forest is their dwelling and a vital income source considering the non-timber forest produce collected by the tribal women. The forest also provides them firewood, medicinal plants, mahua, etc., for their captive use. In this background, proper measurement of the forest area across the state becomes immensely important. However, consideration of economic surveys of the state from 2007-08 to 2020-21 raises some doubt regarding the authenticity of the state's forest area data. The present paper leads an investigative approach backed by solid literature review and quantitative comparison to determine whether the forest area data is fudged or accurate. The result refutes forest area related economic survey data of Chhattisgarh as accurate.

KEYWORDS

Forest area, Forest destruction, Tribal, NTFP, Livelihood, Chhattisgarh, Data fudging

1. INTRODUCTION

Chhattisgarh, a newly found state in India carved out of Madhya Pradesh on 1st November 2000, is famous for its tribal population and forest area. More than 10% of the entire tribal population of India lives in the state and comprises more than 30% of the state's population (Gond, Halba, Dhruvaa in Bastar district, Abujhmadia, Bison horn maria, Muria in Narayanpur and Bastar district, Kawar in Raipur, Bilaspur, Raigarh, Durg, and Sarguja districts, Binjwar in Raipur, Bilaspur, Raigarh and Sarguja districts) [1]. The name of the tribes given within the parentheses is the dominant tribe in the mentioned region. The state is also famous for its minor forest produce primarily collected by the tribes living within and adjacent to the forest. The contribution of forest produce as the percentage of gross state domestic product stands at 2.73%, which is a significant share considering the large forest-dependent tribal population of the state. The state also boasts of its forest area standing at 59772 km^2 (44.2%) and ranking fourth in India [2]. Some of the essential forests produce are tendu leaves (*Diospyros melanoxylon*), sal seed (*Shorea robusta*), harra (*Terminalia chebula*), Bahera (*Terminalia bellirica*), mahua (*Madhuca latifolia*), chironjee (*Buchanania lanzan*), tamarind (*Tamarindus indica*), puwad (*Senna obtusifolia, Senna tora*), rangini lac (*Kerria lacca*) and other forest produces. The name given within the parentheses is the scientific name of each product. The per capita income of the state at the current market price is Rs. 1,04,943, which is lower than the all India level of Rs. 1,26,968 [2]. The state performs relatively poorly in state-level human development index, ranking 24th of 29 Indian states [3]. After this brief description of the state, it is apparent that the forest area and the large tribal population of the state are complimentary and tribal people are very much dependent upon the forest produce. It becomes more sensitive if we consider that mainly the women are in charge of collecting the mentioned forest produce [4]. In this background, it becomes essential that a proper survey and measurement of the forest area should always be undertaken. In this context, the present paper devotes all its energy to verify the authenticity of the forest land that has been measured, documented and represented in different economic survey of the state. However, before that, it delves into a review of existing literature that has either focused on the rich forest of the state or associated the livelihood of the tribal people with the forest.

1.1 Review of existing literature

The literature review starts with the primary objective of finding the association between forests of Chhattisgarh and its sizeable tribal population. Ganguly have brilliantly portrayed the forest dependency of the tribal people 'the presence of abundant forest resources has made the forests a major source of livelihood (tribal have the usufruct right to collect forest produces from government forest' [5]. They collect various forest produces from their own and forest lands to sustain their living, notable among saal seeds, 'chironge,' tendu leaf, harra, mahua flower/seed, tora, mango kernels, bamboo, gums, etc. They do not pursue other economic activities like poultry (except for domestic consumption) or dairying. They rarely go to a mandi to sell goods. The findings of Ganguly got reinforced in successive years by several scholars [5-22]. Further, they have stretched and associated the livelihood of the tribal people with the forests through ethno medicinal plants, tuber and leafy vegetables as natural medicine, food, fuelwoods, tendu leaves and natural gums have brilliantly carried out a cost and return analysis of the state's forest produce [5,8-10,14-16,19-21,23]. They have considered 200 households spread over Bastar Plateu, Chhattisgarh plains and northern hills. The estimated income generated by the non-timber forest produce stood at Rs. 35370.41 in a year, reflecting the importance of non-timber forest produce in the livelihood of the tribal population. Churpal have listed the essential and valuable non-timber forest products of Chhattisgarh and positively related them to the livelihood of the tribal population [10]. It is worth mentioning that Ganguly mentioned that among the forest products, bahera, harra, mahua and tendu are already threatened or endangered [5,24]. The present paper holds no objection to the forest dependence of the tribal population as depicted by the previous scholars. This emphasizes that an increase in forest area will add to the livelihood of the vast tribal population living in the state and a decline in forest area will do the reverse. In this circumstance, the proper measurement of the forest area becomes crucial to the livelihood of more than 30% of the state population.

A careful endeavour through the literature brings out a few forest shares as a percentage of the state's total area. Many scholars have mentioned that 44% of the total area of the state is under forest area [7,10,13, 16,18,19,25-32]. Further, some have mentioned that 43.6% of the total area of the state falls under the forests [14,15,22,33]. Gupta and Painkra have stated that 41.4% of the total state area falls under the forest area [17,34]. Singh gives an ambitious estimate of 45% of the state area falls under forest [35]. One thing that becomes apparent from this discussion is that different authors have given different accounts of the total forest area of Chhattisgarh as a percentage of the total area of the state. Though they differ marginally, a minor change in percentage might significantly change the absolute value. Moreover, there should not be any ambiguity. Interestingly some of the scholars mentioned, have also admitted that the increased biotic pressure, anthropogenic movements and indiscriminate illegal harvesting are leading to the decline in the forest area of the state [6,20,36]. In this regard, three of the studies deserve special mention. Niyaj have shown that in Kenda village, Kota block, Bilaspur, between 2001 and 2013, the forest area declined from 10.95 km^2 to 8.38 km^2 a decline by more than 23% [29]. Ahirwar has mentioned that overexploitation of forest and unwanted forest fires have severely hampered the district's Bordin and forest region, mainly inhabited by the Baiga and Korkua tribes [6]. The collection of medicinal plants and plant parts and their use are the prime source of the livelihood of the tribal population living there. Lal have also opined that forests will run out of density and bio-diversity without viable alternative measures [36]. They have commented that the government's actions regarding forest regeneration fall short of what is needed. Ahmad using remote sensing and geographic information system (GIS), have shown a severe decline in the Chhattisgarh forest area from 1982-2006 [25]. It is apparent from these studies that forest areas could not remain constant over the years. It is inversely proportional to biotic stress and many other endogenous as well as exogenous factors.

As the literature review portrays, the livelihood of the tribal population of the state is mainly dependent upon the non-timber forest produce; there are some ambiguities among the scholars regarding the percentage of the forest area of the state. Some scholars admitted that there are increased biotic pressure, anthropogenic movements, forest fire and illegal harvesting leading to overexploitation of the forest, resulting in declining forest contour. However, they have still stuck with the enlisted forest area as a percentage of the state area for some unknown reason. In this background, the present paper delves into data consideration from government sources and tries to determine if anything went wrong with the previous scholars as far as their considered forest area is concerned.

Table 1. *Forests of Chhattisgarh and their division 2007-08 to 2020-21, in km² [2,37-49]*

Year	Total area of the state [50]	Reserved forest	Protected forest	Undemarcated/ unclassified	Total forest area	Percentage area (given)	Percentage area (calculated)
2007-08	135192	25782.17	24036.1	9954.13	59772.4	43.85	44.2
2008-09	135192	25782.17	24036.1	9954.13	59772.4	43.85	44.2
2009-10	135192	25782.17	24036.1	9954.13	59772.4	43.85	44.2
2010-11	135192	25782	24036	9954	59772	43.85	44.2
2011-12	135192	25782	24036	9954	59772	43.85	44.2
2012-13	135192	25782	24036	9954	59772	43.85	44.2
2013-14	135192	25782	24036	9954	59772	43.85	44.2
2014-15	135192	25782	24036	9954	59772	43.85	44.2
2015-16	135192	25782	24036	9954	59772	43.85	44.2
2016-17	135192	25782	24036	9954	59772	43.85	44.2
2017-18	135192	25782	24036	9954	59772	43.85	44.2
2018-19	135192	25782.17	24036.1	9954.13	59772.4	44.2	44.2
2019-20	135192	25782.17	24036.1	9954.13	59772.4	44.2	44.2
2020-21	135192	25782.17	24036.1	9954.13	59772.4	44.2	44.2

2. MATERIAL AND METHOD

The present analysis has considered forest area data from 2007-08 to 2020-21 from Economic Survey of Chhattisgarh [2,37-49]. Further to this, it has also considered district level forest data and summed them for each previously mentioned year. Apart from that the government given percentage of forest area has been cross-checked against the computed percentage of forest area. While doing so several different percentages of forest area that have come from the existing literature have been taken into consideration, to illustrate the spurious results and fudge data that has come time and again. The result of the present study and discussions of the findings have been illustrated in the next section.

3. RESULT AND DISCUSSION

Table 1 comes with three surprises: first, the state's total forest area has remained the same from 2007-08 to 2020-21, which is impossible considering some of the literature that we have surveyed has already mentioned there has been a decline in density and area of the forests. Moreover, a forest is a cluster of living entities (tree). It cannot remain constant over time; it should either increase or decrease. Considering the state's economic emphasis on agricultural land, industry and minerals, the latter is more likely. Second, the total area and its classified distribution as depicted have remained constant, which is another Aesop's fable. Third, the forest area as a percentage of the total area has always remained constant at 44.2% as calculated. However, from 2007-08 to 2017-18, it has been given in the respective economic surveys as 43.85%. There is, of course, a solution to the first two surprises if we assume that the government's forest restoration programmes have precisely matched the decay of the forest over time and the government has kept the demarcation of the forests unaltered over the years. Though, most unlikely but let us give this edge to the government. However, the third surprise remains a surprise as no explanation can be offered. It also questions some of the literature studied considering their different consideration of the total forest area as a percentage of the state's total area. Now let us consider another angle. The mentioned forest area in table 1 must be divided into 28 administrative districts of the state. Hence, the district forest areas' sum should be equal to the state forest area of 59772 km². The sum of the district forest areas as appeared in various economic surveys of the state has been given in table 2 and their percentage of the state's total area. Some years have to be excluded as the relevant data as depicted in table 2 are not available. However, what has been portrayed in table 2 makes the government run out of any more benefit of the doubt. None of the forest data corresponding to the year in table 2 matches that of table 1 so as the share. Moreover, there has

Table 2. *Sum of the district forest areas and percentage of the total area of the state, in km² [40-49]*

Year	Total area of the state	Total forest area (as per district summation)	Total area (%)
2010-11	135192	63364.95	46.9
2011-12	135192	63524.07	47.0
2012-13	135192	63524.13	47.0
2013-14	135192	63312.74	46.8
2014-15	135192	63155.3	46.7
2015-16	135192	63141.98	46.7
2016-17	135192	63172.81	46.7
2017-18	135192	18562.27	13.7
2018-19	135192	18468.28	13.7
2019-20	135192	18498.76	13.7

been a sharp decline in forest areas from 2017-18, which is also most unlikely.

4. CONCLUSION

Chhattisgarh is a prosperous state where poor people live. More than 30% of the state's population is tribal. Their dependency on the forest is unfathomable. In this circumstance, a more cautious approach regarding forest measurement on behalf of the government is in its utmost need. The data published so far regarding forestry in various economic surveys of the state is nothing but forged, which will hinder any planned development of the tribal population of the state as well as environmental and ecological protection. The officials who are responsible for the forest measurement should be held accountable for their misdeed. It should not be forgotten that the tribal population of the state is the result of countless years of evolution and adoption to the ever-changing circumstances. They are far above the political discontent and whims of a few who have years for years bluffed others through fudged data. Proper survey-based measurement of the actual forest area of Chhattisgarh can only heal these prolonging wounds that are eroding the tribal societies over the years. Only positive political will can bring inclusive and holistic growth and development to the tribal population. That development effort must honour the ancient culture and customs of the tribal societies and might not always match the so-called mainstream socio-economic development aspects.

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