Digital Inclusion of Scheduled Tribes:

Role of Law and Policy

| Saksham Malik

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07
22

Discussion Paper

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July 2022

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ABSTRACT

The digital divide between marginalised and non-marginalised populations of the country has impacted the socio-economic growth of the Scheduled Tribes [STs] in India. The first part of this paper discussed the consequences of the divide for the ST populace. The second part of the paper discusses the role of policy instruments in bridging this divide. The study will focus on policy interventions aimed at tackling the supply- and demand-side challenges of the divide, including lack of infrastructure and limited education, digital literacy, and employment opportunities. The paper will discuss the shortcomings of these initiatives and their impact and relevance for STs. Finally, the paper will briefly discuss the experiences of other countries with the digital inclusion of indigenous populations before providing recommendations to the Indian government to bridge the divide.

Keywords: Digital Inclusion, Scheduled Tribes, Digital Divide, Education, Digital Literacy, Internet

INTRODUCTION

Multiple lockdowns and a widening digital divide have forced Jammu and Kashmir's tribal kids out of formal education. Instead of learning, these children must find work to help their families survive (Nisar & Nabi, 2022). Their plight is similar to that of a significant ST population of India that finds itself on the wrong side of the digital divide. The primary causes are supply-side reasons like insufficient digital infrastructure and demand-side reasons like limited income and education levels among STs. In part 1 of this article, we discussed these reasons in detail. A country's laws and policies have a bearing on the digital inclusivity of its population, especially the disadvantaged communities. For instance, the Organisation for Economic Co-operation and Development [OECD] notes that the presence of an independent telecommunications regulator can affect the ability of internet services to be delivered to consumers fairly and efficiently. Therefore, regulatory reforms can impact the supply-side challenges of the digital divide (OECD, 2005).

Overcoming the digital divide is necessary to ensure everyone has access to digital technology and its benefits. Large-scale national-level planning is required to bridge the digital divide and reap digital dividends (Rao, 2005). The Indian government has attempted to tackle the country's digital divide through policy instruments of various kinds. These steps aim to combat the supply-side challenges and the demand-side reasons for the divide. The Indian government's efforts have centred around two types of interventions. Firstly, initiating and running government-funded schemes like IT for Masses; and secondly, devising relevant policies like the National Telecom Policy and National Education Policy to set objectives and provide a roadmap to achieve the same.

This paper will analyse the Indian government's efforts to reduce the digital exclusion of Scheduled Tribes [STs]. The paper will also examine the policies of other countries and how they have dealt with the digital divide issue. Lastly, the paper will provide recommendations for the government to bridge the divide, keeping domestic and international experiences in mind.

TACKLING SUPPLY-SIDE CHALLENGES OF THE DIVIDE

The Indian government has attempted to bridge the digital divide between the STs and the non-tribal populations. These attempts have generally included STs as a focus group in digital inclusion initiatives and aimed at building infrastructure and connectivity. The most significant policy instruments in this context are the Digital India initiative and the National Telecom Policy. The section will delineate their description, shortcomings, and indicative consequences for the STs.

2.1. The Unfulfilled Promise of BharatNet

In 2015, the government launched the Digital India project focusing on three main sectors: digital infrastructure, digital services, and digital empowerment (Sen, 2021). As part of the digital infrastructure initiatives, a public sector flagship project called BharatNet was launched in 2011 to bridge the digital divide across rural and urban areas (Cleartax, 2022). The scheme was designed to provide proper internet connectivity in rural areas. Through Bharat Net Scheme, digital connectivity facilities will be provided in rural areas at affordable cost. The project is tasked with creating the National Optical Fibre Network India, tipped as the world's largest broadband network. Under the project, the fibre network is expected to reach 2,50,000 Gram Panchayats spread over 6,600 blocks and 641 districts (Digital India, n.d.). The project hoped to increase access to the internet for tribal areas, and it started promisingly. In 2015, the Idukki district in Kerala was commissioned as the first district covered

under the project. Broadband services were made available to all 53 Gram Panchayats of the district, including the remote tribal Gram Panchayat of Edamalakudy (Press Information Bureau, 2015).

Six years on, however, the project provides little reason for optimism. As of June 2021, only 1,56,833 gram panchayats are service ready, with both project phases running behind schedule. BharatNet has been delayed multiple times owing to procedural issues and a lack of inter-department coordination and is now expected to be completed by 2025 (Kar, 2022). These delays have exacerbated consequences for STs in various states. For instance, in Orissa, as of August 2020, most of the areas lacking BharatNet coverage came under tribal districts. This anomaly meant that children of tribals in the region could not access online classes, and teachers had to engage students by imparting education at their doorsteps in return for minimal honorariums (Sahu, 2020).

The aim of the BharatNet project was simple: the government aimed to set up an open-access optical fibre network, after which telecom companies would buy bandwidth allocations from Bharat Sanchar Nigam Limited [BSNL] to provide broadband services. However, the overall success of the scheme has more or less been lacklustre. While setting up the project, the main goal was to improve telecom services in remote and rural regions encompassing tribal regions. Here, it has achieved limited success. Telecom secretary Aruna Sundarajan mentioned in a recent memo to the heads of BharatNet and BSNL that despite a few critical observations being made by the PMO, no substantial improvements have been witnessed. According to The Wire, although the government has spent more than 12,000 crore on the BharatNet project, less than 2.5% of village panchayats have commercial broadband connections (Gairola & Srivas, 2019). The Indian policy landscape suffers from a lack of interventions specifically aimed at tackling supply-side challenges responsible for the digital exclusion of STs. In this context, schemes like BharatNet become especially relevant since they intend to provide access to areas with limited or no internet penetration. However, there exists no evidence that the scheme has seen significant success in improving internet access in areas with substantial ST populations.

2.2. National Telecom Policy, 2012: Need for Guidance

Although they do not focus on STs specifically, instruments such as the National Telecom Policy, 2012 have a bearing on the digital inclusion of the community. The programme has been majorly directed at tackling the supply-side challenges of the ICT sphere, such as digital infrastructure creation. However, the policy fails to mention a framework for implementing its mandates. Further, the policy has not achieved its main targets. As of 2018, the minimum broadband speeds were set at 512 kbps even though the 2012 policy had envisaged speeds of 2 Mbps by 2015.

The 2018 National Digital Communications Policy replaced the original Telecom Policy with similar targets and a broadly similar framework. The preamble of the policy notes that the primary intent of the policymakers is to ensure that new technology is secured against existing and emerging threats and made equitable and affordable for all. The aim is for “Universal Coverage rather than revenue maximisation”(DoT, 2018). This change of focus can potentially help STs, considering that the cost of setting up digital infrastructure might not bring in significant revenues in the short run.

The policy presents reasons for optimism since, in addition to focusing on the telecom sector, the government also launched a 'National Broadband Mission'[1] under this policy. However, even with political changes at the centre, it is uncertain whether results will follow the hype in building the necessary infrastructure. It will be a matter of time before we find out if a policy reiterating earlier principles can lead to any progress.

The primary reason for the lacklustre performance of these initiatives has been shallow policies that do not provide a detailed guidance map to achieve targets and the government's inconsistent partnerships with private entities. A comprehensive model that incentivises major telecom and broadband players to set up infrastructure is being experimented with but is largely missing for now. State and Central government interventions in this regard have been witnessed in silos. Backed by the Kerala government's updated guidelines, Reliance Jio plans to enhance coverage in tribal hamlets this year (BL Kochi Bureau, 2022). Late last year, the government announced that private players would provide internet access in the Andhra Pradesh tribal belt (Siva, 2021). However, these interventions are not backed by long-term policy documents or a sustainable strategy and lack transparent monitoring and evaluation mechanisms.

TACKLING DEMAND-SIDE CHALLENGES OF THE DIVIDE

The government has tackled digital inclusion for STs in India by focusing on two major demand-side challenges, i.e., education and income. Without sufficient education to understand the use of ICTs and financial resources to afford these technologies, supply-side interventions like expanding internet coverage will not bridge the digital divide between STs and non-ST populations.

3.1. Education

The demand-side challenge of the education of STs is worked on in two ways, i.e., by i) enhancing the digital literacy of STs and ii) providing children community access to quality education. At the outset, it should be noted that specific policies aimed at enhancing the education levels of ST children are limited. Notable policies in this regard are state-level schemes constituted under the IT for Masses initiative. The government has attempted to impart digital literacy among STs through two significant central-level schemes, i.e., IT for masses and DISHA. This part of the paper will analyse these schemes, their impact, and their consequences for STs in particular.

Further, limited formal education in schools prevents ST children from learning skills and concepts required to utilise ICTs meaningfully. Therefore, it is also crucial to understand how major education policy instruments of the government, such as the National Education Policy by Ministry of Human Resource Development (2020) and various educational infrastructure schemes, have fared in bringing ST students into formal education.

[1] The National Broadband Mission aims to provide internet connection to all villages in India by 2022. Under the mission the government aims to lay 3 million kilometres of optical fibre cable and to increase the tower density from 0.42 per thousand population to one tower per thousand population. The fiberisation is to be increased from the current 30% to 70%. It strives to achieve digital inclusion and empowerment through affordable broadband access to all.

3.1.1 Digital Literacy

a. IT for Masses: Marred by Opacity

The foremost initiative is the IT for Masses scheme by the Ministry of Electronics and Information Technology (n.d.) which aims to promote activities in ICTs for focus groups and areas for inclusive growth through various projects. Various projects under the scheme focus on providing STs with necessary IT skills to enable their financial mobility. These schemes are currently running in numerous states, including Himachal Pradesh and Maharashtra (Skill Reporter, 2019).

In November 2021, the Union Cabinet approved the provisions of mobile services in more than 7,000 villages across five states (Bhargava, 2021): Odisha, Maharashtra, Jharkhand, Chhattisgarh and Andhra Pradesh. Union Cabinet estimated that approximately 36 lakh tribals will benefit from this scheme. Several districts that fall under this scheme have an ST population greater than 50%, according to the 2011 census.

The Andhra Pradesh government, headed by CM YS Jagan Mohan Reddy, has recently been taking steps toward making internet services available across every tribal village through the Fiber Net Corporation. The state has paid almost 3 crore rupees to the Fiber Net Corporation to make the system available. Wireless internet services are available in several villages because of such efforts (Bandari, 2020).

A key issue with these schemes is the absence of quantifiable metrics on their progress and targets. The sole information readily available is that 1,42,694 STs have been trained under these schemes till 2019. The training was primarily to ensure that the people can effectively access e-governance services and that people can operate digital devices, browse the internet for information and send and receive emails (Times News Network, 2021). However, information on the beneficiary's demography, readiness to participate in the digital economy and future plans are unavailable. Without clear information from the government on the routine progress of these schemes, government accountability and transparency in the process have been missing. In the absence of transparency, the extent to which STs continue to suffer from digital illiteracy remains unclear.

b. DISHA: Low Representation and Persisting Exclusion

The Central Government has formulated Digital Saksharta Abhiyan [DISHA], or National Digital Literacy Mission [NDLM], to impart IT training to 52.5 lakh persons. The two broad objectives of this scheme are i) to teach a person to operate digital devices like mobile phones and tablets, send and receive emails, and search the internet for information and ii) to train citizens to access various e-governance services offered by the Government effectively.

A paltry 4% of the rural households in India have a computer, according to the latest NSSO survey on education (Gohain, 2020). More than 15 crore rural households are still sans a computer and can thus be considered digitally illiterate. Therefore, DISHA primarily targets the country's rural areas, which comprise a large population belonging to marginalised communities such as Scheduled Tribes. Evidence of this fact is found in the eligibility criteria for this program. This scheme applies only to rural areas, and preference is given to SCs, STs, minorities, women, and differently-abled persons (Ministry of Electronics and Information Technology, n.d.).

An assessment report by the Council for Social Development [CSD] has lauded this scheme for targeting a family with no digital literacy and providing training to one person in one family. However, the report flagged the lack of fulfilled targets in terms of extending digital literacy to the SCs and STs (Council for Social Development, 2018). In terms of beneficiary coverage, the report also observed that the educated groups were chief beneficiaries of the programme, thus suggesting the need to target adults with limited or no literacy. Government schemes are often predominantly utilised by the relatively privileged sections of the marginalised population, including upper castes and the middle and upper economic classes. In contrast, the individuals at the bottom end of the ladder receive limited coverage. Further, it is uncertain whether STs will be adequately represented in the scheme. According to the assessment report, the majority of respondents were from the General and OBC categories (40 per cent each), followed by SC (12 per cent) and ST (6.5 per cent). Inadequate representation of STs in digital literacy schemes can stagnate or potentially widen the digital divide between indigenous and non-ST populations. For STs, this means falling further behind other demographics in making the most of ICTs.

However, digital literacy alone will not prove effective if STs cannot access basic education. To that end, it is essential to analyse various policies that help the community with educational mobility. For this purpose, it is important to look at the National Education Policy.

3.1.2 Education of ST Children

Access to education is one of the most critical elements in bridging the digital divide. Lack of education has led the STs, especially children, to limited income opportunities, further impacting their ability to afford ICTs and fight digital exclusion. Therefore, access to quality education is one of the most crucial long-term solutions to ensure inclusive digital and social growth.

a. National Education Policy: Ignoring Social Realities

The National Education Policy of 2020 [NEP 2020] identified gaps in all levels of school education, especially at the secondary level. According to the NEP 2020, the overall enrolments in schools decline steadily from Grade 1 to Grade 12 for many Social and Economical Disadvantaged Groups [SEDGs], including STs. The high dropout rate of 22.3% of ST students, as per the survey data by UDISE 2017-18, continues to hinder achieving equality (Ministry of Human Resource Development, 2020).

According to a survey, students drop out of school because of family issues, child marriage, financial problems, taking care of siblings and lack of interest (Times News Network, 2022). NEP 2020 has been criticised for ignoring deep-rooted community taboos and social hindrances which hinder access to education for SEDGs, including STs (Rupavath, 2020). It has also been castigated for assuming that most students have access to mobile phones and tablet computers (Mathew, 2020). In the context of STs, various social realities hinder the meaningful attainment of education. These may include unhelpful attitudes of administrators impacting school admissions, difficulty in understanding regional languages used by non-tribals that leads to limited participation in classrooms, and alienation from a curriculum that gives limited attention to tribal culture and dignity. An education policy that tackles these issues is necessary to ensure onboarding and sustained utilisation of education facilities by tribal children.

b. Enhancing Education Infrastructure: Risks Compounding Failures

The Ministry of Tribal Affairs [MTA] has taken the lead in ensuring that relevant infrastructure for the education of ST children is available and functioning. The ministry has established Ashram Schools in Tribal Sub-Plan areas (Press Information Bureau, 2019). Under this scheme, funds are provided to State Governments for the construction of Ashram schools. The MTA has also intervened in establishing Eklavya Model Residential Schools [EMRS] with a capacity of 480 students per school (Ministry of Tribal Affairs, n.d. a). These schools aim to address the problem of the low enrolment of ST students in remote areas of India.

The Standing Committee on Social Justice and Empowerment (Empowerment Committee) had flagged the concerns of sub-standard food, overcrowded schools and hostels, death of children due to scorpion/snake bites and illness, and high dropouts at the secondary level in the Ashram Schools (Ghose, 2014). Another Empowerment Committee noted the following as impediments to the success of these schemes: slow work of establishing EMRS, lack of recruitment of teachers due to delay in notifying recruitment rules by States/UTs, lack of participation in training programs by teachers and children, and delayed procurement of tablets even during the COVID pandemic (Standing Committee on Social Justice and Empowerment, 2022). These structural, governance, and operational failures pertaining to the building of schools, ensuring the well-being of students, and limited buy-in from teachers can lead to tribal students being denied their right to education. This failure impacts them on two broad levels. Firstly, it broadens the education digital literacy divide between tribal and non-tribal children, and secondly, it affects their future earning prospects in high-skilled jobs, which require relevant educational qualifications.

c. Employment and Entrepreneurship

Employment brings disposable income into the hands of STs. Without employment, individuals can be deprived of income and consequently from accessing digital technologies, thus widening the digital divide. According to the National Policy for Skill Development and Entrepreneurship, India aims to train 402.87 million citizens by 2022. According to the policy, "special focus will be given to the inclusion of scheduled castes & scheduled tribes, minorities, differently-abled, etc." (Ministry of Skill Development and Entrepreneurship, 2015). The Jan Shikshan Sansthan [JSS] Scheme is implemented by the Ministry of Skill Development and Entrepreneurship. The course fees for JSS have been waived for the ST candidates (Press Information Bureau, 2021). However, merely 6.19% of STs are covered under the JSS scheme (Standing Committee on Labour, Textile and Skill Development, 2022). Further, the Standing Committee on Labour, Textiles and Skill Development has noted consistently low budget allocations for JSS and called upon the Government to seek requisite fund allocation (Standing Committee on Labour, Textile and Skill Development, 2022).

The government has also issued a scheme for equity support to the National/State Scheduled Tribes Financial Development Corporation (Ministry of Tribal Affairs, n.d b). This corporation is for the economic upliftment of STs and provides financial assistance at interest varying between 4% to 8% per annum. Some of the sanctioned schemes by the corporation are dairy, poultry, irrigation, horticulture, and furniture (Standing Committee on Social Justice and Empowerment, 2021). Under the scheme of vocational training, grants will be disbursed for organising vocational training (Ministry of Tribal Affairs, 2009). The Ministry has also issued guidelines for institutional support, development and marketing of tribal products to provide

comprehensive support for tribals (Ministry of Tribal Affairs, 2014).

There is no state-wise allocation of funds made by the Ministry of Tribal Affairs for institutional support for marketing tribal produce. From 2014-19, only 8 states raised a demand for allocation of institutional support from the MTA (Saruta, 2019), and many failed to utilise the released funds. While such schemes have boosted the production and promotion of tribal produce, the effects have not been significant. The tribal communities are isolated from such schemes due to lack of exposure and are unable to avail benefits from them due to lack of awareness (Muniraju & Sirisha, n.d.). Additionally, predatory brokers often attempt to manipulate members of these communities.

Financial inclusion refers to the process by which a particular person or community can access financial services. While the growth of digital payments has been astounding, marginalised sections of society, such as the STs, still suffer on account of being disconnected from the financial ecosystem. Thus, they are unable to save for homes or start small businesses. Moreover, they are also denied the benefits of financial tools of credit, payment, insurance and savings, due to which they cannot move out of poverty. According to Asli Demirguc-Kunt, the Director of Development Policy and Chief Economist of the Finance and Private Sector Network, “lacking a bank account often forces savers to resort to risky measures, such as putting money under the mattress” (Gupta, 2020).

The few years have seen efforts towards the inclusion of marginalised communities in the fintech ecosystem. For instance, several newly-launched apps allow people to share access to the Unified Payments Interface [UPI] or their cards with people in a secure and trustworthy environment. A person using UPI for the first time is likely to be handheld by a close acquaintance. However, eventually, the system will meaningfully facilitate activities in the digital market for those who do not get paid into a bank account and individuals who rely heavily on cash.

Therefore, the primary reasons for the limited impact of demand-side initiatives include over-reliance on schemes; central and state governments have been launching and promoting schemes for the welfare of STs. However, most of these schemes have no legislative backing and therefore impose limited accountability on the government. Secondly, running expansive schemes requires robust implementation mechanisms. However, the mechanisms remain poor as administrative coordination is lacklustre and progress is tracked inefficiently. The Public Financial Management System, which implementation agencies use to keep account of the disbursed funds, is fraught with issues of long loading times, user interface, intuitiveness and feedback mechanisms. Finally, policymakers have failed to address the ST community’s core problems that keep them from access to quality education and employment, i.e., lack of awareness, manipulation by predatory brokers, taboos, and apprehension of outsiders, To address these, STs must be proactively engaged in digital inclusion initiatives; rather than being limited to passive beneficiaries. For STs, this translates into long waits for gaining access to skill training, education and digital tools, continued exclusion from the digital economy, persistence of social realities that deter their socio-economic mobility, and little to no buy-in of the tribals themselves in the planning and implementation of schemes meant for them.

INTERNATIONAL PERSPECTIVE: HOW ARE OTHER COUNTRIES DEALING WITH THE ISSUE?

We have selected Canada, Australia and the United States because of the presence of a significant percentage of indigenous communities there. Further, these countries have been particularly proactive in the digital inclusion efforts of indigenous communities/tribals.

4.1. Australia: Leveraging Partnerships

In Australia, the National Indigenous Australian Agency has attempted to resolve the issue of limited access to digital information (Mccallum & Papandrea, 2009) by developing the Indigenous Digital Inclusion Plan. The plan focuses on three main areas for digital inclusion, i.e., access, affordability, and digital ability (National Indigenous Australians Agency, 2021a). Further, the Australian Digital Inclusion Alliance, a shared initiative has partnered with over 500 business, government, academic, and community organisations to accelerate action on digital inclusion (Australian Digital Inclusion Alliance, 2021).

This plan has had a significant impact on its target populace. Since 2014, Australia's overall digital inclusion score has improved by 3.8 points, from 52.7 to 56.5. In 2016-17, Australia's score rose by 2.0 points, from 54.5 to 56.5. Furthermore, Commonwealth Bureau of Communications and Arts Research data suggests that the lowest-income households in Australia are now spending almost 10% of their incomes on internet and communications services (Thomas, 2019).

The bureau have identified that around 37 Government initiatives and 29 private and community sector programs have been introduced in Australia, which follow a fragmented approach to addressing digital inclusion (Australian Digital Inclusion Alliance, 2020). While the plan focuses on three main areas for digital inclusion (National Indigenous Australians Agency, 2021b), it still needs to shift its approach to include partnerships with First Nations people. It must also include resource data collection on progress made for evaluation of measures committed in the plan (Australian Digital Inclusion Alliance, 2021).

4.2. Canada: Change Through Co-development

In Canada, diverse indigenous peoples face challenges and opportunities associated with developing, deploying, and adopting new and emerging ICTs (McMahon, 2020). To address the supply- and demand-side challenges of the digital divide, interventions co-developed with Indigenous peoples, such as the First Mile Connectivity Consortium (Firstmile, n.d.) and Piikani Cultural And Digital Literacy Camp Program (Jordan, 2018), have been introduced.

The Firstmile project has allowed Canadian federal policymakers to learn about the remote and rural first nation communities' needs related to broadband networks and ICT (Whiteduck et al., 2012). The government also intends to provide high-speed internet for all through broadband funding programs (Government of Canada, 2022). Through the co-development of a digital inclusion policy with the Indigenous communities, the government has formulated better policies to identify and incorporate the voices of the marginalised individuals (McMahon, 2020).

4.3. United States of America: Backed by Legislative Mandates

In the USA, digital inclusion has been promoted through the implementation of legislative Acts. The Digital Equity Act (National Immigration Forum, 2021) as well as Tribal Broadband Connectivity Program (National Telecommunications and Information Administration, 2022) provide digital access to Tribal communities in the country. The Digital Equity Act aims to promote digital equity by increasing broadband adoption and accessibility and thereby promoting digital inclusion (ibid.). On the other hand, the Tribal Broadband Connectivity Program provides grants to Native American tribes and tribal organisations for the deployment and adoption of broadband service on tribal land (National Telecommunications and Information Administration, 2022). The impact of the Tribal Broadband Connectivity Program has been significant. It has successfully provided grants to expand access to and adoption of broadband service on tribal Lands or programs that have promoted the use of broadband to access remote learning, telework, or telehealth (Taglang, 2021).

CONCLUSION AND RECOMMENDATIONS

Essentially, supply-side interventions like Bharatnet have had limited success in increasing internet access for STs, while ST specific interventions remain absent. On the demand side, challenges like education and employment have had little success due to opaque policies, lack of statutory backing, and lack of focus on STs. In this context, it becomes relevant for the government to tackle these challenges with the help of India's domestic capacities and learnings from countries with indigenous populations like the US, Australia, and Canada.

Various countries are taking innovative approaches ranging from including private stakeholders to involving the community directly to support policy formulation. India can learn from both its domestic experiences and those of other countries to fine-tune its approach to the digital inclusion of STs. Some recommendations for the government are:

1. Entering into long-term and meaningful partnerships with private entities to develop internet infrastructure. Policymakers may take inspiration from the Australian experience, and look to undertake a shared initiative that brings together businesses and the government on a common platform. This sort of initiative can help build digital infrastructure, wherein the government can share the expenses or the profits through a public-private partnership.
2. Comprehensive guidance notes for implementing infrastructure plans and tracking progress need to be developed to ensure consistent penetration of the internet. Additionally, policymakers need to facilitate effective monitoring and evaluation of schemes.
3. Certain schemes must be replaced, complemented, or accompanied by codified law to ensure stringent accountability and transparency mechanisms. Currently, instruments like policies and schemes do not impose mandatory responsibilities on the government. Codifying the same into law will ensure that authorities are held responsible before the legislature and judiciary. The United States experience sheds light on the role of legislative steps in advancing digital inclusion.
4. The governance architecture for schemes needs to improve. The government has made significant strides in GovTech through initiatives like the National Digital Health Mission and India Stack. Administrators must strengthen mechanisms for welfare schemes of STs through innovative GovTech solutions.

5. Financial inclusion of STs can enhance their earning, spending, and saving opportunities, as well as increase access to capital. Policymakers can leverage modern fintech solutions to advance this effort.

6. Crucially, policymakers must ensure the buy-in of STs to their digital inclusion efforts. Canada provides a brilliant example of the same. The government involves indigenous communities, through their representatives or organisations throughout the digital inclusion efforts, including the policymaking and implementation.

BIBLIOGRAPHY

Australian Digital Inclusion Alliance. (2020). *A National Digital Inclusion Roadmap.* ADIA Position Paper. https://treasury.gov.au/sites/default/files/2020-09/115786_AUSTRALIAN_DIGITAL_INCLUSION_ALLIANCE.pdf.

National Indigenous Australians Agency. (2021a, November 1). *Australian Digital Inclusion Alliance submission on the Indigenous Digital Inclusion Plan [Letter]*. https://digitalinclusion.org.au/wp-content/uploads/2022/02/idip-sub-adia.pdf.

Bandari, P. K. (2020, November 22). Andhra Pradesh: Govt. contemplates to bring internet connectivity to every Tribal Village. *The Hans India.* https://www.thehansindia.com/andhra-pradesh/andhra-pradesh-govt-contemplates-to-bring-internet-connectivity-to-every-tribal-village-657750.

Bhargava, Y. (2021, November 18). Mobile connectivity project for 7,000 villages to benefit tribal communities. *The Hindu.* https://www.thehindu.com/news/national/other-states/mobile-connectivity-project-for-7000-villages-to-benefit-tribal-communities/article37568249.ece.

BL Kochi Bureau. (2022, April 13). Jio Kerala to set up 4G network by 15% this fiscal. *The Hindu BusinessLine.* https://www.thehindubusinessline.com/info-tech/jio-kerala-to-step-up-4g-network-by-15-this-fiscal/article65317421.ece.

Cleartax. (2022, April 28). https://cleartax.in/s/bharat-net-project.

Council for Social Development. (2018). *Digital Empowerment of Citizens Through Digital Literacy Training.* http://csdindia.org/wp-content/uploads/2018/01/CSD_DISHA_Report.pdf.

Digital Equity Act of 2021. S. 2018, 117th Cong (2021). https://www.govinfo.gov/app/details/BILLS-117s2018is.

Digital India. (n.d). https://www.digitalindia.gov.in/di-initiatives/infrastructure.

DoT. (2018). *National Digital Communications Policy, 2018.* https://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf.

Firstmile. (n.d.). http://firstmile.ca/.

Gairola, M., & Srivas, A. (2019, January 8). PMO anger over Bharatnet Project reveals Shoddy State of Broadband initiative. *The Wire.* https://thewire.in/government/pmo-bharatnet-project-shoddy-state-of-broadband-initiative.

Ghose, J. (2014). *Standing Committee Report Summary - Working of Ashram Schools in Tribal Areas [executive summary].* PRS Legislative Research. https://prsindia.org/files/policy/policy_committee_reports/1393414764_SCR%20Summary-Working%20of%20Ashram%20Schools%20in%20Tribal%20Areas.pdf.

Government of Canada. (2022, April 22). *High-speed Internet for all of Canada.* https://ised-isde.canada.ca/site/high-speed-internet-canada/en.

Gohain, M. P. (2020, July 21). 23% of urban population has access to computers, only 4% of rural: survey. *Times of India.* https://timesofindia.indiatimes.com/india/23-of-urban-population-has-access-to-computers-only-4-of-rural-survey/articleshow/77075283.cms.

Gupta, P. (2020, December 25). Barriers to a cashless society in India. *BFSI Economic Times.* https://bfsi.economictimes.indiatimes.com/news/financial-services/barriers-to-a-cashless-society-in-india/79950801.

Jordan, K. (2018, May 16). The Piikani Cultural and Digital Literacy Camp Program. *Internet Society.* https://www.internetsociety.org/blog/2018/05/the-piikani-cultural-and-digital-literacy-camp-program/.

Kar, A. (2022, February 1). Much delayed optical fibre project to be completed by 2025. *The Hindu Businessline.* https://www.thehindubusinessline.com/info-tech/much-delayed-optical-fibre-project-to-be-completed-by-2025/article64961471.ece.

Mathew, A. (2020, August 1). Modi Govt's new education policy is nothing but a national exclusion policy, say experts. *The National Herald.* https://www.nationalheraldindia.com/india/modi-govts-new-education-policy-is-nothing-but-a-national-exclusion-policy-say-experts.

Mccallum, K. & Papandrea, F. (2009). Community business: The internet in remote Australian Indigenous communities. *New Media & Society,* 11(7), 1230–1251. https://www.researchgate.net/publication/249689690_Community_business_The_internet_in_remote_Australian_Indigenous_communities.

McMahon, R. (2020). Co-developing digital inclusion policy and programming with Indigenous partners: interventions from Canada. *Internet Policy Review*, 9(2). https://policyreview.info/articles/analysis/co-developing-digital-inclusion-policy-and-programming-indigenous-partners.

Ministry of Electronics and Information Technology. (n.d.). https://www.meity.gov.in/content/it-masses-0.

Ministry of Human Resource Development. (2020). *National Education Policy 2020.* Government of India. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.

Ministry of Skill Development and Entrepreneurship. (2015). *National Policy for Skill Development and Entrepreneurship.* https://www.msde.gov.in/sites/default/files/2021-12/Level%20Jumping%20Order%20Policy%20Wing%20-Division.pdf.

Press Information Bureau. (2021, July 26). *Promotion of skill development of tribal community [press release].* https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1739172.

Ministry of Tribal Affairs. (n.d. a). *Eklavya Model Residential Schools (EMRS).* https://tribal.nic.in/EMRS.aspx.

Ministry of Tribal Affairs. (n.d. b). *Equity support to NSTFDC/STFDC.* https://tribal.nic.in/writereaddata/Schemes/EquitysupporttoNSTFDC.pdf.

Ministry of Tribal Affairs. (2009). *Vocational Training in Tribal Areas.* https://tribal.nic.in/writereaddata/Schemes/VTCGuidelinesAndApplicationFormat.pdf.

Ministry of Tribal Affairs. (2014, April 17). *Guidelines for the Scheme "Institutional Support for Development and Marketing of Tribal Products/ Produce".* Government of India. https://tribal.nic.in/writereaddata/Schemes/3-1MJGuidelines.pdf.

Press Information Bureau. (2019, July 8). *Establishment of Ashram Schools in tribal sub-plan areas* [press release]. https://pib.gov.in/PressReleasePage.aspx?PRID=1577734.

Muniraju & Sirisha, K. (n.d.). *Local To Global: Promotion Of Tribal Products.* NITI Aayog. https://www.niti.gov.in/local-global-promotion-tribal-products.

National Immigration Forum. (2021, December 15). *Bill Summary: Digital Equity Act of 2021.* https://immigrationforum.org/article/bill-summary-digital-equity-act-of-2021/.

National Indigenous Australians Agency. (2021b). *Indigenous Digital Inclusion Plan* [discussion paper]. https://www.niaa.gov.au/indigenous-affairs/economic-development/indigenous-digital-inclusion-plan.

National Telecommunications and Information Administration. (2022, May 13). *FACT SHEET: Biden-Harris Administration's "Internet for All" Initiative: Bringing affordable, reliable high-speed internet to everyone in America.* https://www.ntia.doc.gov/other-publication/2022/fact-sheet-biden-harris-administration-s-internet-all-initiative-bringing.

Nisar, F., & Nabi, H. (2022, February 28). After 3 Lockdowns and a Digital Divide, J&K's Tribal Children Unlikely to Return to School. *The Wire.* https://thewire.in/education/after-3-lockdowns-and-a-digital-divide-jks-tribal-children-unlikely-to-return-to-school.

OECD. (2005). Regulatory Reform as a Tool for Bridging the Digital Divide. OECD Digital Economy Papers, No. 90. https://doi.org/10.1787/232862231573.

Press Information Bureau. (2015, January 13). *Idukki in Kerala Becomes the First District of India with Complete Rural Broadband Coverage* [press release]. https://pib.gov.in/newsite/PrintRelease.aspx?relid=114594.

Rao, S. S. (2005). *Bridging digital divide: Efforts in India.* Telematics and informatics, 22(4), 361–375.

Rupavath, R. (2020, October 23). New education policy 2020: Did it forget tribal students? *The NewsClick.* https://www.newsclick.in/new-ducation-policy-2020-did-forget-tribal-students.

Sahu, D. (2020, August 9). Great Digital Divide: Here's how online education poses massive challenges in rural Odisha. *The New Indian Express.* https://www.newindianexpress.com/states/odisha/2020/aug/09/great-digital-divide-heres-how-online-education-poses-massive-challenges-in-rural-odisha-2181055.html.

Saruta, R. S. (2019). *Institutional Support for Marketing of Tribal Produce [Lok Sabha Unstarred Question No. 1348].* Ministry Of Tribal Affairs, Government Of India. http://164.100.24.220/loksabhaquestions/annex/172/AU1348.pdf.

Sen, S. (2021). *Digital India.* MyGov. https://indiancc.mygov.in/wp-content/uploads/2021/08/mygov-10000000001596725005.pdf.

Siva, G. (2021, November 21). Over 1.200 tribal villages in Andhra Pradesh to get 4G services. *Times of India.* https://timesofindia.indiatimes.com/city/vijayawada/250-towers-to-equip-1218-tribal-villages-with-4g/articleshow/87823245.cms.

Skill Reporter. (2019, September 8). *1 lakh youth to get training under 3 Skill development schemes in Himachal: State Govt.* https://www.skillreporter.com/2019/09/news/skilldevelopment/1-lakh-youth-to-get-training-under-3-skill-development-schemes-in-himachal-state-govt/.

Standing Committee on Labour, Textile and Skill Development. (2022). *Demands for Grants [Thirty-Second Report]*. Lok Sabha Secretariat. http://164.100.47.193/lsscommittee/Labour,%20Textiles%20and%20Skill%20Development/17_Labour_Textiles_and_Skill_Development_32.pdf.

Standing Committee on Social Justice and Empowerment. (2021). *Demands for Grants [Nineteenth Report].* Lok Sabha Secretariat. http://164.100.47.193/lsscommittee/Social%20Justice%20&%20Empowerment/17_Social_Justice_And_Empowerment_19.pdf.

Standing Committee on Social Justice and Empowerment. (2022). *Review of Functioning of Eklavya Model Residential Schools (EMRS) [Thirty-Fourth Report].* Lok Sabha Secretariat. http://164.100.47.193/lsscommittee/Social%20Justice%20&%20Empowerment/17_Social_Justice_And_Empowerment_34.pdf.

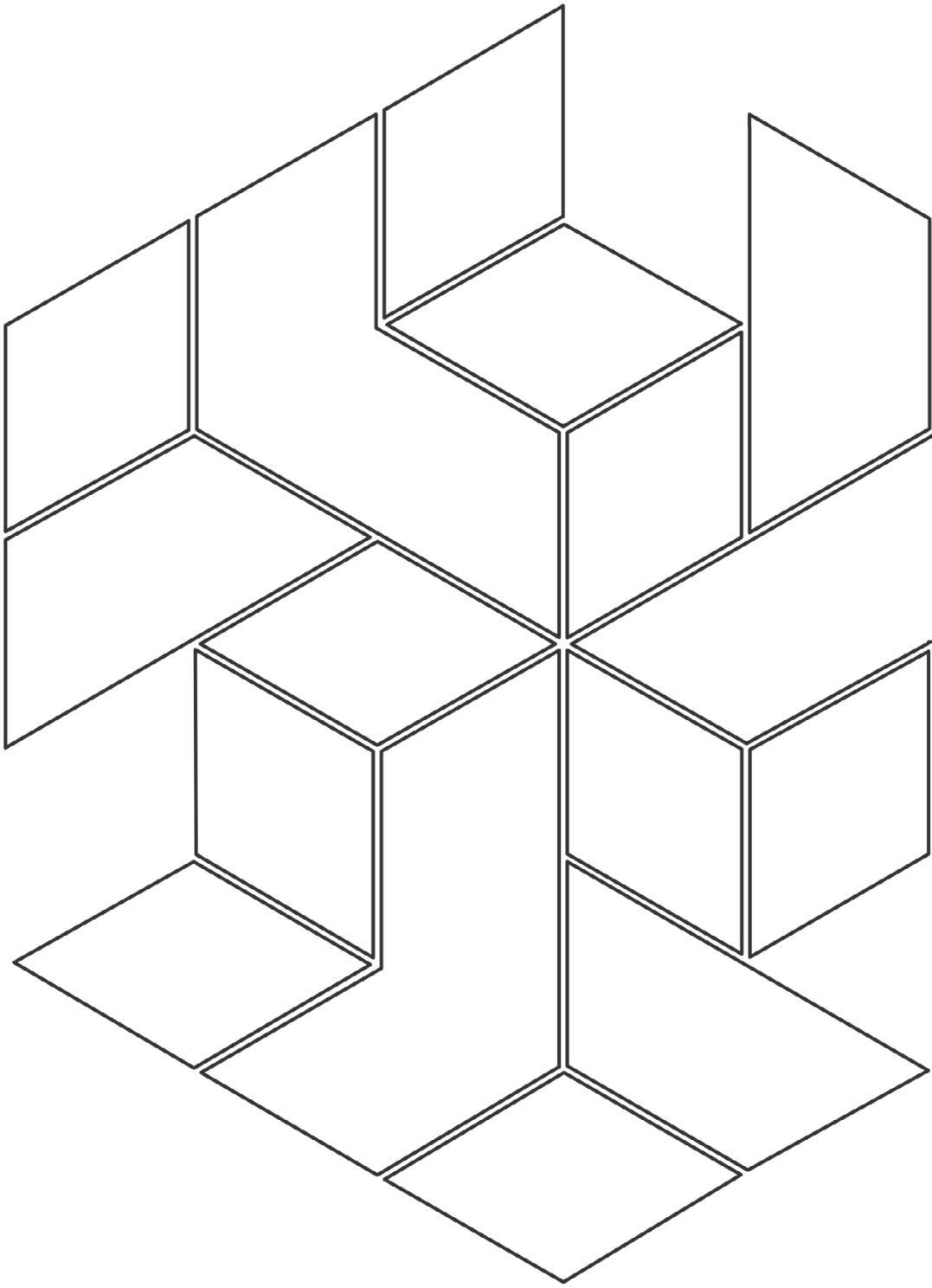
Taglang, K. (2021, June 11). $1 billion for broadband infrastructure on Tribal Lands. *Benton Foundation.* https://www.benton.org/blog/1-billion-broadband-infrastructure-tribal-lands.

Thomas, J. (2019, April 9). Lack of internet affordability may worsen Australia's digital divide: New report. *The Conversation.* https://theconversation.com/lack-of-internet-affordability-may-worsen-australias-digital-divide-new-report-81823.

Times News Network. (2021, August 31). Improve net connectivity in remote areas: Tribal group. *Times of India.* https://timesofindia.indiatimes.com/city/goa/improve-net-connectivity-in-remote-areas-tribal-group/articleshow/85779901.cms.

Times News Network. (2022, February 6). Kerala: School dropout among tribal students continues unabated. *Times of India.* https://timesofindia.indiatimes.com/city/kochi/school-dropout-among-tribal-students-continues-unabated/articleshow/89375509.cms.

Whiteduck, T., Beaton, B., Burton K., & O'Donnell, S. (2012). *Democratic Ideals Meet Reality: Developing Locally Owned and Managed Broadband Networks and ICT Services in Rural and Remote First Nations in Quebec and Canada* [Keynote paper]. Community Informatics Research Network (CIRN) Conference, Prato, Italy. http://firstmile.ca/wp-content/uploads/2015/03/2012-CIRN-paper.pdf.



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