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# **A LEGAL ANALYSIS IMPACT OF INDIAN STANDARD TIME IN NORTH EAST STATES OF INDIA**

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**Keywords:** Indian Standard Time, North Eastern States, Article 21 PIL, Biological Clock, Solar Time

## **ABSTRACT**

India operates on a single time zone Indian Standard Time (IST) at UTC+5:30 fixed to the 82.5 degree East meridian passing through Mirzapur, Uttar Pradesh. While this framework provides administrative uniformity, it creates two hours temporal mismatch for several sister states like Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura and the Andaman and Nicobar Islands where sunrise occurs earlier than official working hours. This misalignment causes chronic disruption of the biological clock (circadian rhythm) of approximately 45 million residents, implicating the right to life under Article 21 of the constitution of India.

On March 7, 2017, a Public Interest Litigation (PIL) was filed before the Gauhati High Court seeking a separate time zone for the north eastern region. The court dismissed the petition as a matter within the executive domain. This paper critically defends the constitutional basis of the demand, argues that the single time zone violates Article 21, evaluates the practical complication of a dual time zone and proposes an alternative solution shifting India's reference meridian for 82.5 degree to 90 degree East, preserving national unity while meaningfully redressing the constitutional development.

## **I. INTRODUCTION**

India stretches approximately 3,000 km from Gujarat to Arunachal Pradesh spanning roughly 30 degrees of longitude. Unlike large nations such as the United States, Russia or Australia which maintain multiple time zones, India operates on a single standard time. IST, fixed at UTC+5:30 and calibrated to 82.5 degree East meridian, was inherited from colonial administration and retained post-independence for uniformity. However, this choice imposes a severe and

medically documented cost on residents of north eastern region.

The seven Sister States and Andaman and Nicobar Island experience sunrise between 4:00 AM and 4:30 AM during summer and sun set as early as 4:30 to 5:00 PM IST during winter. Yet official working hours offices, schools, courts, banks begin at 10:00 AM IST. Natural day light is wasted in the early hours and activity extends into darkness. This structural displacement of solar time from administrative time disrupts the circadian rhythm of millions of citizens not by individual choice but by the state policy.

This paper is organized as follows: Section II examines the constitutional framework under Article 21. Section III documents the empirical harm. Section IV analyses the 2017 Gauhati High Court Judgement. Section V weighs the practical complications of dual time zone against the status quo. Section VI proposes the 90 degree East solution. Section VII assesses sectoral impacts. Section VIII concludes with recommendations.

## **II. CONSTITUTIONAL FRAMEWORK: ARTICLE 21 AND THE RIGHT TO LIFE**

Article 21 of the constitution guarantees that no person shall be deprived of life or personal liberty except according to procedure established by law. Since *Menaka Gandhi vs Union of India* 1987 livelihood a clean environment and access to basic necessities ( *paschim Banga Khet Mazdoor Samity* 1996) have all been located within Article 21

### **A. Circadian Rhythm as a Biological Right**

The human body circadian rhythm synchronizes physiological process sleep, hormone secretion, metabolism, cardiovascular activity, and cognition with the 24 hour solar cycle through light exposure. A two hour chronic displacement between biological time and official time constitutes chronologist term social jet lag a medically documented condition associated with metabolic disorders, cardiovascular disease, depression, reduced cognitive performance and compromised immunity. For the northeastern population this condition is state imposed and unavoidable. When state policy predictably and systematically impairs the health of millions, article 21 is engaged

### **B. State Obligation under Article 21**

The doctrine of substantive due process evolved from *Menaka Gandhi*, requires that any state action or structural inaction causing irreparable harm to life and personal liberty be subjected

to proportionality review. A new time zone policy that chronically damages the health of 45 million citizen when a less restrictive alternative exists fall below the constitutional minimum demand by Article 21 read with Article 14. the state interest is administrative uniformity while legitimate must be weight against the constitutional cost of the biological deprivation it imposes

### III. EMPIRICAL EVIDENCE OF HARM

State	Summer (IST)	Sunrise	Winter (IST)	Sunset	Longitude (°E)	Mismatch
Arunachal Pradesh	4:00 AM		4:30 PM		94–97°	2 hrs
Assam	4:30 AM		5:00 PM		90–92°	1.5 hrs
Manipur	4:30 AM		4:50 PM		93–94°	1.5 hrs
Meghalaya	4:45 AM		5:10 PM		91–92°	1.5 hrs
Mizoram	5:00 AM		5:00 PM		92–93°	1.5 hrs
Nagaland	4:30 AM		4:50 PM		93–95°	1.5 hrs
Tripura	4:45 AM		5:10 PM		91–92°	1.5 hrs
Andaman Islands	4:30 AM		5:00 PM		92–93°	1.5 hrs

Table 1: approximate sunrise / sunset times ins North Eastern Status Under IST the documented consequence of this mismatch are multidimensional:

- Disruption of biological clock causing sleep deprivation, fatigue and chronic social jet lag among workers and students
- Loss of two hours of productive mooning daylight while official hours extent into unlit evenings.
- Higher electricity consumption due to early nightfall imposing unnecessary economic cost on house hold and the state
- Increased road accidents and crime risk in early evening darkness during winter months.
- Adverse impact on agricultural communities whose labour rhythms are tied to natural light misaligned with market and administrative home
- Psychological stress arising form a permanent mismatch between solar reality and Indian standard time a condition enforced not by the individual behaviour but by law

## **IV. THE GAUHATI HIGH COURT PIL (2017) CRITICAL ANALYSIS**

### **A. The Petition**

On March 7, 2017 PIL was filed before the Gauhati High Court seeking a writ of mandamus directing the Union of Indian to implant a separate time zone for Seven Sister States. The parties argued that the continuance of IST violates the fundamental rights of the north eastern states resident under Article 14, 19, and 21 of the constitution

### **B. The Courts Reasoning and its Critique**

The court dismissed the petition on two grounds first that the standard time is exclusively within the executive domain of the Union Government and second that a high level committee had already examined the issue and its recommendations had been accepted by the government. The court held the petition lacked merit as a settled administrative question

The reasoning is constitutionally inadequate. The doctrine of substantive due process under article 21 as evolved since Menaka Ganhi requires the court to examine whether a state policy causing harm to life and liberty survives proportionality scrutiny the court did not conduct the inquiry. The acceptance of an expert committees report by the executive dose not immunize the policy form article 21 review executive actions remains subject to fundamental rights scrutiny.

Furthermore the liberal locus standi principles established in S.P Gupata vs Union of India (1982) for PIL matters required the court to engage with the merits of the petition rather than dismiss it on the grounds of executive deference. The petitioners represented 45 million citizen experiencing documented, systemic harm. Judicial abstention in such circumstances reference an overly deferential posture that is inconsistent with the Supreme Courts tradition of activist interpretation of Article 21

## **V. THE TWO TIME ZONE DEBATE : COMPLICATIONS AND COMPARISONS**

### **Complications of a Separate Time Zone**

- Transport and Logistics: Railways, aviation and interstate transport operates on a uniform national time table. A dual zone would require either a national transport time or comprehensive schedule revision of all cross zonal services.

- Administrative coordination: official correspondence, judicial orders, legislative sessions, and financial transactions crossing the time zone boundary would require explicit zone nation, increasing complexity.
- Reduced Operational Overlap : Stock exchanges, central government operations and financial institutions requiring simultaneous cross zone activity would experience reduced synchronized working hours
- Implementation cost: updating railway reservation, banking terminals court scheduling software, and government database to handle two zone would entail significant one time expenditure.
- Psychological Division: A formal temporal split could reinforce perceptions of regional separation, politically sensitive given the northeast historical context.

#### A. Complications of the Status Quo

These concerns must be weight against the constitution ongoing harm of the status quo. The status quo is itself a daily cost in health, productivity, electricity and safety born by 45 million citizens. Large federal nations including the United States, Russia, Australia, Canada and Brazil successfully manage multiple time zones across defence, financial markets and rail transport. China single zone policy, covering a territory similar in span to India,s longitude range is frequently cited as cautionary example where western residents face conditions analogous to India’s longitude range is frequently cited as cautionary example where western residents face conditions analogous to India’s north eastern. The complications of the second zone are administrative the complications of the status quo are constitutional.

### VI. THE PROPOSED SOLUTION: SHIFTING TO 90 DEGREE EAST MERIDIAN

Rather than creating a full dual time zone with a separate URC offset this paper proposed shifting Indians IST reference meridian form 82.5 degree East to 90 degree East this would advance IST by 30 minutes for UTC+5:30 to UTC+ 6:00 as a single nation unified

Parameter	Current IST (82.5°E)	Proposed IST (90°E)
UTC Offset	UTC+5:30	UTC+6:00
NE Sunrise (summer IST)	4:00–4:30 AM	4:30–5:00 AM

Parameter	Current IST (82.5°E)	Proposed IST (90°E)
NE Sunset (winter IST)	4:30–5:00 PM	5:00–5:30 PM
Gujarat Sunrise (summer IST)	6:00 AM	6:30 AM
Number of time zones	1	1 (half hour adjusted)
Administrative complexity added	Nil	Nil

Table 2: current IST vs Proposed IST

The 90 degree east meridian passed through or near the geographical centre of the northeastern region. A half hour advance bring sunrise times to approximately 5:00 to 5:30 AM IST for most north eastern states a physiologically workable range that eliminates the most severe effect of circadian disruption. Critically the solution maintains a single UTC offset for the entire country, avoiding all complications of a dual time zone no cross zone scheduling conflicts no zone specific court deadlines no dual time banking system and no psychological symbolism of national division

The 90 degree East reference also brings India's standard time into synchrony with Bangladesh UTC+6:00 facilitating cross border trade, banking, and transport coordination a practical economic benefit for the region. Implementation cost are minimal a onetime half hour adjustment across national system comparable in scope to the biannual timetable revision Indian Railway already undertakes

## VII. SECTORAL IMPACT ANALYSIS

### A. Indian Railways

Indian railways has historically maintained its own scheduling based on IST. The proposed half hour IST shift is administratively analogous to the biannual time table revisions Railway already undertakes and far simpler than managing two parallel scheduling system with separate UTC offsets. The National Train Enquiry System (NTES) platform display boards reservation infrastructure and booking system would require a onetime update rather than a permanent dual architecture. Cross border train alignment reducing coordination friction for passenger and freight service operating across the border at Petrapole, Agartala and Gede.

The historical precedent of Railway time in Britain where railways maintained a uniform time before national standardization demonstrates that institutions can adapt to time reforms when they are administrated as unified nation wide transition rather than bilateral exceptions. India's

railways as one of the worlds largest rail networks are institutionally equipped for this scale of administrative adjustment.

### **B. Defence and Security Forces**

Defence operations including the Indian Army, Navy, Air force, Border Security Force and Assam Rifles coordinate with UTC (Zuly Time) for all operation international proposes. The change in IST from UTC+ 5:3 to UTC+6:00 represents a 30 minute adjustment in the civil military interface revision of operational orders communication protocol and coordination matrices. This is technical exercise of execution not policy and is routinely managed by the armed force of muti time zone nations for larger than India. The northeastern theater would operationally benefit for better alignment of patrol schedules surveillance rotations and border operations with natural day light hours particularly during winter when current IST causes significant operational activity in near darkness.

### **C. Banking, Financial Service and RBI**

The Reserve Bank of India operates the Real Time Gross Settlement (REGS) and National Electronic Funds Transfer (NEFT) system on IST. A 30 minuets adjustment would require a one time re calibration of settlement window and cut off times operationally comparable to daylight savings time transition that banks in multiple countries manage biannually with no structural disruption. Cross border financial transactions with Bangladesh UTC+6:00 would become time tone synchronized providing a significant advantage for the northeaster economy where bilateral trade remittances and banking relationship with Bangaladesh are substantial. The stock exchange (BSE and NSE) which currently open at 9:15 AM IST would open at the equivalent of 9:15 AM under the adjusted tiem no material change for market participats.

### **D. Judiciary and Court Systems**

Courts across India would continue to operate under a single national time standard. Since there is no zone differential all matters of filing deadline limitation periods under the limitation act 1963 and enforcement of court orders would remain uniformly applicable nationwide without modification. The Supreme Court High court and subordinate courts in the northeastern states would benefit from the adjournment earlier effective daylight under 90 degree East alignment would better correspond to the biological alertness windows of judges, advocates and litigants, potentially improving the quality of judicial proceedings during morning sessions.

## VIII. CONCLUSION AND RECOMMENDATIONS

The continuance of IST based on 82.5 degree East meridian constitutes a systematic state created interface with the circadian health, productivity, safety and dignity of approximately 45 million resident of north eastern India. The constitutional basis of their grievance under Article 21 is well grounded in the jurisprudential tradition from Maneka Gandhi onward and the Gauhati High Court 2017 dismissal of the PIL while procedurally defensible reflects inadequate engagement with the substantive constitutional dimension of the issue.

A uniform national time zone while surviving legitimate administrative interest does not survive proportionality scrutiny under Article 21 when a less restrictive and equally administrative alternative shifting the IST reference to 90 degree East is available. This solution preserve national unity of time eliminates dual zone administrative complexity reduces the solar mismatch in the northeast from two hours to approximately one hour or less and is constitutionally sufficient to address the deprivation.

The practical complications of a second time zone are real but administrative the harm of the status quo is constitutional and ongoing. Large federal nations successfully manage time zone complexity there is no principle reason Indian cannot implement a half hour nationwide adjustment to restore a basic measure of biological justice to its eastern citizen.

### **Recommendations:**

- The Union Government should constitute a multidisciplinary committee of chronologists, economists, administrators, and north eastern civil society representatives to study the feasibility of shifting IST to UTC+6:00.
- Parliament should amend the Indian Standard Time act to provide statutory basis for any IST adjustment insulating the reform the executive arbitrariness.
- State governments of the Seven Sister States should in the interim shift local government office hours to 7:30 AM to 3:30 PM IST (as recommended by NIAS Bengaluru 2006) to partially redress the mismatch.
- The Supreme Court should in an appropriate PIL authoritatively declare that chronic state imposed circadian disruption without proportionate justification constitutes a violation of Article 21
- Railway banking defence and judiciary should prepare transition plans activatable within twelve months of any decision of the 90 degree East IST.

**JOURNAL ARTICAL:**

- 1) Lakhi Sharma and others, 'Necessity of Two Time Zones: IST-I (UTC + 5:30 h) and IST-II (UTC + 6:30 h) in India and its Implementation' (2018) 115(7) Current Science 1252

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**FOOTNOTES**

<sup>1</sup> Lakhi Sharma and others, 'Necessity of Two Time Zones: IST-I (UTC+5:30 h) and IST-II (UTC+6:30 h) in India and its Implementation' (2018) 115(7) Current Science 1252.

<sup>2</sup> Maneka Gandhi v. Union of India (1978) 1 SCC 248.

<sup>3</sup> Paschim Banga Khet Mazdoor Samity v. State of West Bengal (1996) 4 SCC 37.

<sup>4</sup> Till Roenneberg, 'Social Jetlag: Misalignment of Biological and Social Time' (2012) 7(4) Chronobiology International 1; see also K. Seetharaman, 'Rotation of Earth about its Own Axis and its Revolution around the Sun' (Research Gate, 2018) <<https://www.researchgate.net/figure/328491205>> accessed 2 May 2026.

<sup>5</sup> Sharma and others (n 1) 1253–1255.

<sup>6</sup> PIL No. (Filed March 7, 2017) Gauhati High Court (case number not reported in public domain).

<sup>7</sup> S.P. Gupta v. Union of India (1982) AIR 1982 SC 149.

<sup>8</sup> Sharma and others (n 1) 1258–1259.

<sup>9</sup> The Limitation Act, 1963 (Act 36 of 1963).

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**BIBLIOGRAPHY**

**A. Cases**

1. Maneka Gandhi v. Union of India (1978) 1 SCC 248
2. Paschim Banga Khet Mazdoor Samity v. State of West Bengal (1996) 4 SCC 37
3. P. Gupta v. Union of India AIR 1982 SC 149
4. PIL No. 111 of 2015, Guhati High court (decided March2017) <https://ghconline.gov.in/Judgment/PIL1112015.pdf> accessed 2<sup>nd</sup> may 2026
5. <https://indiankanoon.org/doc/1743022/>