https://capssindia.org/

CAPSS
CENTRE FOR AEROSPACE POWER AND STRATEGIC STUDIES

Occasional Paper

Comprehensive National Resilience: Turning the Whole-of-Nation Approach into a System

Measuring What the Nation Can Absorb

Gp Capt Akash Godbole



Comprehensive National Resilience: Turning the Whole-of-Nation Approach into a System

Measuring What the Nation Can Absorb

Gp Capt Akash Godbole



Centre for Aerospace Power and Strategic Studies

(CAPSS)

New Delhi

Contents

Sl No	Contents	Page Number
1.	Abbreviations	4
2.	Abstract and Key Findings	5-6
3.	Introduction	7-8
4.	Why the Scope of Defence Must Widen	8-9
5.	Defining Comprehensive National Resilience	9-11
6.	Measuring CNR	11-12
7.	WONA in Peace and in War	12-13
8.	The Gaps	13-15
9.	Making CNR Work Through Existing Tiers	15-17
10.	A Road Map	17
11.	Conclusion	17-18
12.	Notes	19-23
13.	About the Author	24

List of Abbreviations

Abbreviation	Expansion
AMCA	Advanced Medium Combat Aircraft
CAPSS	Centre for Aerospace Power and Strategic Studies
CCS	Cabinet Committee on Security
CNP	Comprehensive National Power
CNR	Comprehensive National Resilience
CR	Combat Resilience
DPC	Defence Planning Committee
NPCI	National Payments Corporation of India
NR	National Resilience
NSA	National Security Advisor
NSC	National Security Council
NSR	National Security Resilience
NSS	National Security Strategy
SPG	Strategic Policy Group
UPI	Unified Payments Interface
WONA	Whole-of-Nation Approach

Abbreviations Used Only in the Notes

Abbreviation	Expansion
API	Application Programming Interface
CLAWS	Centre for Land Warfare Studies
FICCI	Federation of Indian Chambers of Commerce and Industry
HMSO	His Majesty's Stationery Office
HQ IDS	Headquarters Integrated Defence Staff
IANS	Indo-Asian News Service
ISO	International Organization for Standardization
MP-IDSA	Manohar Parrikar Institute for Defence Studies and Analyses
NIIO	Naval Innovation and Indigenisation Organisation
NSCS	National Security Council Secretariat
PIB	Press Information Bureau
RBI	Reserve Bank of India
RIS	Research and Information System for Developing Countries

Comprehensive National Resilience: Turning the Whole-of-Nation Approach into a System

Measuring What the Nation Can Absorb

Abstract

India has adopted the whole-of-nation approach (WONA) in doctrine and in speech, and it has worked on individual projects. It has not yet become a system. This paper argues that the missing piece is a common measure of what the nation can absorb, and proposes Comprehensive National Resilience (CNR) as that measure. CNR asks each critical system two questions: how much of its essential function can it keep under attack, and how quickly can it recover? The paper explains why the defence must widen beyond the armed forces, defines CNR and sets out a six-measure matrix to apply it. It separates the work WONA does in peace from the work it does in war. It then identifies the gaps: no owner for delivery, no preparedness law for war, no standing role for the States, and functions split across agencies. It proposes no new agency. Policy would sit with the Strategic Policy Group, monitoring with the Cabinet Secretariat under a full-time CNR coordinator, and review with the Defence Planning Committee, backed by a preparedness law and a phased road map.

Keywords: Comprehensive National Resilience, Whole-of-Nation Approach, National Security Resilience, Preparedness Law, Strategic Policy Group

Key Findings

- **WONA has a place in doctrine but not yet a system.** It appears in joint doctrine, ministerial speeches and the Defence Forces Vision 2047. It has worked where leadership was committed and the task was clear. It lacks a measure, an owner, a legal basis for war and a defined role for the States.

- **Most targets now lie outside the armed forces.** Power, fuel, money, data and the networks that carry them can be reached without first defeating an army. If most targets lie outside the armed forces, so must most of the defence.

- **Resilience has to be built in, system by system.** A national response arrives after the first hours. What holds in those hours is what each bank, grid, port or refinery has built and practised in advance.

- **CNR gives the nation a common yardstick.** Each critical system declares the minimum service it will keep under attack and the time it needs to recover, measured to one national standard and tested in exercises. Four further measures explain the score: fallback depth, single-point dependence, physical protection and test record.

- **CNR and national security resilience are complementary.** One asks whether the nation can sustain its own effort. The other asks whether each targeted system can absorb the adversary's attacks.

- **WONA builds in peace and sustains in war.** Long programmes such as AMCA and a high-thrust aero-engine need decades of joint effort. War demands surge, endurance and a loop between the Services, industry and academia that turns failure into fixes in months.

- **The institutions already exist.** The Strategic Policy Group can set CNR policy, the Cabinet Secretariat can monitor it on the Gati Shakti pattern under a full-time coordinator, and the Defence Planning Committee can review surge and sustainment. A preparedness law and a standing role for the States would complete the structure.

Introduction

The phrase ‘whole-of-nation approach’ (WONA) has found a place in India’s military doctrine and strategic discourse. It has also worked on individual projects. But how would India know whether it would hold in war? At present, no one can say how much of the nation’s critical systems would keep working under attack, or how quickly they would recover. This paper proposes a measure for that, Comprehensive National Resilience (CNR), and argues that defining it is a strategic necessity.

On public record, the phrase is recent. In 2017, the Joint Doctrine of the Indian Armed Forces used it once, in a paragraph on indigenisation.[1] In July 2022, at Swavlamban, the Prime Minister called the whole-of-nation approach the need of the hour for defence.[2] In August 2025, the Raksha Mantri said national security had become “an issue of a whole-of-nation approach”.[3] The phrase has since entered the Joint Doctrine for Multi-Domain Operations[4] and the Defence Forces Vision 2047.[5]

In practice, if not in name, the approach has succeeded in a few cases. Ministries, laboratories, industry and the Services have built highway landing strips,[6] flown a military aircraft on blended bio-jet fuel[7] and fielded the BHISHM trauma care cubes.[8] But each success rested on committed leadership and a clear task. None was part of an institutional system that would hold at scale.

Operation Sindoor was a short campaign that ended on India’s terms. Yet, the Defence Secretary called it a reality check that had revealed capability gaps.[9] The Deputy Chief of the Army Staff noted that India’s population centres had not been seriously at risk this time, and that the next round would need far more air defence and counter-drone systems.[10] In a longer conflict, the strain would fall on cities, power grids, payment systems and factories. That is the test CNR is meant for.

Two terms need to be defined at the outset. A short conflict is one that can be fought with what the nation holds before it starts: standing forces, war wastage reserves and the mobilisation already planned. A conflict becomes protracted when it outlasts those reserves and has to be sustained by fresh production and the wider nation.

The Army is authorised to hold war wastage reserves for about 40 days of intense fighting.[11] Audits in 2015 and 2017 found holdings well short of that for many types of ammunition.[12] At Ran Samwad, the Raksha Mantri said India must be prepared whether a war lasts two months or five years.[13] On this

definition, Operation Sindoor was short. A conflict beyond two months, the lower end of that range, would be protracted.

The paper draws on official documents, parliamentary and press records and a few comparative cases, and is confined to open sources.

Why the Scope of Defence Must Widen

The idea behind WONA is old. During the two World Wars, the belligerents fought total wars: factories, farms, workers and soldiers were all part of the war effort. In the decades of peace that followed, defence was left to the armed forces. The threat was not. Today an adversary can reach a nation's power grids, banks and networks without defeating its army first.

John Warden mapped that reach. In 'The Enemy as a System' (1995), he described the adversary as a system.[14] His model placed leadership at the centre, then organic essentials, infrastructure, population and, on the periphery, the fielded military (Figure 1a). He argued that Air Power could strike all five rings simultaneously rather than sequentially. Leadership was the prize.

The model has aged. In Ukraine, strikes at the centre have mattered less than production, attrition and adaptation. Yet, the rings remain a useful map of what an adversary can reach, and they have widened.

Leadership depends on the networks that carry its decisions. Organic essentials are the services a nation cannot do without: power, fuel, food, money and data. Infrastructure is the networks that carry them: road, rail and air transport, ports, power grids and telecommunications. The population is contested through narratives as much as through weapons. Much of this can be reached through cyberspace, space-enabled systems or the information space, without an aircraft crossing the border.

Seen from the defender's side, the rings line up with three ideas in the literature. Whole of government is coordination among ministries and agencies.[15] Whole of nation extends the effort to industry, academia and infrastructure operators. Whole of society adds the citizen and public will.[16] Only the outermost ring belongs to the armed forces. The rest are run by government, industry, the States and society (Figure 1b).

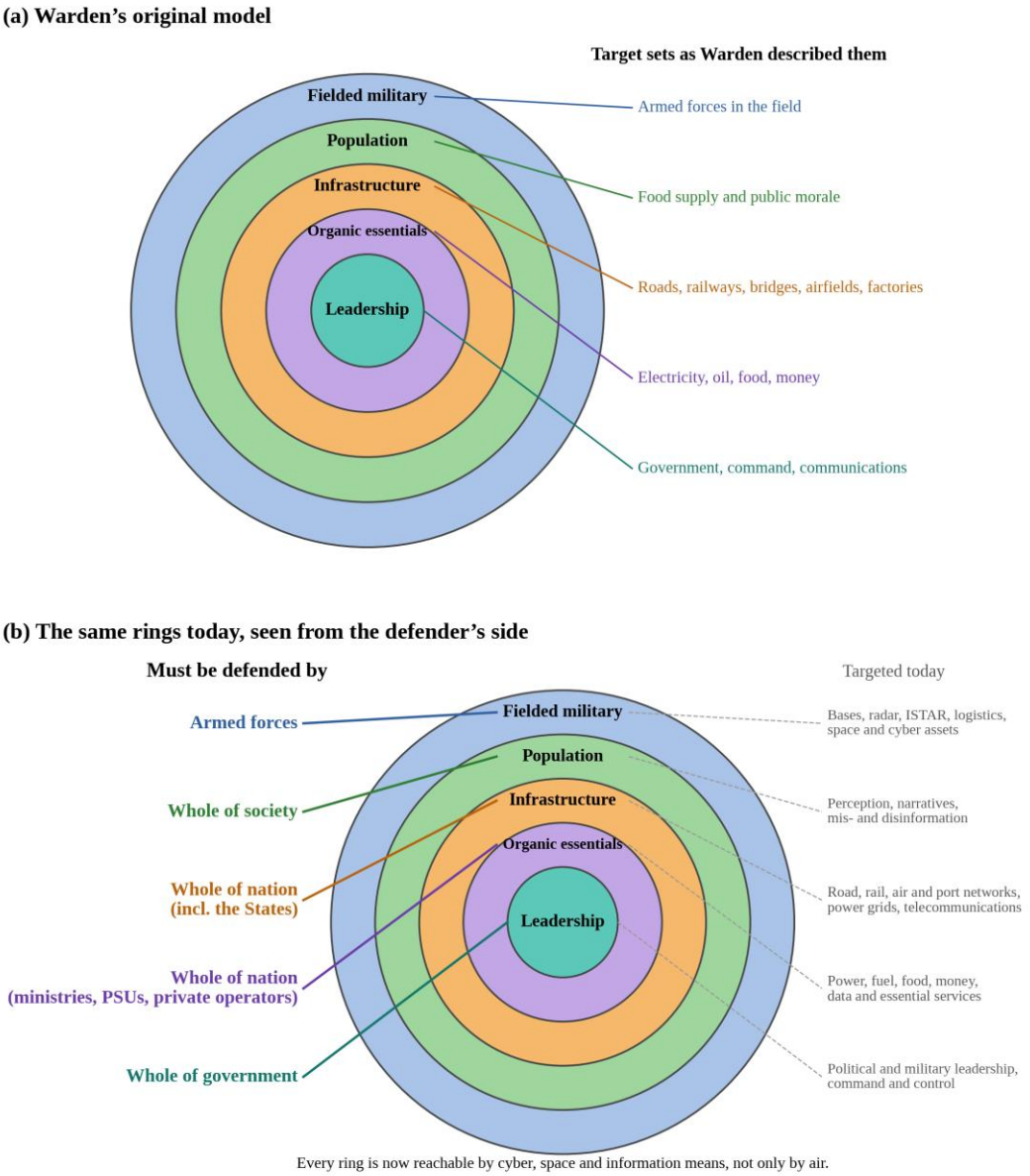

Figure 1: Warden's five rings (a) as he described them and (b) seen from the defender's side today – who must defend each, and what is now targeted. Source: author, adapted from Warden, 'The Enemy as a System'.

If most targets lie outside the armed forces, so must most of the defence. That is the case for WONA. It also makes the case for measuring resilience where the targets are.

Defining Comprehensive National Resilience

Comprehensive National Power (CNP), a concept from Chinese strategic thought now common in Indian writing,[17] captures what a nation can bring to bear. India has no matching measure of the blows it can take. The author coins the term CNR to fill that gap:

> *CNR is the ability of each critical system to keep a declared minimum of its essential function under attack, and to restore normal service within a declared time, measured to a common national standard and tested in national exercises.*

Consider a bank under a sustained denial-of-service attack. A national response matters, but it arrives after the first hours. What keeps the financial services running in those hours is whether the bank has built its own fallbacks: whether backup sites, offline modes and alternate payment channels exist, and whether recovery has been practised. Response can be ordered from the top. Resilience cannot. It has to be built into each system in advance.

Business continuity practice offers the two core measures used here: a minimum level of service and a recovery time objective.[18] What CNR adds is a common national standard, set against what an adversary would target.

The National Maritime Foundation has approached the same problem from the other end.[19] Its framework of National Security Resilience (NSR) asks whether India's economic, industrial and human base can sustain a long war, and it calls for a National Security Resilience Agency to keep replacement ahead of attrition.

The two ideas are complementary. NSR asks whether the nation can sustain its own effort. CNR, which comes from the targeting side, asks whether each system can absorb the adversary's attacks. Measured system by system, CNR could give NSR a number that can be tracked over time.

CNR works at three levels. At the system level, each operator – a bank, a refinery, a grid, a port – declares its minimum service and recovery time, and tests them. At the sector level, the regulator or ministry sets the standard for its sector and aggregates the results. At the national level, the results roll up into one picture of what the nation can absorb, sector by sector, against a stated adversary scenario.

India's pharmaceutical industry shows why the national level matters. India had supplied over 7.2 crore doses of COVID-19 vaccine to 94 countries and two UN entities by November 2021.[20] Yet, the same industry drew about two-thirds of its imported bulk drugs (active pharmaceutical ingredients) and intermediates from China.[21] The strength added to CNP. The dependence beneath it was a CNR weakness.

The Unified Payments Interface (UPI) shows the same tension in the digital domain. Launched by the National Payments Corporation of India (NPCI) under the Reserve Bank's oversight, and now joined by more than 700 banks, it handled about 2,000 crore transactions a month in 2025–26.[22] That success also made it critical. In March and April 2025, UPI suffered a run of outages, the longest on 12 April.[23] The longest was caused not by an attack but by a flood of status-check requests from member banks that overloaded the platform.[24] An adversary able to produce a similar overload would achieve the same disruption.

Some pieces of CNR already exist. Critical information infrastructure is protected under Sections 70 and 70A of the Information Technology Act.[25] The Reserve Bank has required banks to maintain cyber security frameworks since 2016, and consolidated these in July 2026 into directions on technology risk and resilience.[26] What is missing is a common test for every critical system: how much can it keep running under attack, and how quickly can it recover?

Measuring CNR

CNR needs measures that a ministry can report and an auditor can check. Table 1 sets out six. The first two are the core of CNR. The other four explain why a system scores the way it does.

Table 1: CNR measurement matrix (system level)

Measure	Question asked of each system	Example
Minimum service level	What share of its essential function can it keep under attack?	A bank keeps customer data intact and core payments running during a cyber-attack
Recovery time	How long does it take to restore normal service?	Hours for a payments platform to return to full capacity after an overload
Fallback depth	How many independent fallbacks exist, and are they practised?	Backup site, offline mode, manual procedure
Single-point dependence	Does any critical input come from one foreign source or one site?	Bulk drugs from one country; one refinery feeding a region
Physical protection	Are nodes that cannot be duplicated hardened, dispersed or placed underground?	Grid control centres, data centres, fuel storage

Measure	Question asked of each system	Example
Test record	When was it last tested against an adversary scenario, and with what result?	Annual exercise against a declared scenario

Each measure would be rated green, amber or red against the sector standard. Ratings, not raw data, would travel upward. The detail would stay with the sector and remain classified where it needs to be.

The matrix also sets priorities. Each sector would need to define those critical weaknesses that would cause the most harm in case of conflict. Denying the adversary access to these weaknesses must be the primary aim. The defender should find them before the adversary does. Where they cannot be duplicated quickly, hardening, dispersal and underground siting buy time that redundancy cannot.

CNR records what each system can absorb. Two measures record what the nation can produce and keep running. Time to surge is how long the nation needs, once a decision is taken, to bring the output of a critical item to wartime levels. Sustainment depth is how long a given tempo of operations can be held before something runs short. Neither is reported today.

Defence production reached a record ₹1.51 lakh crore in 2024–25.[27] This is real progress, but **it** reflects peacetime output. The European Union could deliver only about half of the one million artillery shells it had promised Ukraine by March 2024, despite its wealth and industrial base.[28] The shortfall reflected the time industry needed to surge, not lack of money or intent.

WONA in Peace and in War

The approach does different work in peace and in war. Treating them as one blurs both.

In peace, WONA builds. Its tasks are long, and they cross many institutions. The Advanced Medium Combat Aircraft (AMCA) is one: in May 2025, its execution model opened development to public and private Indian firms, bidding alone or in consortia.[29] The Tejas Mk II and a high-thrust aero-engine are others. Each needs laboratories, defence public sector undertakings, private industry and academia to work together for more than a decade. Each will outlast the government that starts it.

Peace is also when CNR is built. Standards are set and fallbacks installed. Surge capacity also has a peacetime cost. Unless each task carries a funding line, such as contracts that pay industry to keep spare capacity ready, it will remain an intention.

In war, WONA sustains and adapts. A conflict would test surge production of munitions and spares, and surge movement of forces and supplies. It would test fuel reserves, critical pharmaceutical inputs and the resilience of payment and other information systems.

Adaptation is the hardest of these. In Ukraine, cheap interceptor drones had become an answer to Russia's propeller-driven Shahed-type drones. Russia then fielded the jet-powered Geran-4 and Geran-5, faster than most interceptors could catch. By late September 2026, Ukraine was shooting down only 57 per cent of them, against an estimated Russian output of about 3,000 a month. Ukrainian firms answered with jet-powered interceptors, the first of which entered service in August 2026.[30] The cycle from new threat to new counter ran in months.

India would need a similar loop. A standing forum of the Services, industry and academia could meet monthly in war and quarterly in peace. Its job would be to take reports of what is failing and turn them into fixes. Existing schemes that link start-ups to the Services could form its base.

The two modes connect through exercises. The author's earlier paper proposed apex-level national security exercises.[31] Their findings would show where CNR falls short. They could also give the long-pending National Security Strategy (NSS) a basis in evidence, much as the response to COVID-19 drew sectors together around a common task.

The Gaps

The first gap is ownership. Under the Allocation of Business and Transaction of Business Rules, the work of government is allotted to ministries and disposed of under their ministers.[32] The National Security Council (NSC) advises the Prime Minister but directs no ministry.[33] WONA has been announced, outlined and written into Vision 2047, yet no one is assigned to deliver it. The Joint Doctrine for Multi-Domain Operations itself says that the roles of agencies beyond the armed forces "need to be assigned" and their implementation "ensured".[34] It does not say by whom. The Union War Book is the nearest answer. Public reporting describes it as a response manual covering rations, fuel, medicines, civil defence and the

protection of financial and communication networks.[35] It is not a peacetime programme with owners and milestones.

The second gap is law. Neither the Civil Defence Act of 1968 nor the Disaster Management Act of 2005 was written to mobilise the nation for a long war.[36] In 1962[37] and 1971,[38] the Defence of India laws followed the outbreak of war within days, and lapsed with the emergencies that produced them. That worked in wars measured in weeks. Industrial surge needs lead time that an ordinance cannot buy. India has authorities at every level that plan before a disaster.[39] It has none that plan before a war.

The third gap is the States. Public order and police are State subjects.[40] The States also run hospitals, water supply and power distribution. A long war would depend on all of these. In war, a proclamation of emergency under Article 352 would let the Union direct the States.[41] The gap is therefore not authority in war but preparation in peace. In May 2025, the Ministry of Home Affairs asked the States to run civil defence drills across 244 districts, the first nationwide drill since 1971.[42] The States responded well, but the drills were called during a crisis and at the Union's request.

A fourth problem cuts across all three: compartments. Specialisation brings depth, but it also creates seams. In space, the Indian Space Research Organisation, the Defence Space Agency, the National Technical Research Organisation and the Defence Intelligence Agency all hold claims on space assets, a tension noted when the agency was set up in 2019.[43] On land, four forces guard different borders: the Sashastra Seema Bal, the Assam Rifles, the Border Security Force and the Indo-Tibetan Border Police.[44] The Group of Ministers after Kargil recommended 'one border, one force' for this reason.

Each arrangement exists for specific reasons. But when one function is split across several agencies, no one measures it as a whole. The adversary would exploit that seam.

If no one owns delivery, it is tempting to look for someone to blame. Cohen and Dasgupta observed in 2010 that India's military modernisation lacked political direction, and prescribed institutional reform as the remedy.[45] The record since then points to design rather than individuals. Much of the coordinating load for national security has been placed with the National Security Advisor (NSA), one decision at a time and each with a reason.

In April 2018, the Defence Planning Committee (DPC) was constituted under the NSA, with a draft NSS among its tasks.[46] In October 2018, the Strategic Policy Group (SPG) was reconstituted with the

NSA in the chair in place of the Cabinet Secretary.[47] In 2024, an Additional NSA was placed above three Deputy NSAs.[48] Each step added capacity. None changed the office's character as an adviser.

The arrangement suits crises, where speed and access count most. WONA makes a different demand. Someone has to chase delivery across ministries, industry and the States for years at a stretch. That is hard to do from an office with no authority over any of them, and whose day is already taken up by the next crisis.

The draft NSS shows the strain. In 2019, officials indicated that it was close to submission.[49] Seven years later, none has been published. Strategic direction can remain with the NSA. Delivery needs a home of its own.

Making CNR Work Through Existing Tiers

India does not need a new agency for CNR. The bodies already exist. What is missing is a clear assignment of CNR to each of them.

The SPG should set CNR policy. It is already the principal mechanism for inter-ministerial coordination on national security, and is charged with a long-term strategic defence review. Its members include the Cabinet Secretary, the three Service Chiefs, the Governor of the Reserve Bank and the Secretaries for Home, Finance, Defence Production, Space and Atomic Energy.[50] That is close to the set of owners CNR needs. The SPG would decide which systems count as critical, the standard for each sector and the adversary scenarios against which they are tested. It meets from time to time. CNR needs a fixed calendar, at least twice a year.

The Cabinet Secretariat should monitor. When the SPG was reconstituted, the Cabinet Secretary was given the task of coordinating the implementation of its decisions across ministries and State governments.[51] The machinery is in place too. PM Gati Shakti runs on an Empowered Group of Secretaries headed by the Cabinet Secretary, a Network Planning Group of the ministries concerned and a technical support unit.[52] A CNR dashboard on the same pattern would track the matrix ratings for each sector.

Monitoring needs a full-time owner. A CNR coordinator in the Cabinet Secretariat, of Secretary rank and on a fixed tenure, could be drawn from inside or outside the civil service. A small team of domain

specialists – in power, finance, telecommunications, logistics, health, cyber and space – would support the coordinator. This answers a fair criticism of generalist secretariats: they cover everything and master little. The coordinator would run no sector, only hold each to its standard and report.

The DPC should review the defence-industrial side. Chaired by the NSA, with the Foreign, Defence and Expenditure Secretaries and the Service Chiefs, it reports to the Raksha Mantri.[53] It is the natural forum to review time to surge and sustainment depth for critical items against capability plans. The National Security Advisory Board could add an independent annual check on whether the standards themselves remain right.

Each CNR task needs one owner, named co-partners and a date. Finland's Security Strategy for Society assigns each of its strategic tasks to a lead ministry that coordinates and reports.[54] An Indian list might give ammunition surge capacity to the Department of Defence Production and surge movement to the Ministries of Railways and Road Transport. Bulk drugs would go to the Department of Pharmaceuticals, fuel reserves to the Ministry of Petroleum and Natural Gas, and payment resilience to the Reserve Bank and NPCI.

A detailed annual report on each task would go to the Cabinet Committee on Security (CCS). An unclassified summary would be laid before Parliament for review by the Standing Committee on Defence. A missed milestone would be recorded and explained with a revised date. Censure is best avoided, since it teaches ministries to set safer targets.

A preparedness law for war would give this structure its footing. It would set duties and plans before a crisis. Powers to requisition property and services would be drafted in advance, activated only on a proclamation of emergency, and bound by compensation, parliamentary oversight and a sunset clause. Both wartime laws also carried detention powers, the 1971 Act through amendments to the Maintenance of Internal Security Act.[55] Keeping mobilisation apart from detention would help a new law win consent. The same law could give the CNR standards statutory force, binding private as well as public operators of critical systems, and give the coordinator a legal basis.

The States need a standing role. Each could set up a preparedness cell, building on its civil defence organisation but with a mandate for war. Each could also keep a State War Book based on the Union War Book. Routine exercises in the 244 civil defence districts would replace a request in a crisis with an arrangement made in advance. On 15 August 2026, the Prime Minister announced a 'massive

modern' Civil Defence volunteer force.[56] Written into this effort, it would give the population ring a defence of its own, alongside a standing effort to counter disinformation in a crisis.

Where do military and non-military means meet? In this design, at three points. Policy meets in the SPG, where the Service Chiefs sit with the Cabinet Secretary, the Governor of the Reserve Bank and the civil Secretaries. Practice meets in the national exercise, where both work through the same scenario. The field meets in the States, where formations, district administrations and civil defence share one plan. In war, all three converge on the CCS.

A Road Map

None of this needs to happen at once. Table 2 sets out one way to phase it.

Table 2: A road map for CNR

Horizon	What would be done	Who leads
Short term (within a year)	SPG adopts the CNR definition and matrix; standards set for five pilot sectors – payments, power, fuel, telecommunications and bulk drugs; CNR coordinator appointed; first apex-level national exercise	SPG; Cabinet Secretariat
Mid term (one to three years)	Matrix extended to all critical sectors; first annual report to the CCS and Parliament; preparedness law enacted; State preparedness cells and State War Books in place; industry–academia forum running; reserve-capacity contracts funded	Cabinet Secretariat; Ministry of Defence; States; Parliament
Long term (three to ten years)	CNR, time to surge and sustainment depth reported every year; National Security Strategy published with CNR in it; long programmes such as AMCA and the aero-engine tracked as WONA tasks; resilience designed into new infrastructure from the start	NSC and SPG; all ministries

Conclusion

WONA has found a place in doctrine and has been a success in a small number of projects. It has not, however, become a system. It lacks a common measure, an accountable owner, a legal basis for war and a defined role for the States.

CNR would allow every critical system to report against the same standard. The bodies required to set, monitor and review that standard already exist. What they lack is a definition, a matrix and dedicated personnel to apply them. CNR would complement classified instruments such as the Union War Book by providing a common yardstick.

Expectations of short wars have often proved mistaken.[57] A nation prepared to sustain a conflict for six months is also prepared for one of four days. The converse does not hold.

This paper opened by asking how India would know whether WONA would hold in war. At present, the answer would emerge only in the course of a conflict. CNR offers a means of establishing it in peacetime. The first step is a modest one: to define CNR, agree on the six measures and assign an owner to each. Subsequent steps can then be shaped by the findings of the first national security exercise.

(Disclaimer: The views and opinions expressed in this paper are those of the author and do not necessarily reflect the position of the Centre for Aerospace Power and Strategic Studies [CAPSS])

Notes:-

[1] Headquarters Integrated Defence Staff, *Joint Doctrine Indian Armed Forces* (New Delhi: HQ IDS, April 2017), Chapter 6, Para 10, pp. 53–54, https://bharatshakti.in/wp-content/uploads/2015/09/Joint_Doctrine_Indian_Armed_Forces.pdf, accessed 12 October 2026.

[2] Prime Minister's Office, "PM's Address at NIIO Seminar 'Swavlamban' in New Delhi," 18 July 2022, https://www.pmindia.gov.in/en/news_updates/pms-address-at-niio-seminar-swavlamban-in-new-delhi/, accessed 29 September 2026.

[3] Office of the Raksha Mantri, "National security is no longer a matter of Armed Forces, it has become an issue of a whole-of-nation approach: Raksha Mantri," 27 August 2025, https://www.rajnathsingh.in/press-release/national-security-is-no-longer-a-matter-of-armed-forces-it-has-become-an-issue-of-a-whole-of-nation-approach-raksha-mantri/, accessed 12 October 2026.

[4] Headquarters Integrated Defence Staff, *Joint Doctrine for Multi Domain Operations*, JP 2.06 (New Delhi: HQ IDS, August 2025), Foreword, and Chapter 2, Para 9, p. 10, which calls a "Whole-Of-Nation Approach (WONA)" a "crucial enabler" of multi-domain operations, https://ids.nic.in/c8ce474c-6959-4d8f-8070-6f68648a0b96, accessed 12 October 2026.

[5] Press Information Bureau, "Raksha Mantri releases 'Defence Forces Vision 2047: A Roadmap for a Future-Ready Indian Military'," Ministry of Defence, 10 March 2026, https://www.pib.gov.in/PressReleasePage.aspx?PRID=2237368, accessed 12 October 2026.

[6] "Shri Rajnath Singh and Shri Nitin Gadkari inaugurate Emergency Landing Facility for Indian Air Force in Barmer, Rajasthan," 9 September 2021, https://www.rajnathsingh.in/press-release/shri-rajnath-singh-and-shri-nitin-gadkari-inaugurate-emergency-landing-facility-for-indian-air-force-in-barmer-rajasthan/; "Rajnath, Gadkari inaugurate emergency landing strip for IAF planes on national highway in Barmer," *The Tribune*, 9 September 2021, https://www.tribuneindia.com/news/nation/rajnath-gadkari-inaugurate-emergency-landing-strip-for-iaf-planes-on-national-highway-in-barmer-308828, accessed 5 October 2026.

[7] Press Information Bureau, "India's first military flight using Blended Bio-Jet Fuel Flown by IAF," Ministry of Defence, 17 December 2018, https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1556280; "IAF flies first military plane with bio-jet fuel," *Outlook* (IANS), 17 December 2018, https://www.outlookindia.com/newsscroll/iaf-flies-first-military-plane-with-biojet-fuel/1441882, accessed 5 October 2026.

[8] Press Information Bureau, "Indian Air Force & Indian Army carry out first-of-its-kind precise para-drop of BHISHM critical trauma care cube at 15,000 feet," Ministry of Defence, 17 August 2024, https://www.pib.gov.in/PressReleaseIframePage.aspx?PRID=2046219, accessed 5 October 2026.

[9] Kalyan Ray, "Operation Sindoor was a reality check, exposed certain capability gaps: Defence Secretary," *Deccan Herald*, 12 September 2025, https://www.deccanherald.com/india/operation-sindoor-was-a-reality-check-for-india-defence-secretary-3725041, accessed 12 October 2026.

[10] "'1 border, 3 adversaries': Army Deputy Chief on Op Sindoor, says Pakistan got live inputs from China," *ThePrint*, 4 July 2025, https://theprint.in/defence/1-border-3-adversaries-army-deputy-chief-on-op-sindoor-says-pakistan-got-live-inputs-from-china/2679483/; "China used Op Sindoor as live lab to test weapons: Army Deputy Chief," *The Tribune*, 5 July 2025, https://www.tribuneindia.com/news/india/china-used-op-sindoor-as-live-lab-to-test-weapons-army-deputy-chief, accessed 12 October 2026. Lt Gen Rahul R Singh was speaking at a FICCI seminar on 4 July 2025.

[11] "Govt sets June 2018 target to meet army's ammunition shortage," *Hindustan Times*, 16 November 2017, https://www.pressreader.com/india/hindustan-times-delhi/20171116/281900183502255, accessed 8 October 2026.

[12] Comptroller and Auditor General of India, *Report No. 19 of 2015: Performance Audit of Ammunition Management in Army*, tabled 8 May 2015, https://cag.gov.in/en/audit-report/details/1740; Comptroller and Auditor General of India, *Report No. 15 of 2017 (Defence Services)*, "Ammunition Management in Army – Follow up Audit," tabled 21 July 2017, https://cag.gov.in/content/report-no15-2017-compliance-audit-union-government-army-and-ordnance-factories-reports, accessed 8 October 2026.

[13] Press Information Bureau, "Mastering existing tech & staying ready for new innovations & unforeseen challenges is key to effectively tackle complexities of modern-day warfare: Raksha Mantri at RAN SAMWAD," Ministry of Defence, 27 August 2025, https://www.pib.gov.in/PressReleasePage.aspx?PRID=2161131, accessed 12 October 2026. The Raksha Mantri said: "If any war stretches for 2 months, 4 months, a year, 2 years, even 5 years, then we should be fully prepared."

[14] John A. Warden III, "The Enemy as a System," *Airpower Journal* 9, no. 1 (Spring 1995): 40–55, https://www.airuniversity.af.edu/Portals/10/ASPJ/journals/Volume-09_Issue-1-Se/1995_Vol9_No1.pdf, accessed 2 October 2026. See also John A. Warden III, *The Air Campaign: Planning for Combat* (Washington, DC: National Defense University Press, 1988).

[15] Tom Christensen and Per Lægreid, "The Whole-of-Government Approach to Public Sector Reform," *Public Administration Review* 67, no. 6 (2007): 1059–66, https://doi.org/10.1111/j.1540-6210.2007.00797.x.

[16] HM Government, *Global Britain in a Competitive Age: The Integrated Review of Security, Defence, Development and Foreign Policy*, CP 403 (London: HMSO, March 2021), Chapter 4, "Building resilience at home and overseas", which calls for a "whole-of-society" approach to resilience.

[17] J.S. Bajwa, "Defining Elements of Comprehensive National Power," *CLAWS Journal* (Summer 2008): 151–62, https://archive.claws.co.in/images/journals_doc/1302263399_JSBajwa.pdf; Vivekananda International Foundation, *Strategies for Enhancing India's Comprehensive National Power*, https://www.vifindia.org/sites/default/files/strategies-for-enhancing-india-s-comprehesive-national-power.pdf, accessed 8 October 2026.

[18] International Organization for Standardization, *ISO 22301:2019 Security and Resilience – Business Continuity Management Systems – Requirements* (Geneva: ISO, 2019).

[19] Ravinder Pal Singh and Harinder Singh, "National Security Resilience (NSR): Framing the First Steps in the Indian Context," National Maritime Foundation, 27 August 2026, https://maritimeindia.org/national-security-resilience-nsr-framing-the-first-steps-in-the-indian-context/, accessed 12 October 2026. The article builds NSR on national resilience (NR), the financial, economic, industrial, technological and human base of the state, and extends it to the combat resilience (CR) of the forces.

[20] Press Information Bureau, "Export of Covid-19 Vaccines," December 2021, https://www.pib.gov.in/PressReleasePage.aspx?PRID=1778837, accessed 1 October 2026.

[21] Sudip Chaudhuri, "India's Import Dependence on China in Pharmaceuticals," *RIS Discussion Paper* No. 268, Research and Information System for Developing Countries, https://ris.org.in/sites/default/files/Publication/DP%20268%20Prof%20Sudip%20Chaudhuri.pdf, accessed 1 October 2026.

[22] Press Information Bureau, "UPI completes 10 glorious years, Emerges as World's Largest Real-Time Payments Platform," https://www.pib.gov.in/PressReleasePage.aspx?PRID=2257087; "UPI completes 10 years, emerges as world's largest real-time payments platform," *The Tribune*, 30 April 2026, https://www.tribuneindia.com/news/business/upi-completes-10-years-emerges-as-worlds-largest-real-time-payments-platform/, accessed 12 October 2026. The Tribune reports 703 banks live on UPI and 24,162 crore transactions in 2025–26, an average of about 2,000 crore a month.

[23] "UPI at Scale: Outages and the Push for Resilient Systems," Observer Research Foundation, https://www.orfonline.org/expert-speak/upi-at-scale-outages-and-the-push-for-resilient-systems, accessed 1 October 2026.

[24] "NPCI directs UPI members to follow new API guidelines to avoid disruptions," *Business Standard*, 28 April 2025, https://www.business-standard.com/finance/news/npci-directs-upi-members-to-follow-new-api-guidelines-to-avoid-disruptions-125042801443_1.html, accessed 12 October 2026, reporting NPCI's root-cause finding on the 12 April 2025 outage. NPCI has not disclosed the causes of the other outages; see note 23.

[25] The Information Technology Act, 2000, Sections 70 (protected systems) and 70A (national nodal agency for critical information infrastructure protection).

[26] Reserve Bank of India, "Cyber Security Framework in Banks," RBI/2015-16/418, DBS.CO/CSITE/BC.11/33.01.001/2015-16, 2 June 2016; Reserve Bank of India, *Reserve Bank of India (Commercial Banks – Cybersecurity, Technology: Risk, Resilience and Assurance Framework) Directions, 2026*, RBI/DoS/2026-27/410, 31 July 2026.

[27] Press Information Bureau, "Defence production soars to an all-time high of Rs 1.51 lakh crore in FY 2024-25," Ministry of Defence, 9 August 2025, https://www.pib.gov.in/PressReleasePage.aspx?PRID=2154551, accessed 29 September 2026.

[28] Josep Borrell, "To secure peace, the EU needs to be ready to defend itself," blog of the EU High Representative, February 2024, reproduced in *Defence Industry Europe*, https://defence-industry.eu/borrell-to-secure-peace-the-eu-needs-to-be-ready-to-defend-itself/; "It takes Europe at least a year to fill a Ukrainian order for artillery shells," *Defense One*, February 2024, https://www.defenseone.com/threats/2024/02/newly-ordered-european-155mm-shells-take-year-or-more-reach-ukraine-estonian-official-says/394146/, accessed 7 October 2026.

[29] Office of the Raksha Mantri, "Aatmanirbhar Bharat: Raksha Mantri approves Advanced Medium Combat Aircraft Programme Execution Model through industry partnership," 27 May 2025, https://www.rajnathsingh.in/press-release/aatmanirbhar-bharat-raksha-mantri-approves-advanced-medium-combat-aircraft-programme-execution-model-through-industry-partnership/, accessed 12 October 2026.

[30] Jimmy Rushton, "Ukraine's interceptor tech outpaced by Russia's jet-powered Geran-5 drones," *Kyiv Independent*, 1 October 2026, https://kyivindependent.com/ukraines-interceptor-tech-outpaced-by-russias-jet-powered-geran-5-drones/; "Russia steps up use of jet-powered drones beyond the reach of Ukrainian interceptors," *Euronews*, 2 July 2026, https://www.euronews.com/2026/07/02/russia-steps-up-use-of-jet-powered-drones-beyond-the-reach-of-ukrainian-interceptors, accessed 12 October 2026.

[31] Akash Godbole, "Before The Next Crisis: The Case for Apex-Level National Security Exercises in India," *Expert View*, Centre for Aerospace Power and Strategic Studies, 10 September 2026, https://capssindia.org/before-the-next-crisis-the-case-for-apex-level-national-security-exercises-in-india/, accessed 29 September 2026.

[32] Government of India (Allocation of Business) Rules, 1961, Rule 2; Government of India (Transaction of Business) Rules, 1961, Rule 3, made under Article 77(3) of the Constitution. Cabinet Secretariat, https://cabsec.gov.in/files/allocation/transaction_businessrule.pdf, accessed 29 September 2026.

[33] HQ IDS, *Joint Doctrine Indian Armed Forces*, Chapter 4, Para 6, which describes the NSC as in effect an advisory body.

[34] HQ IDS, *Joint Doctrine for Multi Domain Operations*, JP 2.06, Chapter 4, Para 10.2, p. 25.

[35] "Highly confidential manual guided India's top officials during conflict with Pak," *Hindustan Times*, 11 May 2025; see also "What is Union War Book 2010? Top secret manual that guided India amid conflict with Pakistan," *The Week*, 12 May 2025, https://www.theweek.in/news/india/2025/05/12/what-is-union-war-book-2010-top-secret-manual-that-guided-india-amid-conflict-with-pakistan.html, accessed 8 October 2026.

[36] The Civil Defence Act, 1968 (Act 27 of 1968); The Disaster Management Act, 2005 (Act 53 of 2005).

[37] The Defence of India Act, 1962 (Act 51 of 1962), https://indiankanoon.org/doc/4890801/, accessed 29 September 2026.

[38] The Defence of India Act, 1971 (Act 42 of 1971), Directorate General of Fire Services, Civil Defence and Home Guards, Ministry of Home Affairs, https://dgfscdhg.gov.in/sites/default/files/civildefence/The_Defence_of_india_act,_1971.pdf, accessed 29 September 2026; Defence of India Rules, 1971, 5 December 1971.

[39] The Disaster Management Act, 2005 (Act 53 of 2005), Sections 3, 14 and 25 (national, State and district authorities) and Sections 11, 23 and 31 (national, State and district plans).

[40] Constitution of India, Seventh Schedule, List II, Entries 1 and 2.

[41] Constitution of India, Articles 250, 352, 353 and 355.

[42] "Civil Defence Mock Drill to be conducted across 244 districts of the country tomorrow," *All India Radio News*, 6 May 2025, https://www.newsonair.gov.in/civil-defence-mock-drill-to-be-conducted-across-244-districts-of-the-country-tomorrow, accessed 29 September 2026; "Civil defence mock drill: What it is and what to expect during May 7," *Business Standard*, 6 May 2025, https://www.business-standard.com/india-news/civil-defence-mock-drill-what-it-is-and-what-to-expect-during-may-7-india-2025-guidelines-what-to-do-125050600586_1.html, accessed 29 September 2026.

[43] Manoj Joshi, "India has a long way to go before it can use space for modern warfare," Observer Research Foundation, 17 June 2019, https://www.orfonline.org/research/india-has-a-long-way-to-go-before-it-can-use-space-for-modern-warfare-52106, accessed 12 October 2026.

[44] Sanjiv Krishan Sood, "One Border, One Force: Unified Command for India Explained," *The Quint*, 1 July 2025, https://www.thequint.com/opinion/one-border-one-force-unified-command-for-india-explained, accessed 12 October 2026; Group of Ministers, *Reforming the National Security System: Recommendations of the Group of Ministers* (New Delhi: Government of India, February 2001).

[45] Stephen P. Cohen and Sunil Dasgupta, *Arming without Aiming: India's Military Modernization* (Washington, DC: Brookings Institution Press, 2010).

[46] Manohar Parrikar Institute for Defence Studies and Analyses, "Creation of Defence Planning Committee: A Step towards Credible Defence Preparedness," *IDSA Comment*, April 2018, https://idsa.in/publisher/comments/creation-of-defence-planning-committee-a-step-towards-credible-defence-preparedness, accessed 29 September 2026. See also "New superpanel for defence strategy," *Hindustan Times*, 19 April 2018, reporting the Ministry of Defence notification.

[47] "Strategic Policy Group reconstituted, Ajit Doval is Chairman," *Business Standard* (IANS), 9 October 2018, https://www.business-standard.com/article/news-ians/strategic-policy-group-reconstituted-ajit-doval-is-chairman-118100900690_1.html, accessed 29 September 2026.

[48] "Inside Modi government's national security architecture: new roles for old hands," *Swarajya*, 3 July 2024, https://swarajyamag.com/news-brief/inside-modi-governments-national-security-architecture-new-roles-for-old-hands; Kalyan Ghosh, "Restructuring India's National Security Council Secretariat (NSCS)," *Chintan*, India Foundation, 23 July 2024, https://chintan.indiafoundation.in/articles/restructuring-indias-national-security-council-secretariat-nscs/, accessed 12 October 2026.

[49] "New military doctrine set to be submitted in Oct," *Hindustan Times*, 20 September 2019, https://www.pressreader.com/india/hindustan-times-st-jaipur/20190920/281543702636757; "National Security Strategy to be part of 2030 goals," *The Tribune*, 20 September 2019, https://www.tribuneindia.com/news/archive/nation/national-security-strategy-to-be-part-of-2030-goals-835118, accessed 12 October 2026.

[50] "NSA replaces Cabinet Secretary as SPG chief," *Onmanorama*, 9 October 2018, https://www.onmanorama.com/news/india/2018/10/09/nsa-replaces-cabinet-secretary-as-spg-chief.html, accessed 12 October 2026.

[51] See note 52.

[52] PIB Research Unit, "PM GatiShakti – National Master Plan," RU-01-01-0002-251021, 25 October 2021, https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/oct/doc2021102511.pdf, accessed 12 October 2026.

[53] See note 48.

[54] Security Committee, Finland, "Security Strategy for Society," https://turvallisuuskomitea.fi/en/security-strategy-for-society/, accessed 29 September 2026; Security Committee, *Security Strategy for Society: Government Resolution*, 16 January 2025.

[55] The Defence of India Act, 1962; The Defence of India Act, 1971. See also https://indiankanoon.org/doc/166591641/, accessed 29 September 2026.

[56] "Independence Day: PM Modi announces modern civil defence volunteer force to tackle new-age crises," *Odisha TV*, 15 August 2026, https://odishatv.in/national/independence-day-pm-modi-announces-modern-civil-defence-volunteer-force-to-tackle-new-age-crises-12262138; "Explainer: Overhauling India's Civil Defence Force for New-Age Threats," *India's World*, https://indiasworld.in/explainer-overhauling-indias-civil-defence-force-for-new-age-threats/, accessed 7 October 2026.

[57] Akash Godbole, "Dynamics of Modern Conflict: Breaking the Myths," *Defence and Diplomacy Journal* 14, no. 3 (April–June 2025): 33–43, https://capssindia.org/wp-content/uploads/2025/10/4-Akash-Godbole.pdf, accessed 29 September 2026.

About the Author

Gp Capt Akash Godbole was commissioned in the Indian Air Force in December 2006 in the fighter stream. He is an alumnus of the National Defence Academy and Military Institute of Technology, Pune. He has over 2,700 hours of flying to his credit and is fully operational on the MiG-21 Bison and Hawk Mk 132 aircraft. The officer is a Qualified Flying Instructor, Instrument Rating Instructor and Examiner, and a graduate of Defence Services Technical Staff College. He has held important instructional and operational tenures including Flight Commander of a fighter squadron and Chief Operations Officer at a premier base. The officer holds an MSc in Defence Technology from Savitribai Phule Pune University. His academic research encompasses fields of Military Strategy, Strategic Decision Making, Doctrinal Evolution and Contemporary Technological Developments. He has several articles and chapters in journals and online forums to his credit. He has also served as a Senior Fellow at the Centre for Aerospace Power and Strategic Studies.