

1. Indian agricultural sector is the predominant employer in the country (> 50%) with the contribution of ~16% to GDP. Amongst the many ills plaguing the agriculture sector, land holdings is one major area.

Current status indicates with ~47% total cropped area, small and marginal farmers occupy the disproportionate portion (against 86% farmers). In this disparity, tenancy reforms would benefit agricultural sector in the following manner:

- ① would lead to aggregation of holdings for production leading economies of scale
- ② Ensure security to tenants thus encouraging investments, adoption of technology, smart agriculture
- ③ Increase farm based income, thus positively impacting socio-economic indicators

of rural households. (more 54% households in rural is agriculture based, NSSO)

- ④ Positively impact agriculture based primary industries (value addition sector) with increasing efficiency
- ⑤ Leads to greater food security, also exports

In this regard, NITI Aayog under the chairmanship of J. H. D. H. H. H. provided the draft for the Model Land Leasing Act, 2016.

Significance of the same:

- ① Tries to balance landholders and tenants interests and rights
- ② Ensures there is tenure security to tenants
- ③ Ensures landholder's right is safeguarded.

Nevertheless, there are some concerns with Act including lack of application by states, farmer's hesitancy in adoption for which a body is set up to resolve the issues.

2. Micro Small Medium Enterprises (MSME) is one of the significant pillars of Indian economy in more ways than one:
- more 20% contribution to GDP
 - around 45% to exports
 - employs more than 100 million people.

Nevertheless, there are several challenges MSME sector faces in the foreign trade:

- ① Lack of competitiveness - resulting from poor adoption of technology
- ② Lack of support in terms of adhering to export standards (phyto sanitary) in terms of safety
- ③ Lack of awareness about opportunities ⁱⁿ ~~about~~ foreign market
- ④ Lack of adequate transport facilities, infrastructure including last mile connectivity
- ⑤ High logistics cost (@ 14% overall) leads to inefficiency.

- ⑥ Lack of sufficient credit availability
- ⑦ Lack of product innovation, process reengineering
- ⑧ Lack of effective implementation of government schemes.

As one of the vibrant sectors that would increase India's overall exports, Government has taken following measures to address these lacunae:

- ① MUDRA - loan scheme especially for MSMEs
- ② Inclusion in Priority Sector Lending of banks
- ③ Active involvement of DPIIT, APEDA in handholding MSMEs on safety standards
- ④ Dedicated freight corridors, Gram sadak Yojana to improve connectivity
- ⑤ Changed definitions to investment and turnover based to facilitate investments
- ⑥ CHAMPIONS portal to spread awareness

MSMEs could affect the trajectory of India towards its \$5 trillion target.

3. Inclusive Growth refers to the phenomenon of both increasing growth and also equitable distribution of the same across population.

The idea of inclusive growth seems more relevant now with top 1% of Indians holding ^{4 times} more wealth than bottom 10%. (Oxfam)

On the other hand, Sustainable development Goals (SDGs) aim at providing basic living standards to all people. Ex: SDG 1 - No poverty, SDG 2 - No hunger, SDG 3 - Health.

Thus, these two seem to be interlinked in many ways:

① SDG 1 and 2 - talk about removing inequality in terms of income and food, which is the main plank of inclusive growth

② SDG 3 and 4 (Health, Education) - would be directly linked ~~also~~ to inclusive access to benefits of technology in these

two sectors, under capability approach
of growth distribution

③ SDGs addressing housing and urban cities

are aimed at bringing poor in urban areas into the growth trajectory.

Ex: 18% of Urban population lives in slums (census 2011), PM Awas Yojana aims to undo this, leading to both inclusive growth and SDGs.

④ Climate change related goals is one of the significant component of inclusive growth as it affects poor and marginalized disproportionately.

⑤ Gender equality in the SDGs is directly linked to one of the dimensions of inequality.

Nevertheless, some aspects that do not come under SDGs like tribal rights, caste factor should also be considered in inclusive growth.

Thus, as India aims at finishing SDGs in its earnest, it is in a way addressing inclusive growth.

4. Rules of Origin refers to the principles in determining the national origin of a product and also the extent of content relating to same.

Evolved in WTO negotiations and several bilateral and multilateral treaties, ROO is a significant concept for the following factors:

- ① Address unfair trade practices, i.e., countries routing products through a treaty-bearing country.
- ② Helpful in framing commercial policies, like countervailing, safeguard duties
- ③ Protect the domestic industry from undue competition
- ④ Ensure consumer safety and protection against malafide products
- ⑤ Ensure effective trade policy in accordance with objectives, check over imports
- ⑥ For effective implementation of trade agreements

- ⑦ Enables quick turnaround time at customs as the rules becomes clearer, eases administrative hassle.

This is also one of the reasons for India withdrawing from RCEP negotiations, a lax rule would be detrimental to the domestic producers.

In that regard, India has taken the following steps:

- ① Department of Revenue has revised the Rules of Origin Rules clearly specifying the preferential and non-preferential country norms
- ② Guidelines to declare ROO in public procurement portals
- ③ As part of Defence Procurement Procedure emphasize has laid on more content from domestic market.

As one of the pillars of a vibrant foreign trade, ROO is significant to be established.

5. Minimum Support Price refers to the price at ~~the~~ which the government procures from the farmers, calculated basis a host of factors including supply-demand, price parity between crops, international and domestic prices by the Commission on Agricultural Cost and Price.

Creation of an era of scarcity

Evolves in the 1960s, it aimed to address

- ① food scarcity - widespread famines and droughts needed government intervention
- ② Price rise in food products owing to droughts led to unaffordability

This led to government procuring from farmers at Economic Cost and distributing it to people at a much lesser price bearing the remaining as food subsidy.

- ③ It also meant to encourage the farmers to increase production

Current era of Surplus

With Green Revolution and subsequent advancements, food production crossed more than the amount needed to feed everyone in the country. In this era, MSP is irrelevant for the following factors:

- ① Inadvertant consequences including non-diversification of crops, water crisis is looming large
- ② Ineffective in supporting farm income as the reach is very limited
- ③ Hurdle in building a market resilient agriculture as this distorts price.

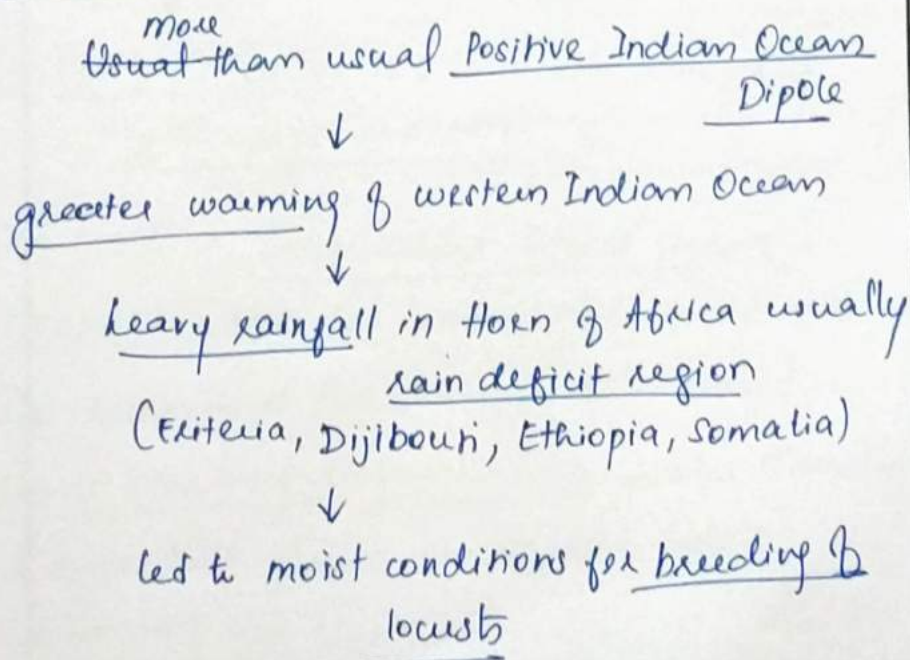
At the same, MSP can be considered relevant for the following factors:

- ① To ensure food security to millions below poverty line
- ② To act as a price signal to market so that farmers have a better bargaining power
- ③ Protect farmers against vulnerabilities of market forces

Thus, MSP also involves key developmental questions for the country.

6. Locust refers to a family of grasshoppers that reproduce in moist conditions and thrive well on vegetation. Amongst different species, desert locust is the most potent in damaging the crops in India and abroad.

Recently locust spread from the Horn of Africa to Gulf countries and reached India via Pakistan. One of the worst attacks in the past decade, a link between this attack and Climate change can be drawn as follows:



↓
 heavy westward wind draws ^{locusts} itself to Gulf countries
 ↓
 feeds on vegetation (from excess rainfall)
 ↓
 Super cyclone Amphan in Bay of Bengal
 its severity an effect of climate change
 draws locusts further westwards

It can be seen that climate change enabled its growing and spreading. The harmful effects of locusts attack includes:

- ① Heavy loss of crops - income and food loss
- ② Use of pesticides to kill locusts adversely affects crops and soil

This needs a coordinated effort across countries, India has been actively coordinating with Iran and Pakistan in this regard.
Locust Warning Organisation under Ministry of Agriculture played an effective role in stemming the crisis.

8. Patents referring to the intellectual property rights for inventions and innovations of industrial use is governed by Indian Patents Act 1947.

In this regard, India is also a signatory to WIPO convention and establishes a patent regime on par with global standards.

Patent regime in Health - Public over Pharmaceutical

- ① India actively adopts to TRIPS flexibilities that enable countries bypass patents to ensure health security in public interest (Doha Ministerial Conference of WTO) including using Compulsory licensing
- ② India has taken efforts to stem evergreening of patents - patents sought for incremental innovations in pharma sector

9. With more than 15000 kms, India shares land border with 7 countries, Bangladesh being the largest. Border management is ~~not~~ one of the key pillars in national security.

The current situation of border management

① Employment of multiple forces

- Army
- Border Security Force (across Pakistan, China)
- Assam Rifles (across Bhutan, Myanmar)
- Indo-Tibetan Border Force (across China)
- Gorkha Regiment (across Nepal)

② Involvement of multiple agencies

- Intelligence Bureau
- RAW

③ Involvement of two ministries

- Ministry of Defence
- Home Ministry

Need to have one-border - one force

There are several calls to have one force

manning the border :

- ① Unity of Command leads to swift action and decision making
- ② Strengthening command against neighbours
Ex: China has a unified force across its borders
- ③ Brings in efficient surveillance and intelligence
- ④ Easy to redeploy wherever needed
- ⑤ Issue uniform training and development
- ⑥ Brings in more synergy across different terrains
- ⑦ Cooperation from local people would become easier
- ⑧ Better understanding and motivation for the forces, develops a holistic perspective.

With recent border issues including the western China border, Nepal at Kalapani, there is need to consider this idea. This would lead to better border infrastructure as sought in Shekatkar Committee

10. India faces a multitude of challenges at its borders spread across more than 15000 kms on land and 7000 kms on water. Some of them include border demarcation, smuggling, illegal immigration, piracy.

The current system of frontier management

- ① Scattered across ministries and departments Ex: Narcotics handled by Home Ministry, border surveillance by the Defence Ministry
- ② Ineffective coordination between these institutions leading to delayed decision making, inefficient tackling of crimes
- ③ Officers across different departments not able to communicate and respond effectively - lack of comprehensive engagement with the issue

In this context, an Indian Frontier Administrative Service could benefit in the following ways:

- ① As link officers, they would connect different intelligence and provide for quick decision making
- ② Effective engagement with different aspects of border issues, with increasing scope of issues
- ③ Specialized expertise brought to strengthen response

Nevertheless, some of the challenges in the same includes:

- ① Lack of specialization in any one issue leads shallow responses.
Ex: Illegal immigration ~~ref~~ requires, foreign policy, internal security, border management expertise
- ② Difficult to monitor, handle the offices spread across different ministries.

With increasing scale and scope of issues affecting the border, such a force can be considered.

12. Agriculture in India is a highly regulated market with several aspects including price, inputs (fertilizers, power), mandis under different rules. In order to achieve its targets of doubling farmer's income and doubling agriculture exports, government introduced several reforms.

The recent reforms include:

- ① Promoting inter-state and intra-state trade outside of the mandis, reducing role of inter mediaries
- ② Abolition of state levies on agricultural trade
- ③ Promoting electronic market by the state governments, leading to better price discovery
- ④ Promotion of contract farming, enables farmers to assured market and price
- ⑤ Stocking limits rationalized - only on basis of price rise (for perishable and non-perishable)
- strengthens investment in storage, cold chain facilities

- ⑥ Declaration of Essential Commodities
to be heavily limited in scope - enabling
free trading at other circumstances
- ⑦ Compulsory agreement in case of contract
farming along dispute settlement options
- protects farmers against unfair practices

However there are several challenges that are
to be addressed to the above benefits could be
accrued include:

- ① Agriculture being a state subject, it needs
the active will of states on lines of cooperative
federalism
- ② National Commission on Agriculture proposed
one mandi for every 50 km, but the current
situation is around 1 for every ~460 km.
- As private sector also engages with
small and marginal farmers scattered
across the country through mandis, this

could increase their transaction cost
thus impeding investment

- ③ Contract farming provisions lack provision
- for compulsory written agreement
that would make it difficult for farmers to
seek redressals
- ④ Resistance from intermediaries
- ⑤ District Authorities may not be equipped
to handle disputes from Contract farming
- ⑥ Lack of price information and hand holding
to farmers would make him the weaker party.
- ⑦ Unregulated trade outside mandis may
lead to lack of effective recourse for farmers
- ⑧ Not regulating stock limits may make it
difficult to identify quantity of produce
available during distress times
- ⑨ Lack of effective connectivity, infrastructure
would inevitably increase cost.

Thus, there are several issues that need to be
addressed before the reforms could be beneficial.

13. Multimodal transport refers to transport of people and goods seamlessly through different modes:

Ex: recent multimodal terminal at Sahibganj in Jharkhand - has water, road and railways connectivity that enables seamless movement.

This requires multiple integrations across different modes:

As per NITI Aayog, multimodal transportation needs to:

- ① have integration across different computer systems of different modes to ensure faster processing of loading and unloading
- ② enabling transit-oriented development to ensure access to different modes
Ex: Integrating metro-rail and roads would involve parking spaces, pedestrian supporting roads
- ③ mechanization of systems across different modes including warehousing operations

- ④ Enhancing last-mile connectivity paving way to integration of roads with other modes.

Challenges associated with multi-modal transportation for India

- ① Lack of convergence across different schemes
 Ex: PM Gram Sadak Yojana and Dedicated Freight corridors should be considered as addressing a common objective thus increasing synergies between the two.
- ② Poor last-mile connectivity, transit-oriented development plans
- ③ Lack of sufficient funding from the government, ineffective utilisation of capital market
- ④ Minimal private sector participation both in terms of investments and operations
- ⑤ Poor technology adoption at terminals

- ⑥ Lack of coordination across different ministries and states

Some of the opportunities associated with multi-modal transportation includes:

- ① Increase inter-state, intra-state trade
- ② Increasing exports, as pointed out around 30% of goods either originate or are destined to hinterlands in foreign trade (NITI Aayog)
- ③ Bring down logistics cost to 10% from 14%.
- ④ Spur private investments leading to a multiplier effect
- ⑤ Schemes like Sagarmala (port led development) would ensure overall development of people concerned.

Infrastructure is one of the crucial pillars of an economy, as understood from unveiling of 'National Infrastructure Pipeline'. It has to be increasingly oriented towards multi-modal format.

14. Indian labour in ~~the~~ the times of COVID 19 pandemic has seen differentiated challenges according to the nature of their terms of employment. with more than 60% informal employment against around 30% of formal within the organised sector alone, the challenges of unorganised sector which is source for more than 80% employment could not be imagined.

How COVID 19 exposed the vulnerabilities

- ① Lack of social security benefits to informal workers - loss of income and medical expenses mounted
- ② Easy termination by the employers while formal workers were given notice and benefits
- ③ Has seen ad hoc reduction in salaries
- ④ Lack of food security and housing ldr to (portability of PDS limited)

mass exodus to their homes

- ⑤ Lack of effective grievance redressal
including adequate state support
- ⑥ Administrative apathy to informal workers
exacerbated the crisis
- ⑦ Ability for formal employees to work at home
while the very nature of informal employees
prohibits the same
- ⑧ Lack of sufficient data about this number
and grievances made policy support difficult

However, the informal sector also faced several
challenges including:

- ① Lack of effective credit availability to restart
and sustain business
- ② Lack of coherent policy support
- ③ Supply-chain disruptions affected their
input supply as they depend on just-in-time
inventory
- ④ Plummeting prices and raising input cost

Nevertheless, COVID19 also presents an opportunity to rebalance formal-informal economy dynamics in the following ways:

- ① Universal social security benefits could benefit all workers
- ② would lead to increased formalization from the informal sector to enjoy the benefits
- ③ Bring in reforms like Integrated PDS, provisions for gig and platform workers in labour codes

Thus, COVID19 has given several opportunities despite the chaos. Envisioned a 'Atmanirbhar Bharat towards a more self-resilient economy'.

15. Gas currently occupies 6% of the energy basket, National Gas Policy envisages to improve it to 15% by 2030.

Drivers for a gas-based economy

- ① Relatively environmentally sustainable option compared to other fuels
- ② Increases energy efficiency, consequently reducing energy intensity
- ③ Domestic resources - availability of potential to increase domestic sources (from current ~40%), will lead to decrease in import bill
- ④ Economic and social benefits accruing out of it including increased accessibility

Challenges faced by India regarding the same

- ① Lack of effective infrastructure - including gas pipelines, logistics across states

② Differential pricing system for every 300km increases the cost of gas with distance from the source.

Ex: Gas is more costly in Eastern states as it is transported from Western ports which receives ^{the} imports than in Western states

③ Lack of comprehensive policy support from the government along with incentives
Ex: Steps to government sector more gas oriented should be undertaken.

④ Government regulation of domestic gas prices, leads to ineffective price discovery

⑤ Automobile and equipment manufacturers should need to reengineer their products.

Some of the steps taken by the government includes:

① Propelling implementation of City gas

distribution system on priority for
domestic - CNG and transport - PNG

- ② Establishment of India Gas Exchange
promoting market oriented pricing for
imports
- ③ Laying down of Gas Grids, especially
North East Gas Grid, would increase
penetration
- ④ Gijwala scheme promoting LPG for
cooking fuel, one of the major success
- ⑤ Transforming public transport in Delhi
with hydrogen - CNG buses.
- ⑥ Easing Hydrocarbon exploration policies
with NELP

Moving to a gas based economy has benefits
across different sectors - climate change,
poverty eradication, industrial efficiency.
Effective implementation of measures would
go a long way in ensuring the same.

16. Climate change has significant impacts across diverse sectors including marine and coastal ecosystems, and consequently coastal population.

Dangers to marine and coastal ecosystems

- ① Increasing acidification
- ② Increasing ~~surf~~ surface temperature
- both leads to destruction of marine biodiversity as they have narrow ranges of both
- ③ Eutrophication (algal bloom) from nutrient runoff from land
- ④ Increasing ~~oxygen~~ anoxic zones, low oxygen
- ⑤ Changing intensity of currents disturbs the heat circulation across oceans
- ⑥ Melting of glaciers brings in impurities to the sea

- ⑦ reduced primary productivity on the oceans
- ⑧ destruction of coral reefs, mangroves
- ⑨ threat of invasive species

Dangers to coastal population

- ① Sea level rise endangers habitat, population, coastal economy
- ② Major cities of the world are coastal cities including Mumbai, Chennai
- ③ Reduced livelihood from fishing because of loss of marine habitat
- ④ Nutritional security concerns as fish is an important source of protein
- ⑤ Increase in storm surges, cyclones, floods leading to greater devastation
- ⑥ Loss of cultural and ethnic identities owing to habitat destruction

⑦ Threat to harbours and ports, thus
affecting shipping economy

Several steps has to be considered specifically
to address the vulnerabilities of coastal
ecosystems and population including:

① Building biological barriers against
salt water intrusion, ~~storm~~ surges by
planting mangroves
Ex: West Bengal initiative

② International Cooperation to increase
commitments like the CHD mayors
summit

③ Building climate change ^{and disaster} resilient
infrastructure

Protecting these ecosystems and populations
has to be of top priority as they are the
worst affected of climate change.

17.

Natural ecosystems including forest, water are servicing mankind in different ways including basic provisioning functions.

It also acts as an efficient hazard mitigation system in the following ways:

- ① Mangroves in the coastal waters acts as a shield against Cyclones, storm surges

Ex: During Cyclone Amphan, some thousands of mangroves was destroyed in Sunderbans, it also reduced the intensity of the cyclone

- ② Wetlands acts against salt water intrusion in the coastal areas

- ③ Himalayas in the north, a natural shield against cold air streams from

Central Asia that protects the crops
in winter season

- ④ Degraded lands and deserts acts as
firebreaks for wild forest fires
- ⑤ Natural ponds and lakes also address
urban floods with reducing the
volume of water flow in rivers
- ⑥ Open spaces with sparse vegetation
increases percolation of water
- ⑦ Dense vegetation prevents soil erosion
- ⑧ Oceans of the world absorb more than
half of the world's heat
- ⑨ Absorbing and sequestering CO₂ by
permafrost, soil organic materials

In the light of increasing disasters resulting
from climate change, thus enhancing
such natural barriers needs special
attention.

18.

Genome Sequencing refers to the mapping of DNA molecular bases (around 6 billion base pairs in an individual). It enables to understand the gene structure of an individual.

Its significance includes:

- ① Understand genetic diversity, genetic diseases
- ② Useful in medical diagnosis and treatment
- ③ throws light on the history and culture of a particular population.
- ④ enables to protect the genetic diversity

The challenges in scaling up genome sequencing projects include:

- ① Lack of infrastructure including

labs, equipments, computer systems

- ② Lack of trained adequate manpower
- ③ Lack of sufficient funding as it involves huge cost to scale up
- ④ Lack of effective data protection regime as such data involves personally identifiable information
- ⑤ Inadequate policy support from the state
- ⑥ Apprehension amongst people leading to lack of cooperation
- ⑦ Inadequate research facilities to develop on the collected data.

India recently launched the IndiGen project aiming to map around 1,00,000 populations.

19.

Internal security and external security of a nation are intimately linked. It is understood in war dynamics, that it is easy to attack a divided country as there will be several avenues to attack plus a lack of concentrated counter force.

In that context, cyber and transnational terrorism meaning computer-technology based and cross-country based attacks need attention.

This has close link with radicalisation and societal dissection in the following ways:

① Radicalisation

i) spread of extremist ideologies

- 'Lone Wolf' attacks in UK, New Zealand
- 'ransomware' attacks on government sites in US

ii) Large terrorist organisations
are this instead of a planned big
attack

- IS sponsored attacks in
India being thwarted by
National Security Agency.

② Societal Dissension

i) Spread of Islamophobia across the
world, especially Europe

- Recent knife attacks in France
- German political landscape
fuelling such tendencies

ii) Increasing xenophobia

- Attacks in Bangalore against
Bangladeshi migrants
- Assam protests against
immigrants
- General prejudice against
Kashmiri people

Societal dissection $\xrightarrow{\text{leads to}}$ radicalization

Societal dissection quickens the process of radicalization which is also caused by:

- ① Raising inequality, unemployment
- ② Lack of comprehensive policy, international cooperation (internet being boundaryless)
- ③ lax gun control regimes, relative ease of making weapons

Thus, cyber and transnational terrorism breeds on internal dissections, by nature of it is very difficult to track and prevent such attacks. Hence, addressing the root cause, of ensuring societal harmony would go a long way in addressing this crisis.

20.

Across the world, there is increasing sense of insecurity. With constant strife in Middle East, increasing 'lone wolf' attacks in Europe, China's dominance in East and South China Sea, the challenges are many.

Especially for India, the emerging security challenges include:

- ① Increasing illegal immigration from Bangladesh and Myanmar
- ② China's aggressiveness at the borderes, as well as in the South China sea (India's majority trade passes through Malacca strait), also increasing dominance in neighbouring countries through Belt and Road Initiative (Nepal's inclination towards China in the recent months)

- ③ Pakistan's attack (direct and proxy)
at the borders which promoted India's
Balakot strike
- ④ maritime security concerns with threats
of piracy in the western Indian Ocean
(Gulf of Aden and Red Sea), threatens
trade security
- ⑤ Surrounded by nuclear powers (China
and Pakistan), imminent threat to
the capital.

These security challenges present a pattern
which is



that it requires a combined response of
all three armed forces.

Ex: Pathankot strike involved both Army
and Air force

In that context, setting up of Integrated Theatre Command in Andaman and Nicobar (ITC)

— where the 3 forces jointly station and train is of great significance in defence strategy :

- ① Enables to reap the synergy between 3 forces
- ② Ensures a comprehensive response to any attack, like allowing the use of Cold start doctrine.
- ③ Increases effectiveness and efficiency in military preparedness
- ④ Opportunity to synergise procurement of weapons and vehicles
- ⑤ Enables to remove any weakness, counterbalance on each other's strength

In that regard, ITC is an important reform. Nevertheless, India needs to strengthen the entire defence apparatus in the context of mounting security challenges.