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MGP 2024

Time Allowed : Three Hours

समय : तीन घंटे



Maximum Marks : 250

अधिकतम अंक : 250

## GENERAL STUDIES / सामान्य अध्ययन

Name Of Candidate परीक्षार्थी का नाम	Prateek Joshi		
Roll No./अनुक्रमांक	1910084207	Medium/माध्यम	English <input checked="" type="checkbox"/> हिंदी <input type="checkbox"/>
Center Code/परीक्षा केंद्र	1900	Date/दिनांक	3/9/2024

\*Center Code : For Online - 1900 / Delhi : Karol bagh - 1901, ORN - 1902, Mukharji Nagar - 1903 / Patna : Boring Rd. - 2001 / Hyderabad : Jawahar Nagar - 2101

INDEX TABLE / अनुक्रमणिका			INSTRUCTION / अनुदेश		
Q. No. प्र.सं.	Max. Marks अधिकतम अंक	Marks Obtained प्राप्तांक	1. Please do furnish Name, Email, Roll No and Mobile in the answer sheet. कृपया उत्तर-पुस्तिका में नाम, ईमेल, रोल नंबर और मोबाइल नंबर भरें।		
1			2. There are TWENTY questions printed in ENGLISH & HINDI, all questions are compulsory. उत्तर पुस्तिका में अंग्रेजी/हिंदी में बीस प्रश्न दिए गए हैं, सभी प्रश्न अनिवार्य हैं।		
2			3. The number of marks carried by a question/part is indicated against it. प्रत्येक प्रश्न/भाग के लिए निर्धारित अंक उसके सामने अंकित किए गए हैं।		
3			4. Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of this Question-Cum-Answer (QCA) Booklet in the space provided. उत्तर प्रवेश पत्र में अधिकृत माध्यम में लिखे जाने चाहिए, जो कि दिए गए स्थान में इस प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के कवर पर स्पष्ट रूप से लिखा जाना चाहिए।		
4			5. Word limit in questions, if specified, should be adhered to. Any page or portion of the page left blank in the Question-Cum Answer Booklet must be clearly Struck off. प्रश्नों में शब्द सीमा, यदि निर्दिष्ट हो, का पालन किया जाए। प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गये किसी भी पृष्ठ या पृष्ठ के भाग को स्पष्ट रूप से काट दें।		
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Total/कुल अंक	250		For Student Only / केवल परीक्षार्थी प्रयोग हेतु		
Examiner's Discretion/मूल्यांकन कर्ता का विवेक :			Start Time/प्रारंभ करने का समय :	End Time/समाप्त करने का समय :	
			5:30 pm	8:30 pm	
Total Marks/कुल अंक :			Mode Of Examination/ परीक्षा की विधि :	Online/ऑनलाइन	<input checked="" type="checkbox"/>
				Offline/ऑफलाइन	<input type="checkbox"/>
*Examiner's Discretion is the marks awarded at the discretion of the examiner based on your overall impression, on the basis of (but not limited to) your handwriting, presentation, use of diagrams, flowcharts, facts and figures or absolutely anything that he/she liked in your copy. मूल्यांकन कर्ता का विवेक अंक, आपकी लिखावट, प्रस्तुति, आरेखों के उपयोग, फ्लोचार्ट, तथ्यों और आंकड़ों या समग्र रूप किसी अन्य विषय वस्तु, जो मूल्यांकन कर्ता को आपकी कॉपी में पसंद आयी के आधार पर (लेकिन इन्हीं तक सीमित नहीं) पर दिए गए अंक हैं।			For Office Use Only / केवल कार्यालय प्रयोग हेतु		
			ECN CODE/ ईसीएन कोड :	EG/ईजी :	Evaluation Date/ मूल्यांकन तिथि :
				① ② ③ ④ ⑤	

**Note:** Students are expected to incorporate suggestions from the feedback provided in the answers. Discussion classes for the tests are also available online in your portal to aid in your preparation. Further, students are requested to see the good copies of the tests and learn from them. You can also discuss your copy with a Mentor and discover ways and means to improve your answers, or if you have any issues with this test / copy. Ask specific questions, to get specific answers.

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## EXAMINER'S REMARKS

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### CRITERIA FOR THE FEEDBACK SECTION AT THE END OF EACH QUESTION

1. **AWIS = Answered What is Asked.** This means whether you have addressed the core demand of the question or not. Addressing the core demand of the question gets you an objectively fair score. It is examiner's perception if you have understood the question and if you know the answer in the first place. Creative answer writing, sometimes missing the core demand, may fetch very high or very low scores, and exposes your answer to the subjectivity of the examiner.
2. **CD & VA = Content Density & Value Addition.** Examiner will evaluate the quality and quantity of your content in the answer. In the same word limit and space limit have you (a) written what is asked (b) gone beyond what is asked (c) enriched answers through combination of ( but not all!) suggestions, ideas, quotes, flowcharts, diagrams, facts and figures, data etc. This affects objective components of assessment.
3. **S & F = Structure & Flow** = Whether you have structured your answer properly or not. Whether the answer has been broken into parts and sub-parts and each part has been addressed appropriately or not. Whether the flow of the answer is maintained. Affects both subjective and objective components of assessment.
4. **P & R** = How your answer performs on the criteria of **presentation, ease of read, clarity and apparent effort** in writing the answer. This affects the subjective components of assessment.

**Instructions: All questions are compulsory. The number of marks carried by a question/part is indicated against it. Quality of the answer is more important than the length of the answer.**

निर्देश : सभी प्रश्न अनिवार्य हैं। प्रत्येक प्रश्न द्वारा धारित अंकों को उसके सामने इंगित किया गया है। उत्तर की गुणवत्ता उत्तर की लंबाई की तुलना में अधिक महत्वपूर्ण है।

**Q.1) How far do you agree that a robust domestic demand is the most important driver of India's economic growth? What are other factors that influence the growth trajectory of the country?**  
(10 marks, 150 words)

आप इस बात से कहां तक सहमत हैं कि मजबूत घरेलू मांग भारत की आर्थिक वृद्धि का सबसे महत्वपूर्ण चालक है? अन्य कौन से कारक हैं जो देश के विकास पथ को प्रभावित करते हैं?  
(10 अंक, 150 शब्द)

**Q.2) Macroeconomic stability is not solely dependent on the quantity of foreign exchange reserves, but also on the strategy and sources on which they are built. Discuss in an Indian context.**  
(10 marks, 150 words)

व्यापक आर्थिक स्थिरता न केवल विदेशी मुद्रा भंडार की मात्रा पर निर्भर करती है, बल्कि उस रणनीति और स्रोतों पर भी निर्भर करती है जिस पर वे निर्मित होते हैं। भारतीय संदर्भ में चर्चा कीजिए।  
(10 अंक, 150 शब्द)

**Q.3) DPI (Digital Public Infrastructure) is a critical enabler of digital transformation for both businesses and citizens; however, it comes with its own set of challenges. Examine.**  
(10 marks, 150 words)

DPI (डिजिटल पब्लिक इंफ्रास्ट्रक्चर) व्यवसायों और नागरिकों दोनों के लिए डिजिटल परिवर्तन का एक महत्वपूर्ण प्रवर्तक है, हालाँकि, यह चुनौतियों के साथ आता है। परीक्षण कीजिए।  
(10 अंक, 150 शब्द)

**Q.4) The skewed emphasis on certain crops has distorted the cropping pattern in India, which has led to grave socio-economic and environmental consequences. Elaborate.**  
(10 marks, 150 words)

कुछ फसलों पर असंतुलित जोर ने भारत में फसल पैटर्न को विकृत कर दिया है, जिसके कारण गंभीर सामाजिक-आर्थिक और पर्यावरणीय परिणाम सामने आए हैं। विस्तार से चर्चा कीजिए।  
(10 अंक, 150 शब्द)

**Q.5) Private participation in propelling India's space journey is widely acknowledged but is yet to be fully tapped. In light of the statement, analyse the hurdles faced by the private sector and also recommend measures to unlock greater private participation in the space economy.**  
(10 marks, 150 words)

भारत की अंतरिक्ष यात्रा को आगे बढ़ाने में निजी भागीदारी को व्यापक रूप से स्वीकार किया गया है लेकिन अभी तक इसका पूरी तरह से दोहन नहीं किया गया है। कथन के आलोक में, निजी क्षेत्र के सामने आने वाली बाधाओं का विश्लेषण करें और अंतरिक्ष अर्थव्यवस्था में अधिक निजी भागीदारी को बढ़ाने के उपायों की भी सिफारिश कीजिए।  
(10 अंक, 150 शब्द)

**Q.6)** With recent advances in technology, robots are now equipped to perform more than just conventional and routine tasks, which brings new opportunities as well as risks. In this context, evaluate the future potential of the robotics sector. (10 marks, 150 words)

प्रौद्योगिकी में हालिया प्रगति के साथ, रोबोट अब पारंपरिक और नियमित कार्यों के अलावा और भी बहुत कुछ करने में सक्षम हैं, जो नए अवसरों के साथ-साथ जोखिम भी लाता है। इस संदर्भ में रोबोटिक्स क्षेत्र की भविष्य की संभावनाओं का मूल्यांकन कीजिए। (10 अंक, 150 शब्द)

**Q.7)** Write an explanatory note on the causes and impacts of avalanches. Also, highlight the various strategies to mitigate its impact, with a special emphasis on NDMA guidelines. (10 marks, 150 words)

हिमस्खलन के कारणों और प्रभावों पर एक व्याख्यात्मक नोट लिखिए। साथ ही, NDMA के दिशानिर्देशों पर विशेष जोर देते हुए इसके प्रभाव को कम करने के लिए विभिन्न रणनीतियों पर प्रकाश डालिए। (10 अंक, 150 शब्द)

**Q.8)** Technology plays a multidimensional role in augmenting the disaster management apparatus of the country. Discuss. Also, bring out the measures needed to enhance the usage of such technologies in managing disasters. (10 marks, 150 words)

प्रौद्योगिकी देश के आपदा प्रबंधन तंत्र को बढ़ाने में बहुआयामी भूमिका निभाती है, चर्चा कीजिए। साथ ही, आपदाओं के प्रबंधन में ऐसी प्रौद्योगिकियों के उपयोग को बढ़ाने के लिए आवश्यक उपाय भी बताएं। (10 अंक, 150 शब्द)

**Q.9)** Outlining the various cyber threats faced by India, assess the state of the country's preparedness to deal with the same. (10 marks, 150 words)

भारत के सामने आने वाले विभिन्न साइबर खतरों को रेखांकित करते हुए, उनसे निपटने के लिए देश की तैयारियों की स्थिति का आकलन कीजिए। (10 अंक, 150 शब्द)

**Q.10)** Explain how the geographical location of India makes it extremely vulnerable to the menace of drug trafficking. What are the various internal security threats posed by drug trafficking? (10 marks, 150 words)

समझाइए कि भारत की भौगोलिक स्थिति इसे मादक पदार्थों की तस्करी के खतरे के प्रति बेहद संवेदनशील बनाती है। मादक पदार्थों की तस्करी से उत्पन्न विभिन्न आंतरिक सुरक्षा खतरे क्या हैं? (10 अंक, 150 शब्द)

**Q.11)** Inclusive growth is a roadmap to intergenerational equity, redistribution of wealth, and employment generation. Explain. Also, discuss the steps taken by the government towards achieving inclusive growth. (15 marks, 250 words)

समावेशी विकास अंतरजन्मपदीय इक्विटी, धन के पुनर्वितरण और रोजगार सृजन के लिए एक रोडमैप है, समझाइए। साथ ही, समावेशी विकास प्राप्त करने की दिशा में सरकार द्वारा उठाए गए कदमों पर चर्चा कीजिए। (15 अंक, 250 शब्द)

**Q.12)** Discuss the significance of Multimodal Transport System in achieving last mile connectivity, improving logistics efficiency, and addressing the twin problems of pollution and congestion. What measures can be taken to ensure efficient multimodal transport connectivity in India?

(15 marks, 250 words)

अंतिम मील तक कनेक्टिविटी प्रदान करने, लॉजिस्टिक्स दक्षता में सुधार करने और प्रदूषण और भीड़भाड़ की दोहरी समस्याओं के समाधान में मल्टीमॉडल ट्रांसपोर्ट सिस्टम के महत्व पर चर्चा कीजिए। भारत में कुशल मल्टीमॉडल परिवहन कनेक्टिविटी सुनिश्चित करने के लिए क्या उपाय किए जा सकते हैं?

(15 अंक, 250 शब्द)

**Q.13)** Highlighting the rationale behind declaring MSP, discuss various issues related to the MSP regime in the country. Also, critically analyse the efficacy of legalizing MSP towards ensuring financial sustainability in farming.

(15 marks, 250 words)

MSP घोषित करने के पीछे के तर्क पर प्रकाश डालते हुए देश में MSP व्यवस्था से संबंधित विभिन्न मुद्दों पर चर्चा कीजिए। साथ ही, कृषि क्षेत्र में वित्तीय स्थिरता सुनिश्चित करने की दिशा में एमएसपी को वैध बनाने की प्रभावकारिता का भी आलोचनात्मक विश्लेषण कीजिए।

(15 अंक, 250 शब्द)

**Q.14)** Food Processing Industries (FPIs) can act as a bridge between the informal farming community and the formal industrial sector, which can help boost the rural economy. Examine.

(15 marks, 250 words)

खाद्य प्रसंस्करण उद्योग (FPIs) अनौपचारिक कृषक समुदाय और औपचारिक औद्योगिक क्षेत्र के बीच एक पुल के रूप में कार्य कर सकते हैं, जो ग्रामीण अर्थव्यवस्था को बढ़ावा देने में मदद कर सकता है। परीक्षण कीजिए।

(15 अंक, 250 शब्द)

**Q.15)** Discuss the role of biotechnology in enhancing agricultural productivity. Also, highlight the concerns regarding the application of biotechnology in agriculture.

(15 marks, 250 words)

कृषि उत्पादकता बढ़ाने में जैव प्रौद्योगिकी की भूमिका पर चर्चा कीजिए। साथ ही, कृषि में जैव प्रौद्योगिकी के अनुप्रयोग से संबंधित चिंताओं पर प्रकाश डालिए।

(15 अंक, 250 शब्द)

**Q.16)** 5G technology is a breakthrough that finds applications across diverse sectors. Elaborate. How is 5G technology different from its predecessor? Also, list the various challenges associated with its effective rollout.

(15 marks, 250 words)

5G तकनीक एक ऐसी उपलब्धि है जिसका अनुप्रयोग विभिन्न क्षेत्रों में होता है। विस्तार से चर्चा कीजिए। 5G तकनीक अपने पूर्ववर्ती से किस प्रकार भिन्न है? साथ ही, इसके प्रभावी कार्यान्वयन से जुड़ी विभिन्न चुनौतियों को भी सूचीबद्ध कीजिए।

(15 अंक, 250 शब्द)

**Q.17)** Discuss the repercussions on marine ecosystem and economy resulting from the combined effects of ocean acidification, ocean warming, and oxygen loss.

(15 marks, 250 words)

समुद्र के अम्लीकरण, समुद्र के गर्म होने और ऑक्सीजन की हानि के संयुक्त प्रभावों के परिणामस्वरूप समुद्री पारिस्थितिकी तंत्र और अर्थव्यवस्था पर पड़ने वाले प्रभावों पर चर्चा कीजिए।

(15 अंक, 250 शब्द)

**Q.18)** The invisible nature of groundwater is a major obstacle in the path towards achieving the twin objectives of building climate resilience and meeting the Sustainable Development Goals (SDGs). Elucidate. (15 marks, 250 words)

भूजल की अदृश्य प्रकृति जलवायु लचीलेपन के निर्माण और सतत विकास लक्ष्यों (SDGs) को पूरा करने के दोहरे उद्देश्यों को प्राप्त करने की राह में एक बड़ी बाधा है। स्पष्ट कीजिए। (15 अंक, 250 शब्द)

**Q.19)** Despite various efforts, a lasting solution to the insurgency in the north-eastern region of India remains elusive. Analyse the reasons behind the continuation of insurgency in the region. Also, suggest effective measures to tackle it. (15 marks, 250 words)

विभिन्न प्रयासों के बावजूद, भारत के उत्तर-पूर्वी क्षेत्र में उग्रवाद का स्थायी समाधान अस्पष्ट बना हुआ है। क्षेत्र में उग्रवाद जारी रहने के पीछे के कारणों का विश्लेषण कीजिए। साथ ही इससे निपटने के लिए प्रभावी उपाय भी सुझाएं। (15 अंक, 250 शब्द)

**Q.20)** While developmental initiatives have a significant role to play, they alone cannot root out terrorism/militancy in Jammu and Kashmir. Comment. (15 marks, 250 words)

हालांकि विकासात्मक पहलों की महत्वपूर्ण भूमिका है, लेकिन वे अकेले जम्मू-कश्मीर में आतंकवाद/उग्रवाद को जड़ से खत्म नहीं कर सकते हैं। टिप्पणी कीजिए। (15 अंक, 250 शब्द)

(Please do not write anything except the question number in this space)

कृपया इस स्थान में प्रश्न संख्या के अतिरिक्त कुछ न लिखें।

# UPSC

Answer Questions in NOT MORE THAN the Word Limit specified for each in the Parenthesis.  
Content of the Question is more important than length.  
( Specimen Answer Booklet - For Practice Purpose Only)

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए।  
Candidates must not write on this margin

Q1

The domestic demand as reflected by the Private Financial Consumption Expenditure (PFCE) constitutes 57% of total GDP & hence becomes major driver of India's Economic Growth.

Domestic Demand as important driver

- ① Incentivises the companies to secure production supplies.
- ② Domestic demand for particular commodity nudges government for subsequent policymaking.  
 (Ex) Demand for ~~cost~~ wearables
- ③ It ~~uplifts~~ <sup>reduces</sup> the recessive tendencies spurring in market through capital supply.
- ④ Helps in appropriate resource allocation
- ⑤ Demand for ~~of~~ public goods decides

(Please do not write anything except the question number in this space)

कृपया इस स्थान में प्रश्न संख्या को अतिरिक्त कुछ न लिखें।

# UPSC

Answer Questions in NOT MORE THAN the Word Limit specified for each in the Parenthesis.  
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governments budgetary allocations.

## Other factors influencing Growth

- ① Foreign Investment in form of FDI, FPI & Remittances.
- ② 'Invisible hand of market' coupled with 'Principled hold of institutions'.
- ③ Savings by retail consumers eventually turning into investments  
(India's Saving Rate ~30%)
- ④ Innovations & IPR regulation to facilitate innovation.
- ⑤ ~~Support~~ Government support through Capex as India's Capex has Growth multiplier of 2.45 (RBI)

Thus, domestic demand important & component of overall India's growth story towards being a developed nation by 2047.

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Q2

India's has cushioned forex reserves of >\$600 USD which acts as a source of macroeconomic stabilizer (RBI).

Macroeconomic stability depending not just on quantity of forex reserves

- ① The strategy of whether forex is achieved through FDI or FFI
- ② The provisioning for allocation & extent of foreign participation limits in a particular sector.  
 Ex Insurance FDI increased from 49% to 74%.
- ③ whether it is money "hot-money" flowing in just because of favourable interest rate regime.
- ④ Stability depends upon where investing companies are robust

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Or just shell companies doing round tripping of funds.

⑤ Whether motive is to create sectoral monopolies or to fuse in technology transfers.

Ex) Walmart's investment in Flipkart

Ways to ensure Macroeconomic stability in face of high forex inflow

- ① Regulatory bodies like SEBI, RBI to trace source of funds.
  - ② Competition Commission of India to curb monopolistic tendencies.
  - ③ Inflation control through LAF adjustments by MPC.
  - ④ Focus on making exports robust through schemes like RoDTEP.
- Thus, focus as a robust Macroeconomic stability indicator as <sup>seen</sup> from historical 1991 BoP crisis.

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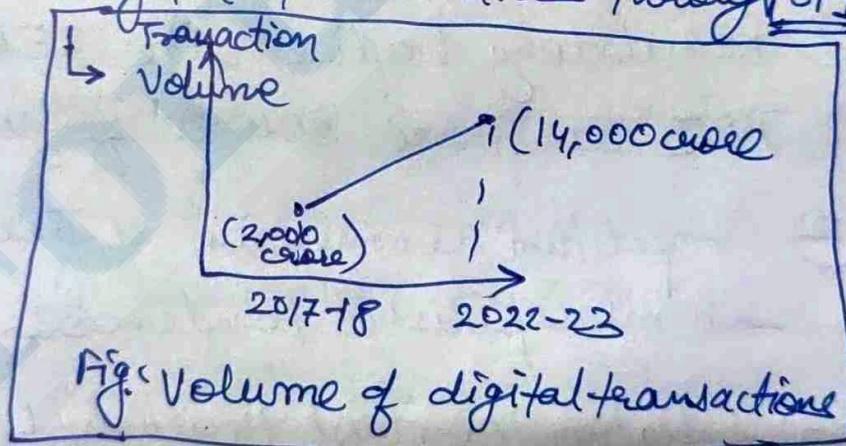
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Q3

The recent announcements regarding Unified lending Interface (ULI) and AgriStack indicates the growing salience of DPI as critical enabler of digital transformation.

DPI as enabler of transformation

① Shift from cash-based transactions to digital transactions through UPI



② Aadhar as a means to secure government services effectively

③ Digilocker for online identity management.

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- DPI
- ④ Secures rights of vulnerable sections like women, tribals through financial inclusion. Ex JAM trinity
- ⑤ 'India stack' helping in generating export economy & improved forex.

## Challenges of DPI

- ① Digital divide across geographies, (rural-urban), genders (men-women) and generations (elderly vs young)
- ② Device cost still high.
- ③ Service integration in vernacular languages still missing
- ④ Data Privacy & Identity theft issues.

DPI is a transforming tool & can as Nandan Nilekani argues "This can act as digital highways which will carry the citizens towards better & developed India".

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Q4

The post-Green Revolution Indian Agriculture has been marked by cereal centric crop production system resulting in skewed market dynamics.

Skewed emphasis on certain crops

- ① Rice & wheat as primary production in Punjab & Haryana.
- ② water guzzlers like sugarcane concentrated in Western UP belt
- ③ focus towards MSP generating crops rather than market demand or export orientation.  
[Ex] Horticulture neglected.
- ④ Millets relegated as secondary crops despite having great nutritional ability

## ④ Socio-Economic & Environmental consequences of skewedness

- ① 'Islands of prosperity' among 'seas of poverty' in Green Revolution Areas of Punjab, Haryana & West of
- ② Rise of class distinction leading to conflicts & violence  
 Ex) Jats vs "others" in Haryana
- ③ Water table degraded to in ~70% of Indian districts (JSRG Atlas)
- ④ Stubble Burning Issues leading to pollution.
- ⑤ Excessive fertilizer use leading to soil degradation (N:P:K :: 8:3:1 in Punjab)

Thus, Nudging by government through effective incentive mechanisms ~~like~~ is need of hour to resolve agrarian distress.

# UPSC

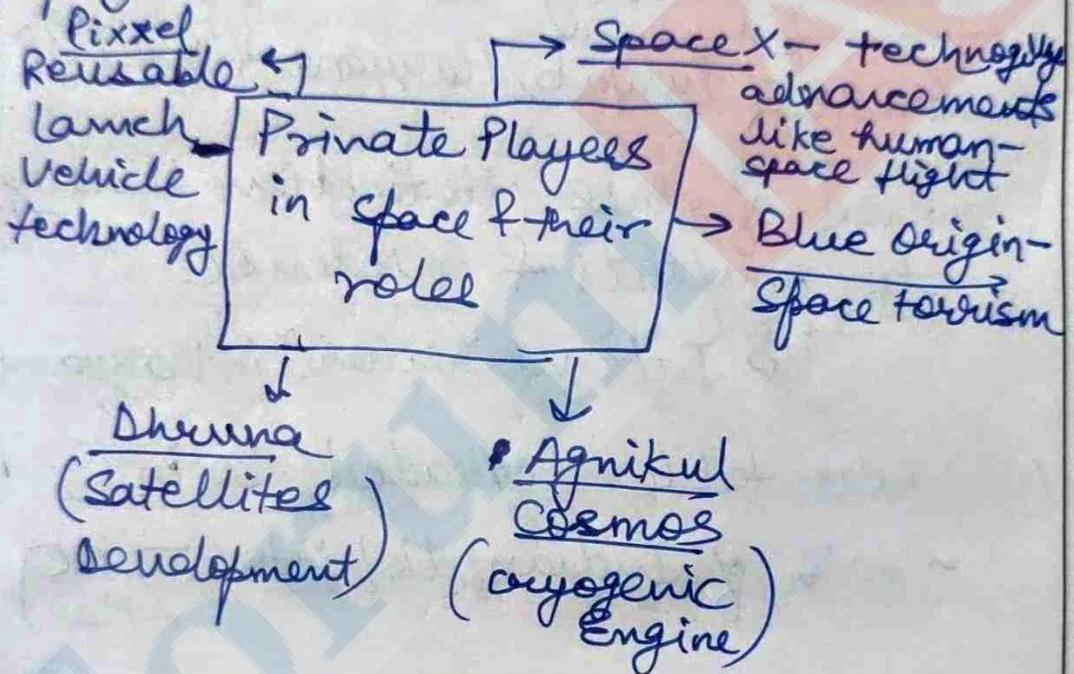
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Q5

Indian Space sector is valued to be ~8 Billion USD but has been largely seeing only ISRO as major player.



## Hurdles faced by Private sector

① High investment required & skewed returns as an investor

Ex) SpaceX failed testing for 8 years from 2008

② Regulatory bottlenecks due to poor coordination among government

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③ Skilled manpower not readily available

Ex India's concentration in IT sector

④ Many stop at dwarf role of satellite production or ancillary systems manufacturing.

## Measures to unlock participation

① Clear demarcation of roles of government regulatory bodies

Ex: India Space Policy 2023 designates InSPACE as nodal authority

② Technology transfer by sovereign institutions like ISRO, BARC etc.

③ Allow incubation of private companies within ISRO itself to gain experience & expertise.

Space Exploration bound to revolutionize in near future & Private Participation necessary to secure the untapped potential.

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Q6

Robotics sector's progress have seen manifold jump due to AI capabilities and cognitive abilities via large language models (LLMs) in recent time.

Robots equipped to perform more tasks

- ① Earlier Robots were just programmed, now they are self-learning algorithmic
- ② Driverless Cars as example of complex decision-making by Robotic systems
- ③ With processing abilities, competing with humans  
 ↳ Robots in chess tournaments
- ④ Facial Recognition Technology have made robots as potent tools for identification of beneficiaries.
- ⑤ Compressed robots in form of



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implanted biochips, giving new dimensions to life. AI - Neuralink

Risks

- Robotic Supremacy as a Frankenstein monster
- Workforce to turn into Reserve Army of labour
- Intrusive to human privacy.

Future Potential

- ① With Artificial General Intelligence (AGI), more cognitive abilities.
- ② ~~the~~ Nature of work will shift towards effective prompting of robots.
- ③ More focus on risk management instead of new development.
- ④ Robots might ~~now~~ generate new insights like Parallel Universes etc.

Robotics in sunrise sector with huge growth potential. Need to skill the workforce to reap its benefits.

Q7

Avalanches are to a large mass of snow, ice in swift motion down a mountain.

## Causes of Avalanches

- ① Tectonic Activities beneath mountains.
- ② Melting of ice sheet.
- ③ Percolation of water downside weakening the glaciers.
- ④ Human interference like mining, deforestation, Tourism activities
- ⑤ Earthquakes leading to Avalanche

## Impacts

- ① Loss of infrastructure & damage to public infrastructure  
 ↳ Telecom Lines damaged.

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② Humane life loss & morbidities  
↳ Anavalanche of manaslu  
Peak killing 10 mountaineers

③ loss of livelihood due to damage to tourism.

④ Damage to agriculture & forests.

⑤ Top-soil eroded alongwith glacial force

## Strategies to mitigate impacts

① drone-surveillance & heatmap analysis to find vulnerabilities.

② local information gathering from Sherpas & mountaineers.

③ Impact area temporary rehabilit<sup>n</sup> until normalcy restored.

④ Secure critical Infrastructure like power & water supplies.

⑤ Providing satellite communication tech to local to get Real-time information



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Q8

Realizing the important role of technology, the Disaster Management Amendment Bill, 2024 prescribes technology as important & necessary partner in Disaster Management Preparedness.

## Multidimensional Role of Technology

- ① GIS-based survey, heatmaps with help of ISRO's ResourcesAT
- ② Seismicity monitors, water level sensor, Ice thacher sensors provide real-time information of potential disasters.
- ③ During disasters, satellite communication with victims & local people.
- ④ Delivery of essential services via drones in affected areas.
- ⑤ Simulation Models to check systemic capabilities.

## Measures needed to enhance usage

- ① Special training to NDRF teams from technology experts.
- ② Regular updating of hazard mapping & tracking of sensor data
- ③ Integrated command centres to convert information into insights.
- ④ Modular Infrastructure to be installed in disaster prone areas, so that timely rehabilitation can be done  
↳ Odisha on Puri coast.

Disasters provide a very small window to react & respond. Effective use of technology can enhance the decision-making during those times

Q9

With >90 crore internet users (Invest India), India facing severe cyberthreats in recent times.

### Cyberthreats faced by India

- ① Ransomware attacks on critical infrastructure.  
 Ex → Attack on SBI Servers.
- ② Data Privacy & Identity theft issues  
 Ex → Zomato data leak.
- ③ Phishing attacks directed towards vulnerable section like elderly.
- ④ Cyber espionage to leak national secrets  
 Ex → DRDO engineer honeytrapped

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## Preparedness of Country

- ① Cert-IN as nodal agency to deal with cyber threats.
- ② NCIIPC to secure critical infrastructure.
- ③ India ranked 10<sup>th</sup> in Global Cybersecurity Index suggesting robustness of system.
- ④ Private players like Lucidense Tech to secure payment system like BHIM UPI.
- ⑤ Academia Research through cybersecurity curriculum in IITs.

Thus, Cybersecurity emerging as 5<sup>th</sup> dimension of warfare where subtle warriors are ready to challenge sovereignty entities

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Q/10

The strategic placing of India gives it a classification of not just a nation but a subcontinent through via its diverse boundaries

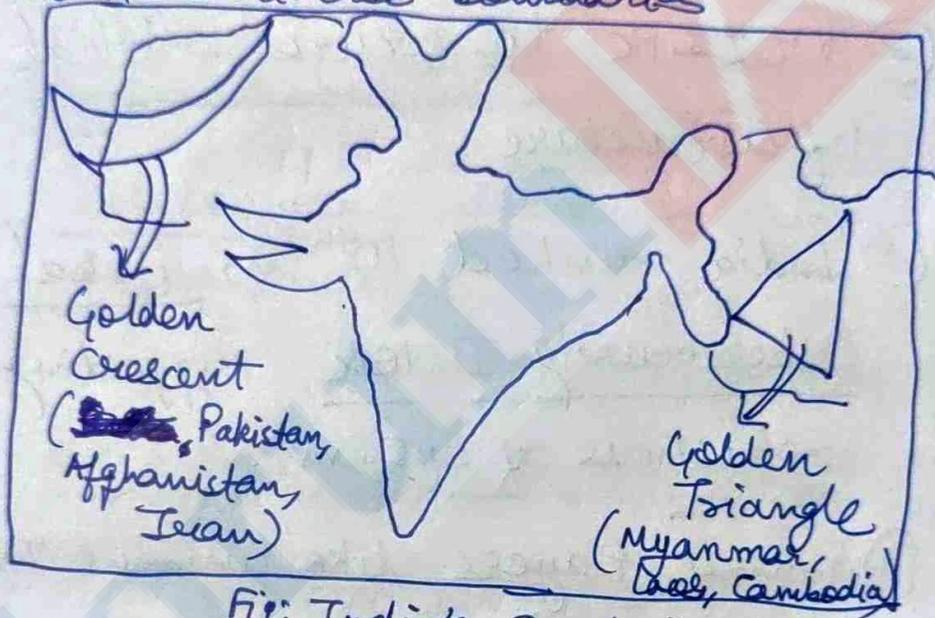


Fig: India's Sandwiched location between Golden Triangle and Golden Crescent.

## India's Vulnerability to Drug Trafficking

- ① Drug Trafficking as an organized crime in neighbourhood.
- ② Porous borders with Myanmar enabling drug syndicates.



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③ Production in Golden Crescent reaching towards India via illegitimate networks

④ India's Maritime borders prone to drug influx (~7500 km)

↳ 4000 kg drugs at Mundra Port

## Threats Posed by Drug Trafficking

- ① local gangs joins drug traffickers in supply chain.
- ② Instability in Kashmir Valley & in Northeast.
- ③ Drug Addictions in border states like Punjab
- ④ Drug Trafficking in syndicate with Terrorism act as double whammy.
- ⑤ Opium from Malwa belt trafficked to Pakistan.

Thus, Drug Menace is twin problem of "Wolf at door & Termites at base". Need separate Task Force to deal with it effectively.

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Q11

According to OECD, Inclusive Growth refers to growth that is distributed across different sectors & strata of society.

Roadmap to to intergeneration Equity, wealth redistribution & Employment

① Allows all section of society to participate in production process.

↳ Tribals products marketing through TRIFED.

② Ensure that growth is not regionally concentration -

↳ District Export Hub Schemes.

③ Wealth Redistribution through new entrepreneurship & employment opportunities -

↳ PLI schemes.

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④ Intergenerational Equity through market opportunities, ~~use~~ social security net & welfare schemes <sup>for elderly.</sup>  
 Ex) SACRED portal, to boost silver economy.

⑤ It checks market externalities, informational asymmetry & secure consumer interest.  
 Ex) Regulations against shadow patterns by E-commerce like subscription traps.

Steps taken to achieve inclusive Growth

- ① Financial Inclusion through JAM trinity.
- ② Boost to ~~entre~~ Entrepreneurship through Make in India, PM JANMAN (tribals) &.

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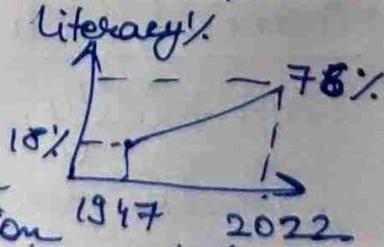
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- ③ Increased internet penetration through BharatNet Project to curb digital divide.
- ④ Social security measures like labour code 2020 for ~~the~~ labour protection
- ⑤ NITI Aayog's efforts in data-based inclusive decision making & innovative solutions  
 ex) SDG Index, Atal Innovation Mission.

## India Story

- 24.87 escaped Multi-Dimensional Poverty between 2014 & 2023
- Literacy Rate  Literacy%  
 18% 78%  
 1947 2022
- Female labour Force Participation Rate - 38% (equal factors in development)
- 780 crore individuals nutrition secured via PM Garib Kalyan Anna Yojana (PMGKAY)



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Q12

Multimodal Transport systems refer to integrating different transport modes with production systems so as to ensure secure & consistent logistical Network.

## Significance

### Improving Efficiency

- ① Reduction of waiting times.
- ② Informal transportation requires beriber on checkpoints
- ③ Security of delivery leading to less pilferage
- ④ Bring logistics down to 8% from current

### Achieving last mile connectivity

- ① Industrial hubs easy connectivity
- ② Promotion of MSMEs
- ③ Ports currently are burdened with warehousing
- ④ Gain advantage of large railway network

13-14% of GDP

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## Addressing the twin problem

### Pollution

- ① Road Transport highly polluting.
- ② Inland Waterways cheap as well as "green"
- ③ Transport vehicles still using BS-4 vehicles.
- ④ Technology transfer across different modes.

### Congestion

- ① Railways highly congested in Central India
- ② High density of trucks in night cause time loss as well as accident chances
- ③ Inland Waterways potential can be utilized.

## Measures to ensure efficiency

- ① Central Coordinate Authority to manage operation of network.



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② Multimodal transport as priority under PM Gati Shakti Plan

③ Development of new modes like UAVs for service delivery.

④ Ancillary Infrastructure like charging stations for EV needed

⑤ Viability Gap Funding for Private Player Participation across Supply Chain.

⑥ In difficult terrains, coordination with Army/Paramilitary to ensure logistical connectivity.

The silos & monopolies of ~~particular~~ single-mode transport <sup>has</sup> curbed EoDB. Time for integrated <sup>transport</sup> system to ~~redo~~ ensure growth of India's manufacturing capabilities.

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Q13

MSP is government price mechanism across 23 crops to ensure support to growing farmers via adequate compensation for their production.

## Rationale behind MSP

- ① To Provide safety net to otherwise 'monsoon' dependent Indian Agriculture.
- ② Latently acts as nudging agent to secure production of particular crops.
- ③ Ensure Food Safety to for such huge population.
- ④ Ensure that farmers get are adequately not exploited in market dominated by industrialists.

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## Issues Related to MSP Regime

- ① skewed Production of few crops  
 ↳ wheat, Rice overproduction.
- ② Compulsory government purchase leads to stockpile + rot in FCI warehouses.
- ③ Market Distorting Mechanism through government intervention.
- ④ Basket ~~of~~ MSP crops is irrational  
 ↳ Millets not getting MSP.
- ⑤ Despite MSP, ~~restrictions~~ of APMC Act, puts farmers in clutches of 'Artiyas' (middlemen)
- ⑥ It curbs contract farming which is necessary to achieve economies

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of scale (India's average farm  
size 1.1 ha (Agri Census))

## Efficacy of legalizing MSP

### Positives

- ① Safety Net for farmers
- ② Ensures food & nutrition supply
- ③ Distressed situations like Pandemics can be handled better.

### Negatives

- ① Wastage through FCI procurement
- ② Market distorting Sehen idea
- ③ Cereal-based production only
- ④ Price determination by government may be imperfect
- ⑤ Increased Food Inflation which constitutes 48% of CPI basket.

Case Study - Rythu Bandhu scheme  
of Telangana based on Price Deficiency  
Payment as alternate model to MSP

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Q14

Food Processing Industry refers to industries which are associated with changing raw agricultural produce & make it convenient for market-based economy.

Ex) Increasing shelf life.

FPI as bridge

- ① Improve characteristic & ~~stuff~~ of raw materials
- ② Ensures backward & forward linkages through contracts.
- ③ Consortium-based formation of farmers being in contact with FPIs leading to improved availability
- ④ Can provide crop insurance to farmers & in return get fixed supply.

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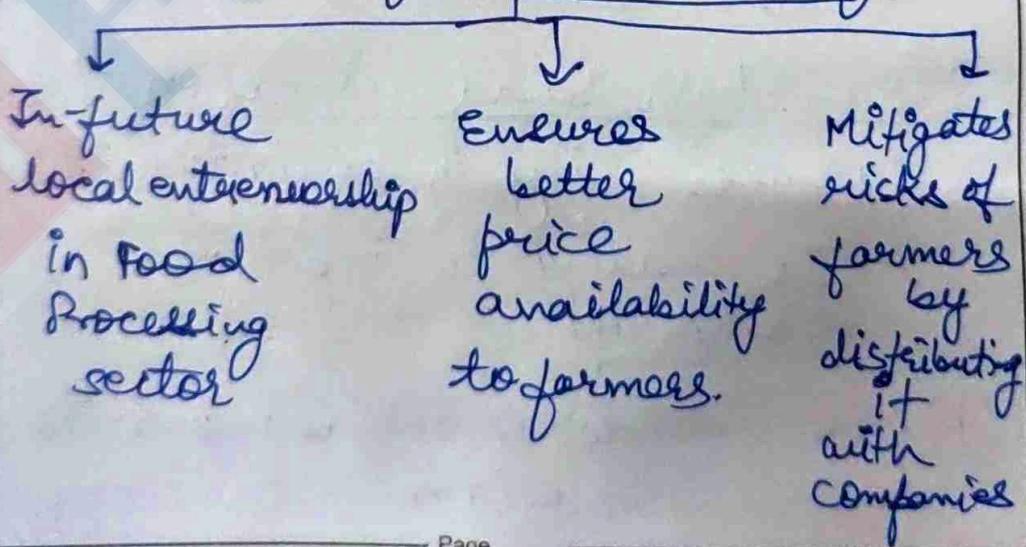
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- ⑤ Allow local products to reach to global markets through effective marketing & supply-chain capabilities
- ⑥ Ensure technology transfer from industrial sector to the farmers.
- ⑦ Make the market forecasts available to farmers regarding which crop to plant.
- ⑧ ~~to~~ Make product specifications as per the demands of FMCG companies.

## FPI boosting rural economy



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## Measures of government to boost FPI

- ① PM SAMPADA to build Mega Food Parks.
- ② PLI scheme in Food Processing Sector.
- ③ Industry - Academia linkage so as to enable access to latest research.
- ④ Make in India Scheme having pillar to turn FPI companies into 'Mittelstand' companies to boost exports.

With growing population pressure, Food Processing Industry is the only panacea to secure nutritional needs of India's bright 'demographic dividend'

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Q15

Biotechnology refers to usage of biological systems & processes in augmentation with <sup>other</sup> technology to ensure efficiency in products & services.

Role of Biotechnology in enhancing Agricultural Productivity

- ① Upgrading nutrient profile of soil through bioremediation techniques for curbing pollution.
- ② Improved seed quality through genetic engineering
- ③ Development of GM crops which can face pest attacks & harsh climatic conditions. BT Cotton.

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- ④ Biosensors to check nutritional needs of crops & providing timely intervention.
- ⑤ Biofertilizers to improve crop yield & reduce damage to soil  
Ex Sulphur coated urea.
- ⑥ Mechanisms for Generation Biofuels which can convert agri residue into fuels, thus true increasing productivity.  
Ex Ethanol from Bagasse.
- ⑦ Biopesticides & insecticides to protect crops from damage

Concerns regarding Application

- ① Long term soil impacts needs to be studied further.

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② ~~low~~ With mechanism like 'Terminator Genes' corporatization of agriculture, making farmers vulnerable -

③ Intervention in natural processes can lead to ~~eg~~ low yield  
 ➤ Pink Bollworm attack on Bt Cotton.

④ <sup>Biotech</sup> Agriculture produce when consumed by humans can lead to health issues.

⑤ Technology is expensive, favours rich farmers more.

Biotechnology should be coupled with effective regulations in order for it be a ~~source~~ viable source of agricultural transformation.

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Q/6

5G Technology is the recent mobile network ~~the~~ system & has gained increasing adoption as reflected in Internet Penetration reaching >90 crore users in India  
 (Invest India)

Difference between 5G & its predecessor

- ① High data ~~transfer~~ transfer rates.
- ② Low latency which allows real-time communication possible
- ③ Interoperability across devices leading to IoT systems
- ④ Use MIMO radio antenna technology to improve network antenna.

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## Applications across diverse sectors

- ① Internet Streaming - revolutionized  
Youtube & Social Media adoption -
- ② Extended Reality - AR, VR,  
metaverse possible.
- ③ Education - Growth of Ed-Tech  
and enhanced learning outcomes  
through interactive learning.
- ④ Digital Payments - Backbone of  
India's DPI Architecture
- ⑤ Home Appliances - Smart Acs,  
Refrigerators leading to increased  
convenience.
- ⑥ Last Mile Government service  
Delivery - Aadhaar Authentication  
based PDS

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## Challenges associated

- ① Data is cheap but devices are expensive.
- ② Increased threats of cyberattacks, data privacy issues.
- ③ 5G is good for short-range. For long-range multiple towers needed.
- ④ Radiation hurts natural ecology like birds.
- ⑤ Oligopoly in telecom market with other companies not being able to achieve viability.
- ⑥ Spectrum is ~~densely~~ ~~popo~~ congested, leading to low-effective speeds.  
5G is a revolutionary technology which can act as positive multiplier force across myriad industries.

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Q17

IPCC 6<sup>th</sup> Assessment report argues that 70% of marine ecosystems presently are under threat of destruction due to climate change

## Repercussions on Marine Ecosystem

- ① Oxygen loss leading to biodiversity loss damage as marine animals get insufficient supplies
- ② Ocean Acidification leading to coral bleaching which are the 'rainforests' of the oceans.
- ③ Ocean Acidification leading to plankton loss as they have low tolerance to extreme pH levels.

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- ④ Oxygen loss amplified by marine pollution leading to algal blooms  
Ex: Pacific ~~Garbage~~ Garbage Patch
- ⑤ Increased cyclones & other disasters due to ocean warming threatening species survival.

### Repercussions on Marine Economy

- ① Traditional fishing grounds getting damaged
- ② Advanced cultivations like sea-weed etc. are losing yield
- ③ Contamination of marine species leading to slowdown in sea-food industry.
- ④ Small Island Developing Islands (SIDS) fear for survival due

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to rising sea levels. ~~Ex~~ Tunaku

## Measures to Protect Marine Ecosystem

- ① Global initiatives like CARI for protection of vulnerable countries
- ② Polluter Pays Principles to curb Marine Pollution.
- ③ INDC based curbing under Paris Agreement to secure Marine Ecosystems.
- ④ BBNJ treaty to secure protection of open oceans through Marine National Park like structures.

Oceans cover 770% of Earth's Surface. Imperative to protect & restore marine ecosystems for survival of humanity.

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Q18

India is largest extractor of groundwater in world (25% of global extraction).

## Invisibility of Groundwater as obstacle

- ① Incessant Borewells without regard for natural aquifers.
- ② Outdated groundwater ~~source~~ level analysis leading to inaccurate picture of crisis.
- ③ Government Authorities complacent in implementing laws.
- ④ Building climate resilience requires attitudinal changes  
 ↳ Excess groundwater extraction acts as convenience & resistance to change.

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⑤ Groundwater ~~crisis~~ <sup>hazards</sup> are not observed only the disasters lead to response

⑥ Concretisation in metropolies leads to puncture of aquifers. Derivates from SDG Goal 11 of sustainable cities.

⑦ Groundwater crisis exacerbated by anthropogenic ~~impacts~~ impacts on climate

⑧ Focus only on stopping the extraction & not on recharging the system.

→ techniques like "sponge cities"

Measures to remove obstacles

① Gandhian principles of "sustainable

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Living" based on needs to be implemented

⇒ LIFE Mission.

- ② Part Include Groundwater Conservation under "Green Credits Program".
- ③ Program like "Aspirational District Program" to rank & reward districts based on efforts.
- ④ Illegal borewells to be curbed.

The recharge cycle of groundwater is very complex. Government Regulation coupled with positive nudge is the way ahead to solve this crisis.

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Q19

The recent Kuki-Meitei conflict in Manipur, has being back North-East into ~~to~~ blackhole of insurgency.

Reason behind continuation

① developmental deficit leading to dissonance with state  
 Ex → Demande for "Greater Nagalim".

② Gaslighting by foreign sovereign as well as non-state actors  
 Ex → Myanmar support to Kuki rebels.

③ Government going for incidental response rather than solving the historical grudges.  
 Ex → Application of AFSPA

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④ less association with national identity & more towards own ~~culture~~ ethnic group.

⑤ ~~Bezbaruah~~ Bezbaruah Committee on ~~national~~ racial discrimination faced by North East people

## Various Efforts to achieve solution

① Peace talks and agreements with Insurgent Groups.

Ex Treaty with ULFA in Assam.

② Government providing special assistance to North Eastern States

Ex PM DeVINE scheme

③ Reduction in AFSPA region.

④ Army providing material & emotional support.

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## Effective Measures to tackle

① Use alternate channels like sports Nationalism to bring solidarity

Ex) Manipur has 5 olympians

② Ensure consultation with different ethnic groups before decision making

Ex) In Manipur, ST status to Meitais as igniting cause.

③ Check developmental deficiency through effective service delivery

④ Ensure political participation so that natives can raise their concerns

⑤ Check activities of foreign interest

The burning of Northeast is despicable site for entire nation, & needs to be curbed via  
• special focus & exclusive schemes.

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Q20 The recent terrorist attacks in J&K reflect limitations of developmental initiatives in rooting out militancy.

## Developmental Initiatives Key Role

- ① Post Article-370 abrogation, tourism & local economy boomed.
- ② With generation of employment opportunities, local militancy got curbed.
- ③ People got assurance that state is for their and not otherwise.
- ④ Fraternity among communities increased due through trade links.
- ⑤ The area can only prosper if it develops economic autonomy of its own.

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## Developmental initiatives not sufficient

- ① Radicalism needs to be curbed at grassroots level.
- ② Communication necessary with local to understand their grievances.
- ③ Lack of Political Participation is seen to be as subjugation post Article 370 abrogation.
- ④ ~~These~~ Non-state actors like LeT, JeM ~~don't let the~~ still actively recruiting youngsters.
- ⑤ Those who are not able to reap benefits of developmental initiative due to skill deficiency are attracted towards organized crime networks.

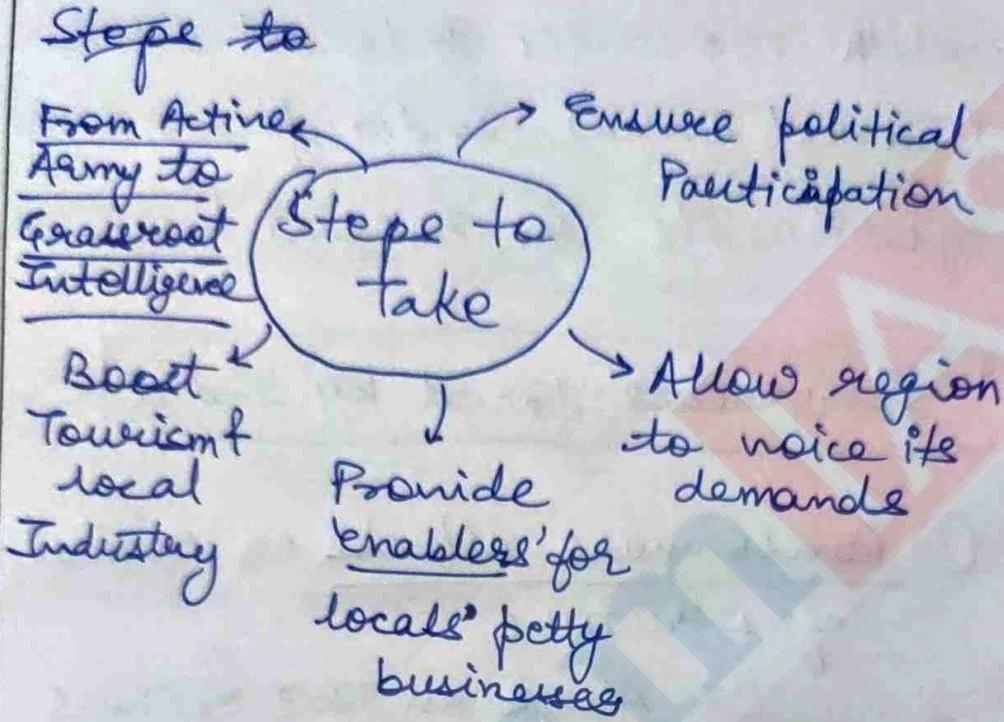
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J&K Militancy an ongoing complex issue. First Election in Valley post-370 as a means to restore back normalcy.