

**VISIONIAS**  
INSPIRING INNOVATION  
**ABHYAAS MAINS**

**सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2930)**

निर्धारित समय: तीन घंटे  
Time Allowed: **Three Hours**

अधिकतम अंक: 250  
Maximum Marks: 250

**सामान्य अनुदेश**

इस प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका में 55+1 पृष्ठ हैं। प्रश्न-पत्र, क्यू.सी.ए. पुस्तिका के अंत में संलग्न है, जो अलग (वियोज्य) किया जा सकता है और उम्मीदवार परीक्षा के उपरांत अपने साथ ले जा सकते हैं।

रफ कार्य के लिए, इस पुस्तिका के अंत में खाली पृष्ठ दिया गया है।

पुस्तिका प्राप्त होने पर, कृपया यह जांच कर लें कि इस क्यू.सी.ए. पुस्तिका में कोई कमी न हो, फटा हुआ पृष्ठ न हो अथवा कोई पृष्ठ गायब न हो इत्यादि। यदि ऐसा हो, तो इसके बदले नई क्यू.सी.ए. पुस्तिका प्राप्त कर लें।

**General Instructions**

This Question-Cum-Answer (QCA) Booklet contains 55+1 pages. Question Paper in detachable form is available at the end of the QCA Booklet which can be taken away by the candidate after examination.

For rough work, blank page has been provided at the end of this Booklet.

On receipt of the Booklet, please check that this QCA Booklet does not have any shortcomings, torn or missing pages etc. If, so, get it replaced with a fresh QCA Booklet.

(उम्मीदवार द्वारा भरा जाएगा/To be filled by the Candidate)

पंजीकरण सं./Registration No. : 1216850

अभ्यर्थी का नाम/Name of Student : ADITYA MATHUR

माध्यम: हिंदी/अंग्रेजी  
Medium: Hindi/English

ENGLISH

तारीख  
Date

25/08/2024

**सामान्य अध्ययन (प्रश्न पत्र-III)  
GENERAL STUDIES (Paper III)**

केंद्र  
Centre

KAROL BAGH

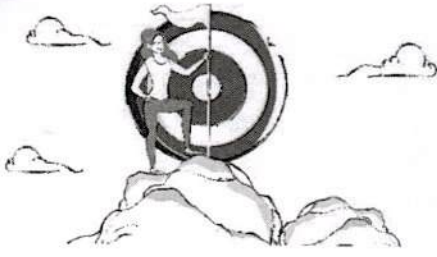
निरीक्षक के हस्ताक्षर  
Invigilator's Signature

	<p style="text-align: center;"><b>महत्वपूर्ण अनुदेश</b></p> <p>उम्मीदवारों को नीचे उल्लिखित निर्देश सावधानी से पढ़ लेने चाहिए। किसी भी निर्देश का उल्लंघन करने पर उम्मीदवारों को मिलने वाले अंकों में कटौती, उम्मीदवारी रद्द या आयोग के परवर्ती परीक्षाओं के लिए वर्जित करने इत्यादि के रूप में दण्डित किया जा सकता है।</p>	<p style="text-align: center;"><b>Important Instructions</b></p> <p>Candidates should read the undermentioned instructions carefully. Violation of any of the following instructions may entail penalty in the form of deduction of marks, cancellation of candidature, debarment from further Examination of the Commission etc.</p>
1	<p>(क) अपना पंजीकरण सं. एवं अन्य विवरण केवल प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) में उम्मीदवार के लिए निर्धारित स्थान पर ही लिखें।</p> <p>(ख) इस पुस्तिका में अन्यत्र कहीं भी अपना नाम, पंजीकरण सं., मोबाइल नं., पता अथवा प्रश्न-सह-उत्तर पुस्तिका (क्यू.सी.ए.) संख्या न लिखें जिससे आपकी पहचान का खुलासा हो।</p>	<p>(a) Write your Registration Number and other details only in the space provided in the Question-Cum-Answer (QCA) Booklet for candidates.</p> <p>(b) Do not disclose your identity in any manner such as, by writing your Name, Registration number, Mobile number, Address, Question-Cum-Answer (QCA) Booklet No. etc. elsewhere in the Booklet</p>
2	<p>अपनी प्रश्न-सह-उत्तर पुस्तिका में कहीं भी प्रश्नों के वास्तविक उत्तर के अतिरिक्त कुछ न लिखें जैसे कि कोई कविता/दोहा, अभद्र या अपमानजनक अभिव्यक्ति इत्यादि और न ही कोई ऐसा चिन्ह/निशान बनाएं जिसका उत्तर से सम्बन्ध न हो।</p>	<p>Do not write in the QCA Booklet anything other than the actual answer such as couplet, obscene, abusive expression etc., nor put any sign/mark having no relevance to the answer.</p>
3	<p>परीक्षक को प्रत्यक्ष/अप्रत्यक्ष रूप से कोई भी प्रार्थना/धमकी भरी बातें न लिखें।</p>	<p>Do not make any direct/indirect appeal/threat to the examiner.</p>
4	<p>उत्तर अस्पष्ट अथवा गंदी लिखावट में न लिखें। इस प्रकार के उत्तर का मूल्यांकन नहीं भी किया जा सकता है।</p>	<p>Do not write answers in bad/illegible handwriting. Such answers may not be evaluated.</p>
5	<p>उत्तर स्याही में ही लिखें। उत्तर लिखने के लिए पेंसिल का उपयोग न करें, हालांकि आरेख, चित्र इत्यादि बनाने के लिए पेंसिल का उपयोग किया जा सकता है।</p>	<p>Write answers in ink only. Do not use pencil for writing the answers. However, pencil may be used for drawing diagrams, sketches, etc.</p>
6	<p>प्रवेश पत्र में उल्लेख किए गए माध्यम के अलावा अन्य किसी माध्यम में उत्तर न लिखें। अधिकृत और अनधिकृत की मिली जुली भाषा का भी उपयोग न करें।</p>	<p>Do not write answers in medium other than the authorized medium in the Admission Certificate. Do not use mixed language either i.e. authorize and unauthorized media together for writing answers.</p>
7	<p>प्रश्नों के उत्तर ठीक उसके नीचे दिए गए निर्धारित स्थान पर ही लिखें। निर्धारित स्थान के अलावा किसी अन्य स्थान पर लिखे गए उत्तर का मूल्यांकन नहीं किया जाएगा।</p>	<p>Write answer at the specific space (right below the question) only. Answers written elsewhere at unspecified places in the booklet shall not be evaluated.</p>
8	<p>यदि आप अपने किसी उत्तर को रद्द करना चाहते हैं तो उसे पेन से काट दें तथा उस पर "रद्द" लिख दें, अन्यथा उसका मूल्यांकन किया जा सकता है।</p>	<p>If you wish to cancel any work, draw your pen through it and write "Cancelled" across it, otherwise it may be valued.</p>

कार्यालय के प्रयोग हेतु For Official Use	कार्यालय के प्रयोग हेतु For Official Use
<p>परीक्षक के हस्ताक्षर Signature of Examiner(s)</p>	

**प्राप्तांक के विवरण (परीक्षक द्वारा भरा जाए)/ Marks Details (To be filled by the Examiner(s))**

प्रश्न सं. Q. No.	अंक Marks		प्रश्न सं. Q. No.	अंक Marks	
1			11		
2			12		
3			13		
4			14		
5			15		
6			16		
7			17		
8			18		
9			19		
10			20		
उप-योग (A) Subtotal (A)			उप-योग (B) Subtotal (B)		
सकल योग (A+B) / GRAND TOTAL (A+B)					



**सामान्य अध्ययन (प्रश्न पत्र-III)/GENERAL STUDIES (Paper-III) (2930)**

निर्धारित समय: तीन घंटे  
Time Allowed: Three Hours

अधिकतम अंक: 250  
Maximum Marks: 250

**प्रश्न-पत्र संबंधी विशेष अनुदेश**

कृपया प्रश्नों के उत्तर देने से पूर्व निम्नलिखित प्रत्येक अनुदेश को ध्यानपूर्वक पढ़ें:

कुल बीस प्रश्न दिए गए हैं जो हिंदी और अंग्रेजी दोनों में छपे हैं।

सभी प्रश्न अनिवार्य हैं।

प्रत्येक प्रश्न/भाग के लिए नियत अंक उसके सामने दिए गए हैं।

प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए, जिसका उल्लेख आपके प्रवेश-पत्र में किया गया है, और इस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यू.सी.ए.) पुस्तिका के मुख-पृष्ठ पर निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिखे गए उत्तर पर कोई अंक नहीं मिलेंगे।

प्रश्न संख्या 1 से 10 तक का उत्तर 150 शब्दों में तथा प्रश्न संख्या 11 से 20 तक का उत्तर 250 शब्दों में दीजिए।

प्रश्नों में इंगित शब्द सीमा को ध्यान में रखिए।

प्रश्न-सह-उत्तर पुस्तिका में खाली छोड़े गए कोई पृष्ठ अथवा पृष्ठ भाग को पूर्णतः काट दीजिए।

**QUESTION PAPER SPECIFIC INSTRUCTIONS**

*Please read each of the following instructions carefully before attempting questions.*

*There are TWENTY questions printed both in HINDI and in ENGLISH.*

*All questions are compulsory.*

*The number of marks carried by a question/part is indicated against it.*

*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. No marks will be given for answers written in a medium other than the authorized one.*

*Answers to Questions No. 1 to 10 should be in 150 words, whereas answers to Questions No. 11 to 20 should be in 250 words.*

*Keep the word limit indicated in the questions in mind.*

*Any page or portion of the page left blank in the Questions-cum-Answer Booklet must be clearly struck off.*

## EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

**All the Best**

1.

खाद्य प्रसंस्करण उद्योग का तीव्र विकास किस प्रकार भारत में खाद्य सुरक्षा संबंधी चुनौतियां उत्पन्न कर रहा है? (उत्तर 150 शब्दों में दीजिए)

How is the rapid growth of the food processing industry leading to food safety challenges in India? (Answer in 150 words)

10

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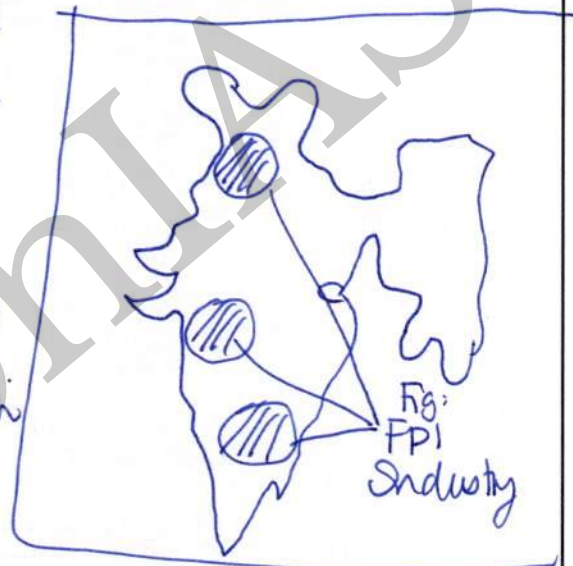
The food <sup>processing</sup> industry is growing at AAGR of 8.3% and contributes 1.8% to Indian GVA economy (Niti Aayog)

### Rapid Growth of FPI Industry

① Increasingly annually at high growth - doubled since 2005.

② Government schemes Aid to growth & formalization

(Eg) PMKSY



③ Better linkages b/w upstream & downstream sectors adding to rapid growth.

(Eg) Supply chain, cold storage

### Leading to Food Safety Challenges

① Poor Quality: Due to lack of standardization and poor quality checks.

## (Eg) Poor contamination checks

② Low Value Added : Due to token FPI processing

③ Harmful Products : Like Vanaspatti Ghee creating health issues for young population (India has 102 million pre-diabetic people)

④ Poor Standards : in food safety & poor enforcement by FSSAI creating huge challenges. (Eg) Nestle adding sugar to baby food

⑤ Phylosanitary Measures : Rejected Indian Food & later sold in domestic markets

Solutions → strict standards  
→ strict enforcement

→ Govt schemes. (Eg) FSSAI Eat Right Movement

FPI Industry must be incentivised

to contribute to Healthy India & attain SDG-2 (Zero Hunger) target

2.

भारत की सार्वजनिक वितरण प्रणाली के अंतर्गत उचित मूल्य की दुकान (FPS) का प्रारंभ एक विकासशील प्रक्रिया है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

Under the Public Distribution System of India, the Fair Price Shop (FPS) transformation is an evolving process. Discuss. (Answer in 150 words)

10

उम्मीदवारों को  
इस हिसाब में  
नहीं लिखना  
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Fair Price Shops are defined & established under NFCA Act, 2013 to distribute free/subsidized foodgrains to needy.

Transformation is Evolving Process

I. Past transformation

① Targeted PDS: Evolved in 1997 to weed out <sup>fake</sup> beneficiaries

② Digital Solutions: to prevent leakage & wastage

③ Central Warehousing: to store & protect grain from theft or rot.

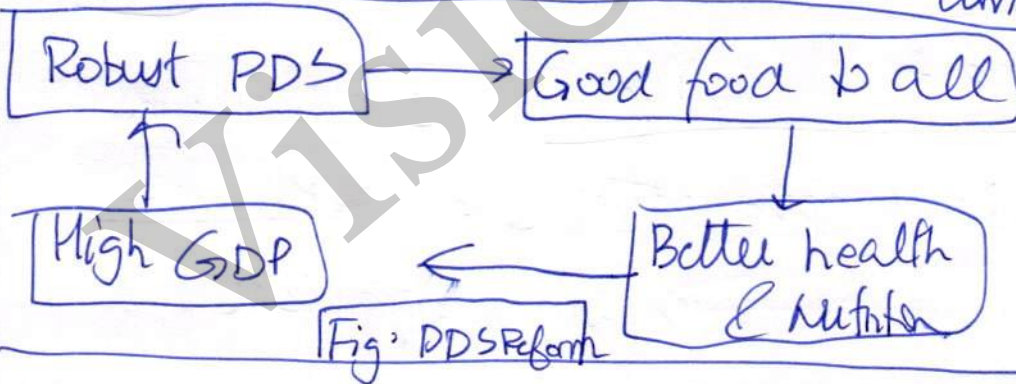
II. Future transformation

① 100% Computerization: to eliminate leakage & streamline operations (Wadhwa Committee)

① Use Emerging Tech: For efficient operations & monitoring. (Eg) AI to plug leaks, blockchain for data

② Cold Storage: at all districts to preserve food. (8% loss of foodgrain)  
is held by Meena Kumari Committee

③ Remove errors of exclusion & inclusion as PDS has 60% inclusion errors  
(Shanta Kumar Committee)



④ Promote Participation: of states to ensure better management (Asiok Dalwai Committee)

PDS must be continuously reformed to ensure New India of Health & Nutritious People.

3.

भारत में एग्रीटेक स्टार्ट-अप्स किसानों की कृषि उत्पादकता एवं बाजार पहुंच बढ़ाने में किस प्रकार मदद कर रहे हैं? (उत्तर 150 शब्दों में दीजिए)

How are agri-tech startups in India helping farmers in enhancing farm productivity and market access? (Answer in 150 words)

10

उम्मीदवारों को  
ब्रुस ह्राशिए में  
नहीं लिखना  
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According to Agri Ministry, only ~ 5.18% startups operate in agricultural sector contributing to its growth. (Eg)

Bharat Kisan

Helping Farmers

I. Enhance Farm Productivity

① Precision Agriculture: by telling exact needs of fertilizer, seed etc. (Eg) Kisan-Mitra

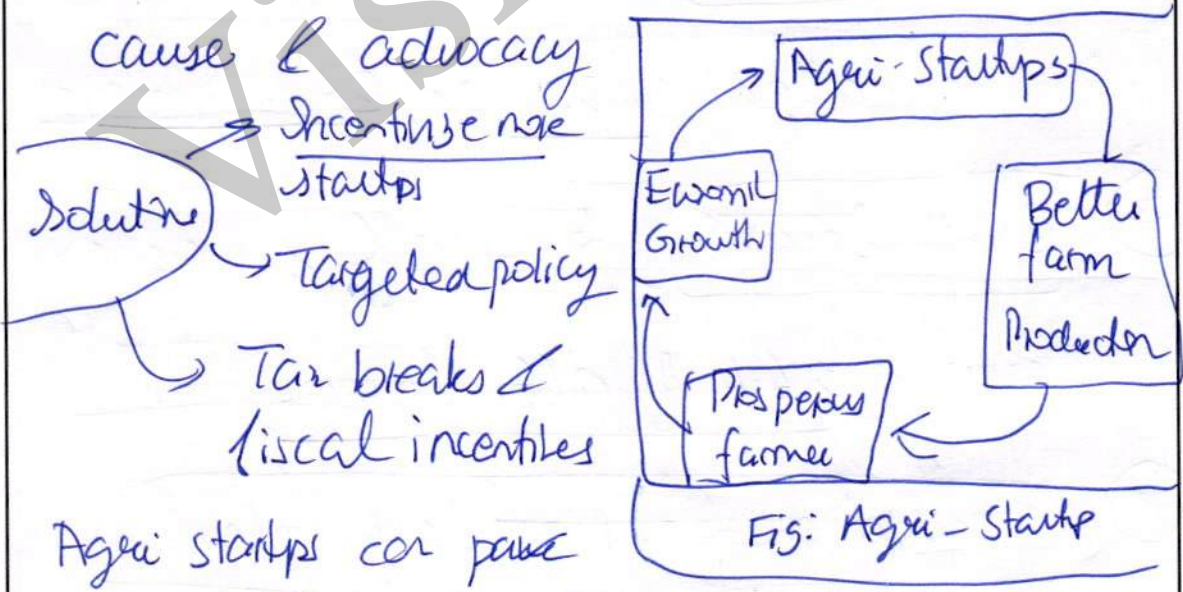
② Smart agriculture: nudging change in agro-cropping pattern to better crops. (Eg) Horticulture, silvipastoralism

③ Climate Resilient Agriculture: By enhancing resilience of farms & farmers. (Eg) Miticaad.

(Eg) Crops yield to decline by 30% by

## II. Market Access

- Efficient Supply Chain: Helping reduce post harvest loss & fetch best price.
- Better Management: with elimination of middlemen to get better returns  
(Wadhwa Committee)
- Promote Connect: between farmer & exporters for better access to foreign markets.
- Connect with Policy: to advance farmer



Agri startups can prove way to "eengreen Revolution" to ensure better farmer welfare (Swaminathan Commission)

4.

भारत में भूमि सुधारों के प्रभावी कार्यान्वयन में भूमि अभिलेखों के डिजिटलीकरण की भूमिका पर चर्चा कीजिए। (उत्तर 150 शब्दों में दीजिए)

Discuss the role of digitization of land records in the effective implementation of land reforms in India. (Answer in 150 words)

10

उम्मीदवारों को  
इस हार्शिए में  
नहीं लिखना  
चाहिए  
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Digitization of land records means storage, management & retrieval of land records in electronic form.

### Role of Digitization of Land Records

- ① Conclusive Land Titling : By Govt agency to ensure better land titles & security to owner. (Eg) DLR MP
- ② Unique Number : to each land title like Aadhar called ULDIW or Bhu-Aadhar
- ③ Better Security : to small & marginal farmers (86% of all farmers)
- ④ Foundation for More Land Reforms : as digital records form basis of more. (Eg) Consolidation of land

⑤ Economic Growth : Due to higher productivity aiding better implementation  
( Aggr GVA only at 17.3% )

⑥ Less Litigation : due to conclusive titles & not presumptive

⑦ Future-looking Reforms : Only possible on digital records. (Eg) Contract family at large scale

⑧ Use of New Tech : to better improve land reforms. (Eg) Blockchain for data

Solutions → Saturation of all digital land records  
→ Participative implementation with PRI  
→ Fiscal incentive to companies to aid digital records

Land Reforms are an ongoing process  
& urgent steps needed to allow digital land records to better augment rural & urban incomes.

5.

भारत को अपने जनसांख्यिकीय लाभांश का पूर्ण उपयोग करने और आर्थिक विकास में तेजी लाने के लिए एक विनिर्माण-केंद्रित विकास मॉडल को अपनाने की आवश्यकता है। विवेचना कीजिए। (उत्तर 150 शब्दों में दीजिए)

To fully exploit its demographic dividend and accelerate economic growth, India needs to adopt a manufacturing-led growth model. Discuss. (Answer in 150 words)

10

उम्मीदवारों को इस हार्शिए में नही लिखना चाहिए  
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According to IMF, India's demographic dividend will last from 2018-19 to about 2054-55.

Manufacturing Led Growth Model: Means

better & stronger manufacturing sector to lead India's growth journey (current contribution of only 17.3% to GVA)

Need for this Model I. Exploit Demographic Dividend

○ Reap Benefit: of high workforce & low dependence - Ratio. (Average age in India is 29 years)

○ Faster & Empowerment of all citizens to promote better economic structure

○ Ensures economic justice: all skilled

& unskilled people get adequate jobs  
(Only 4.3% Indians skilled - 95% in South Korea)

## II. Accelerate Economic Growth

○ Faster Growth: due to high workforce & productivity

○ Equitable Growth: in all regions & for all people (Xaxa Committee Report)

→ Private govt schemes for manufacturing.

(Es) PLI, Make in India

Way Forward

→ Fiscal Incentives: to industries to invest & grow (UK Sinha Report)

→ Stability: to all people to keep dividend (Sharada Prasad Report)

→ Learn from China: which kept its dividend in 1990s.

Urgent steps are needed to make good use of India's demographic dividend & attain SDG-8 (Decent work & economic growth)

6.

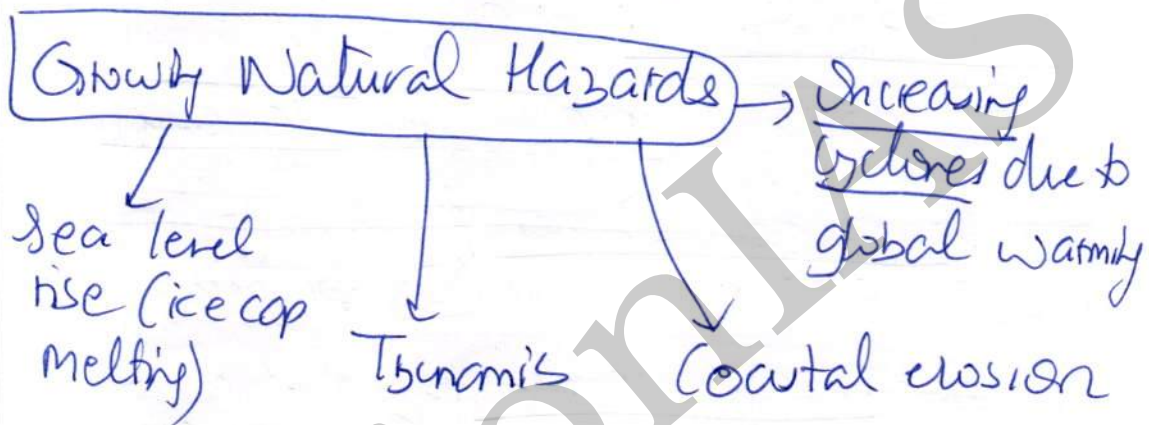
जलवायु परिवर्तन के परिणामस्वरूप बढ़ते प्राकृतिक खतरों से निपटने के लिए भारतीय तटीय समुदायों की प्रत्यास्थता को किस प्रकार मजबूत किया जा सकता है? (उत्तर 150 शब्दों में दीजिए)

How can the resilience of Indian coastal communities be strengthened to tackle the growing natural hazards resulting from climate change? (Answer in 150 words)

10

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

According to IMO, 5700 of 7516 km of India's coast is vulnerable to natural hazards (Eg) cyclones.



Strengthening Resilience (1) Laws

1.1. Strict enforcement of coastal law.

(Eg) CRZ notification

1.2. Periodic updation: Ensure meets changing needs

(2) Governance

2.1. Build resilience in coastal

communities. (Eg) Training in hazards

2.2 Use Tech: to monitor threats.

(Eg) Early Warning for Tsunami

2.3. IEC Campaigns: to disseminate info. (Eg) Radio

3 Community Centric

3.1. Teach hazard mitigation to all people (Eg) Aapda Mitra Scheme

3.2. Train all people in school curriculum

3.3. Build community shelters for hazards



Fig: Coastal Hazard

Coastal Communities must be made resilient to build disaster -  
Mukht Bharat (Hon'ble PM)

7.

भारत में अधिक संधारणीय पर्यावरण को बढ़ावा देने के लिए ग्रीन क्रेडिट प्रोग्राम किस प्रकार कार्बन प्रबंधन से कहीं अधिक विस्तृत है? इसके कार्यान्वयन के संबंध में विभिन्न चिंताएं क्या हैं? (उत्तर 150 शब्दों में दीजिए)

How does the Green Credit Programme extend beyond carbon management to promote a more sustainable environment in India? What are the various concerns about its implementation? (Answer in 150 words)

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

10

Green Credit Program was started under Environment Protection Act, 1986 to incentivise voluntary green actions.

(Eg) Afforestation

Carbon Management

↳ Lower GHG emissions by acts like afforestation.

↳ Sequester Carbon in soil or ground  
(Eg) Carbon Capture & Storage

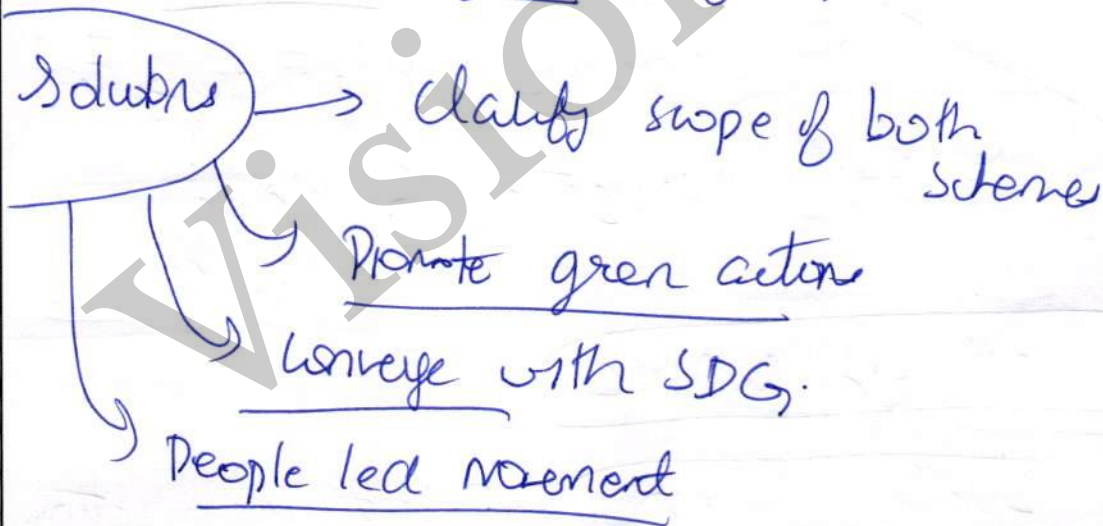
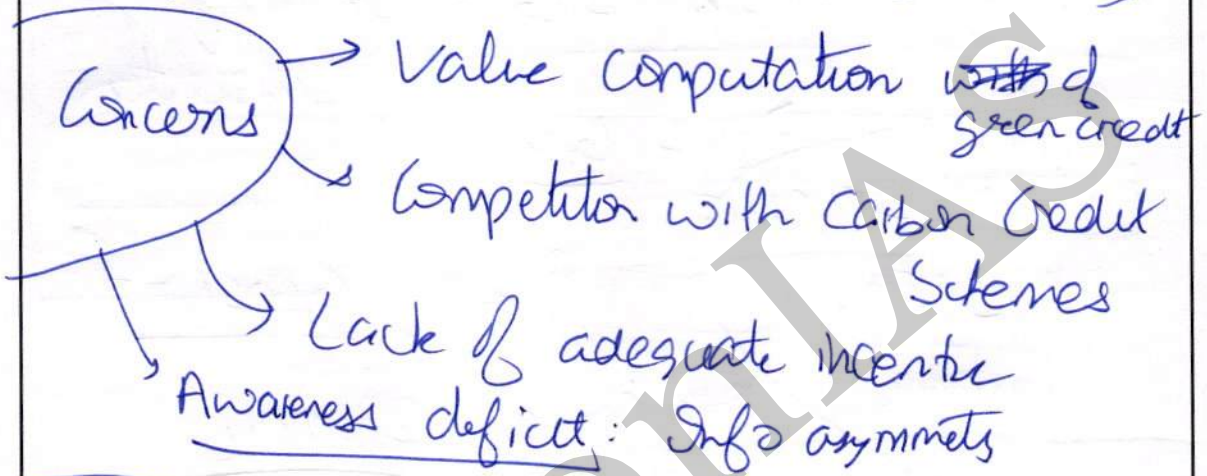
↳ Carbon Utilization for development.  
(Eg) Pharma Industry.

Extends Beyond Mere Carbon Management  
- Sustainable Environment

① Rainwater Harvesting: Encouraged as seen in Tamil Nadu

② Sustainable Development: Create non-polluting industry. (Eg) EV

③ Reduce Pollution: Launch sewage plants (only 18.6% capacity in 2023)



Green Credit Programs in line with Mission Life will help attain SDG-13 (Climate action)

8.

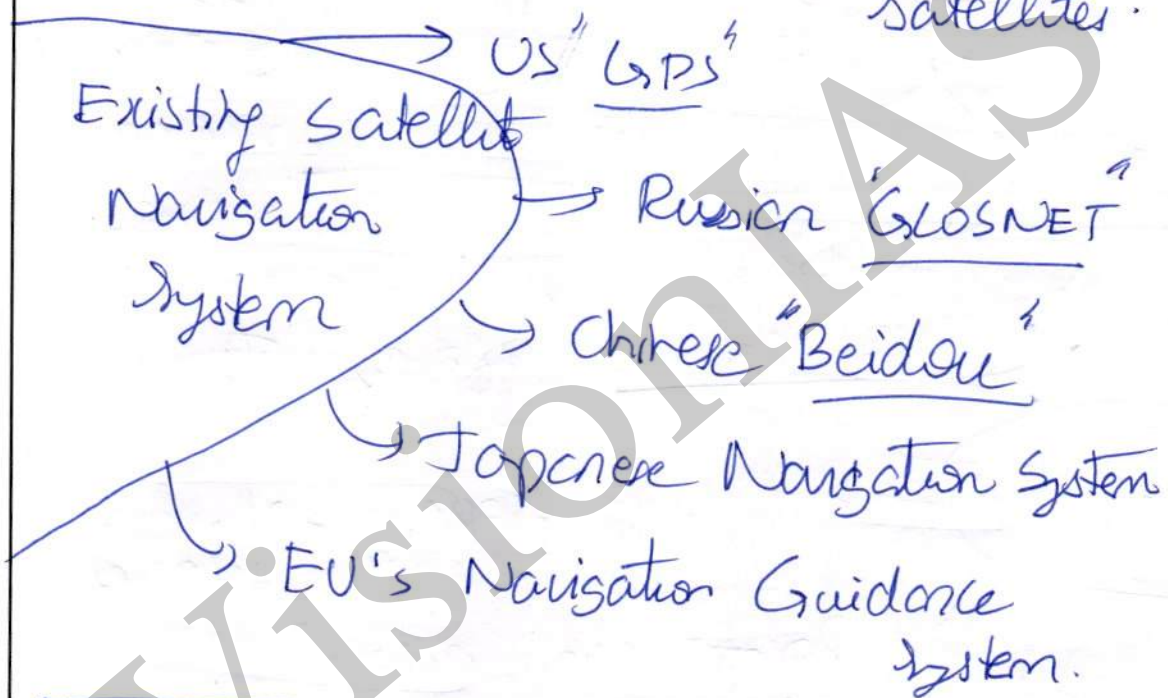
जब पहले से ही अन्य उपग्रह नेविगेशन सिस्टम उपलब्ध हैं, तो NavIC की आवश्यकता क्यों है? (उत्तर 150 शब्दों में दीजिए)

What is the need for NavIC when existing satellite navigation systems are already available? (Answer in 150 words)

10

उम्मीदवारों को इस हाथिए में नहीं लिखना चाहिए  
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NAVIC is India's indigenously developed navigation system using 4 Geosynchronous & 3 Geo-stationary satellites.



Need for NAVIC

- ① **Strategic Autonomy** : Prevent weaponization & space data by other states
- ② **Indigenous Tech** : Used to ensure attainment of national interests

③ Civilian Use : In India & 1500 km beyond borders

④ Dual-Use : For military & strategic purposes. (Eg) Reconnaissance

⑤ Tech Demonstrator : that India can build complex navigation systems

⑥ Economic Use : to build new industries with NAAC data (Eg) MapmyIndia

⑦ International Cooperation : to share tech & data with friendly nations  
(Eg) Nepal, Bhutan, Sri Lanka

NAAC will be a game changer & help establish India as a major player in the New Space Race  
(ISRO Chairman)

9.

साइबर-सक्षम वित्तीय अपराध वैश्विक धन शोधन (मनी लॉन्ड्रिंग) के नए क्षेत्र के रूप में उभरा है। चर्चा कीजिए। सरकार इस मुद्दे का समाधान किस प्रकार कर सकती है? (उत्तर 150 शब्दों में दीजिए)

Cyber-enabled financial crime has emerged as the new frontier of global money laundering. Discuss. How can the government address this issue? (Answer in 150 words)

10

उम्मीदवारों को  
इस क्षण में  
नहीं लिखना  
चाहिए  
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Cyber-enabled financial crime is defined as use of cyber-space to commit crime & launder money.

## New Frontier of Global Money Laundering

① Helps in layering:

of black money in financial system

② Aids Cyber Extortion

Committed in cyber space. (Eg) cyber crime

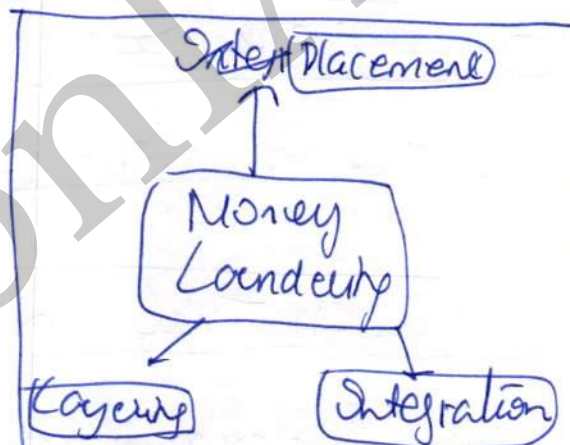


Fig: Money Laundering Stages

③ Hide Proceeds of Crime: by layering money in tax havens or illegal assets

## Addressed by Govt (1) Legal Measures

उम्मीदवारों को इस हार्शिए में नहीं लिखना चाहिए  
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1.1. Strict enforcement of laws.

(Es) PMCA

1.2. Regular updation of law. (Es) PMCA

Amendment to include CA, CFA

## (2) Enforcement Measures

2.1. Complete Power to CERT-In: to

investigate cyber crime under Section 70, IT Act

2.2. More teeth to ED: to investigate & punish (Section 45 - bail difficult)

2.3. Global cooperation: To detect & deter money launderers. (Es) FATF

Money Laundering is a hydra's head & all must be cut comprehensively to ensure financial & cyber security in India

10.

इंडियन आर्मी वर्ष 2024 को 'प्रौद्योगिकी समावेशन वर्ष (Year of Technology Absorption)' के रूप में मना रही है। इसके आलोक में, स्पष्ट कीजिए कि भारत के रक्षा क्षेत्रक में प्रौद्योगिकी के समावेशन की आवश्यकता क्यों है। इस पहल में भारत को किन चुनौतियों का सामना करना पड़ सकता है? (उत्तर 150 शब्दों में दीजिए)

The Indian Army is observing the year 2024 as the 'Year of Technology Absorption'. In light of this, explain why there is a need for technology absorption in the defence sector of India. What challenges can India face in this initiative? (Answer in 150 words)

उम्मीदवारों को  
इस क्षति में  
नहीं लिखना  
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Indian army needs to integrate  
technology into its rank & file at  
all levels (Rama Rao Committee)

Need for Tech Absorption

- ① Grey Warfare : a new form of war. Eg Cyber attack
- ② Low Cost : for adversary to use offensive tech against India  
Eg Mumbai power blackout
- ③ High Disruptor : caused by tech
- ④ Global Trend : to use tech in military (US)

## Challenges

→ Low R&D (0.66-1% of GDP)

→ Poor skilled in army

→ High costs

→ ethical concerns

→ High gestation period

→ Increase R&D to 2% of GDP

## Solutions

→ Collaborate with foreign  
nations (US)

→ Integrate it in all levels  
(Shetkar Committee)

Indian Army must integrate  
tech & build New Strong Military  
for 21<sup>st</sup> century warfare.

11.

भारत के पूर्वोत्तर क्षेत्र (NER) में व्यापार एवं उद्योगों के विकास में किन समस्याओं का सामना करना पड़ा है? इन समस्याओं से निपटने हेतु किए गए उपायों पर टिप्पणी कीजिए। (उत्तर 250 शब्दों में दीजिए)  
 What are the issues faced in the development of trade and industries in the North-Eastern Region (NER) of India? Comment on the measures that have been taken to tackle these issues. (Answer in 250 words)

उम्मीदवारों को इस क्वेश्चन में नहीं लिखना चाहिए  
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North-Eastern states of India constitute 7-8% of India's population but only 2.4% of Indian GDP (Niti Aayog)

Issues faced by Trade and Industry

① Lack of Uniform Policy : Varying in all states hindering trade.  
 (trade is in concurrent list)

② Insurgency : Non-perturb trade & investment.  
 (Eg) NISCOM

③ Natural Factors : Dense forests, uneven terrain & hilly regions

④ International Issues : Create hindrance in industry (99% of NE border is international)



Fig: NE India

⑤ Lack of Resources : Needed for basic industries like iron, petroleum (low)

⑥ Lack of Investment : by public & private sectors due to lower returns than the rest of India. (Eg) Bangalore

⑦ Social Tension : Creating poor human resource development. (Eg) Manipur

### Measures Taken to Tackle

① PM-DEVINE : Central sector scheme to invest & stimulate investment in NER by creating physical infrastructure. (Eg) Roads, railways.

② Special Scheme for NE Investment : Crowd in private investment by facilitating ease of doing business. (Eg) Starting Company Online

③ Niti for North East : Premier from to create policies & trade in NE India. (Eg) Fiscal Moratorium.

④ **DONER** : Ministry for development of NE India lia synergy with centre

**Challenges & Measures** ① **Poor Political Will**,

to create tangible results on ground

② **Ethnic Strife** : un conducive to even best policies

③ **Geographical Hindrance** : in executing all govt policies. **Eg** High hills

④ **Poor Investment** : Despite schemes & incentives

⑤ **Cross-state Grudum** : with conflictly & hostile policies.

**Solutions** → Growth private investment  
→ Better implementation of policy on ground  
→ Regional Connectivity. **Eg** Sabroom port in B'desh  
→ Fiscal & tax incentives to industries (Kelkar Committee)

India must invest & develop NE region to make Developed India by

12.

जलवायु परिवर्तन और बढ़ते जल संकट के युग में, सूक्ष्म सिंचाई प्रणालियां भारत में संधारणीय कृषि पद्धतियों में किस प्रकार योगदान दे सकती हैं? (उत्तर 250 शब्दों में दीजिए)

In the era of climate change and growing water scarcity, how can micro-irrigation systems contribute to sustainable agricultural practices in India? (Answer in 250 words) 15

उम्मीदवारों को इस हाशिये में नहीं लिखना चाहिए  
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According to UN-Water, more than 91 million Indians face water scarcity every ~~year~~ day & Groundwater extraction is maximum in India (25% of world's)

### Micro-Irrigation Systems

- Systems using judicious utilization of water resources. (Es) Sprinkler
- Sustainable alternative to traditional irrigation practices. (Eg) Field inundation
- Better & judicious water use (Eg) Drip irrigation

### Contribute to Sustainable Agricultural Practices

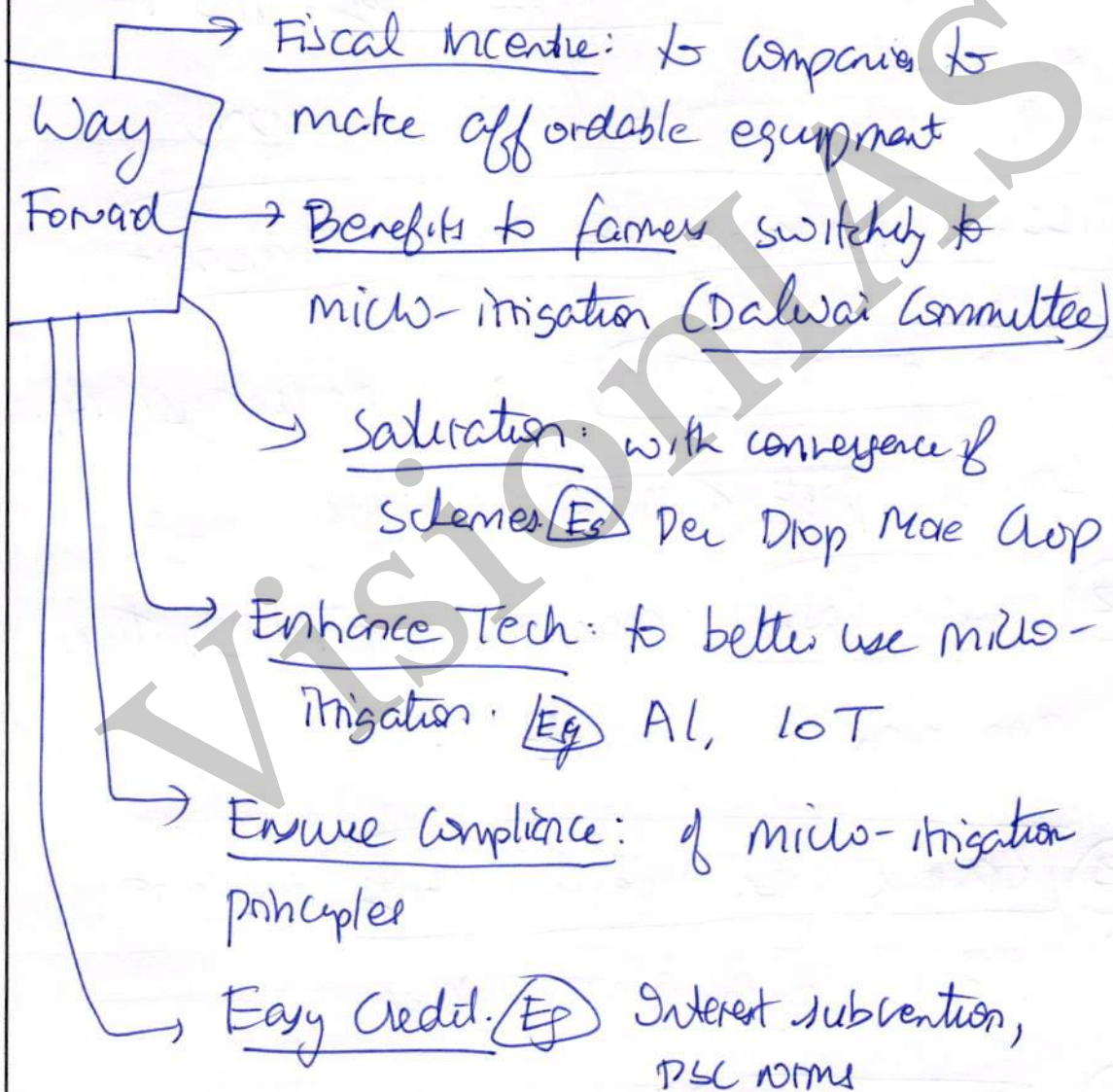
- Resilient Agriculture · By providing water during times of great water stress. (Groundwater level fell 25 cm b/w 2005 - 2014 - (GWA))

- ① Climate Smart Agriculture : by preventing crop loss due to climate vagaries like monsoon erratic nature (India receives 85% rain in SW Monsoon)
- ① Better Efficiency : India move to "irrigation efficiency" instead of land use efficiency. (Eg) 50-90% efficient
- ① Traditional Knowledge : of indigenous communities utilized. (Eg) Bamboo irrigation in Meghalaya
- ① Less Extraction of Groundwater : Creating more recharge & prevent desertification (UNCCD)
- ① Sustainable Practices : Increase farmer income & prevent losses. (86% farmers in India are small & marginal)
- ① Prevent Salinization : of soil due to water-logging of fields. (Es) Punjab, UP

① Use of Emeyijf Tech : Like gene

therapy to reduce water need. (Eg) DMH-11  
(wheat)

② Prevent Evaporation Losses : as water  
added directly to root area.



Micro-irrigation is a game changer  
must be provided to farmer to double

13.

भारतीय रेलवे में माल परिवहन से संबंधित समस्याओं का समाधान करने तथा घरेलू माल ढुलाई में इसकी हिस्सेदारी बढ़ाने के लिए कौन-सी रणनीतियां अपनाई जा सकती हैं? (उत्तर 250 शब्दों में दीजिए)

What strategies can be adopted to overcome the issues pertaining to freight transportation in the Indian Railways and increase its share in the domestic freight? (Answer in 250 words) 15

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इस हिसाब में  
नहीं लिखना  
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According to Railway Ministry,

Passenger trains take  $2/3$  of track capacity but contribute only  $1/3$  to railway earnings (annual report)

Issues Pertaining to Freight Transport

① Fierce Competition : with roadways (76% share), ports & now airway

② High Costs : due to inherited structure and high running cost.

③ Lack of Last Mile Connectivity : due to limited length of railways

④ Poor Safety : caused by petty theft from rail rakes. (Eg) East UP

⑤ High Operating Cost : Railway spends

~90 rupees to earn 100 rupees

⑥ Traffic Congestion : due to high

frequency of passenger trains (Bibek Debroy Committee)

⑦ Low Focus : on railway freight by top management

⑧ Economically Unviable : due to higher price & low value for customer.

Strategies to increase Share in Domestic Freight

① Lower Costs : with economies of scale & low operating ~~cost~~ expense (Railway Vision Doc,

② Dedicated Freight Corridor : Expansion <sup>2030</sup> to cater to rising demand.

③ Use Tech : to ensure safe custody & transport. (Eg) RFID, QR Code

④ Streamline operation : to lower costs & increase train speed

⑤ Private Collaboration : to utilize private talent to promote efficiency.  
(Es) Tata

⑥ Higher Capex : to build more corridors and aluminum tracks for faster rail transport (Budget 2023-24)

⑦ Enhance Safety : by elimination of rail accidents. (Es) KAVACH

Railways must focus on freight traffic to increase revenue, lower GHG emissions & build Modern Rail infra as per SDG-9 (Infrastructure Innovation)

14.

उन कारकों पर चर्चा कीजिए जिन्होंने नवीकरणीय ऊर्जा क्षेत्र में प्रभावशाली प्रगति करने और वैश्विक नवीकरणीय ऊर्जा परिवर्तन में अग्रणी के रूप में स्थापित होने में भारत की सहायता की है। (उत्तर 250 शब्दों में दीजिए)

Discuss the factors that have aided India in making impressive strides in the renewable energy sector and establishing itself as a frontrunner in the global renewable energy transition. (Answer in 250 words)

उम्मीदवारों को इस हार्शिय में नही लिखना चाहिए  
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According to MNRE, India has cumulative of ~197 GW Renewable energy out of total energy of 444GW (July 2024)

### Factors Aiding Impressive Strides in RE

- ① Facilitative Govt Policy : Conducted transparent to build confidence  
(Eg) PM Suryodaya Yojana, Wind offshore Policy
- ② Abundant Investment : in RE sector by public enterprises (Eg) GAIL, REC
- ③ Crowdin Private Investment : with facilitate policy. (Eg) Amarsar hybrid park, Rajasthan
- ④ Domestic Manufacturing : of many components lowered costs for consumer.

Eg PV on solar panels

5) Integration in Electricity Grid : By

integrating RE plants to grid by  
Powergrid Corp (Govt Company)

6) Energy Exchange : Allow to buy & sell of RE in open market. Eg India energy Exchange.

7) Huge Incentives : for companies to develop new tech. Eg Geothermal plant in Tuge Vally, Kadakh

Forerunner of Global Renewable Energy transfer

1) Green Hydrogen : Pioneered by India through Natural Green Hydrogen Mission

2) International org : Like Int'l Solar Alliance started by India (and France) to harness solar energy.

③ Grid Intergration : at international level to ensure energy at all times

(Eg) One-~~sun~~-one-world-one grid

④ Leadership at COP : as exemplary climate friendly behavior. (Eg) 500GW RE by 2030 (Panchamrit)

⑤ Mandatory RE Purchase : By select consumers which is novel idea (Eg) RE Certificate purchase

⑥ Shared Tech Expertise : like new nuclear plant in Bidesh

India must continue to invest in RE to become net zero by 2070 and attain SDG-7 (Clean energy)

15.

उर्वरकों और कीटनाशकों से युक्त कृषि अपवाह पर्यावरण प्रदूषण में किस प्रकार योगदान देता है? कृषि अपवाह के प्रभाव को कम करने के लिए क्या उपाय अपनाए जा सकते हैं? (उत्तर 250 शब्दों में दीजिए)

How does agricultural runoff containing fertilizers and pesticides contribute to environmental pollution? What measures can be taken to mitigate the impact of agricultural runoff? (Answer in 250 words)

15

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
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Agricultural runoff means escape of fertiliser pesticides & other chemical from farms to other areas like water bodies.

### Agricultural Runoff & Environmental Pollution

- ① Eutrophication: Due to excess nutrients in water bodies. Eg Najafgarh jheel.
- ② Death of Marine Life: due to eutrophication & lower lake productivity.
- ③ Soil Pollution: Due to excess nutrients causing imbalance in soil composition. Eg Indian soils have excess urea.
- ④ Low Yields: of crops causing wastage of inputs causing global harm

⑤ Flora Devastation : Due to long term exposure to poor or nutrient excess soil. (Eg) Excess Potassium causes wilting

⑥ Global Warming : as wastage of fertilizer creates lot of carbon emission.

### Measures to Mitigate Impact

- I. Farm Level
- Encourage Nano-fertilizer to increase efficiency. (Eg) One 500ml bottle of nano-urea can replace 1 bag of urea. (IFFCO)
  - Extension Services : to provide better inputs to farmers. (Eg) Kisan Vigyan Kendras
  - Soil Health Card : to know real need of fertilizer.

### II. Industry Level

- Promote alternative fertilizers that cause less runoff & pollution. (Eg) PM-PRANAM Scheme

○ Reduce Use: of conventional fertilizer that causes soil pollution.

○ Ensure Compliance: to avail subsidies by govt like Nutrient based subsidy

### III. Govt Cent

○ Promote organic & nano fertilizer: Ensure low runoff & high yields. (Eg) National Mission on organic farming

○ Incentive States: to reduce wastage of fertilizer & pesticide. (Eg) PM-BJP Scheme

○ Follow Stockholm Convention: to ban POP fertilizer.

Govt must use participative approach to ensure mitigation of agricultural runoff to build SMART, sustainable & resilient farming & environmental acts

16.

हिमालयी राज्यों में पर्यटकों की बढ़ती संख्या ने उनके पारिस्थितिकीय समावेशन क्षमता को पार कर लिया है, जिसके कारण बड़े पैमाने पर मानव-जनित आपदाएं उत्पन्न हुई हैं। संधारणीय पर्यटन को बढ़ावा देते हुए ऐसी आपदाओं को रोकने के लिए क्या उपाय किए जा सकते हैं? प्रासंगिक उदाहरणों के साथ चर्चा कीजिए। (उत्तर 250 शब्दों में दीजिए)

The growing influx of tourists in Himalayan states has breached their ecological carrying capacity, leading to significant man-made disasters. What measures can be implemented to prevent such disasters while promoting sustainable tourism? Discuss with relevant examples. (Answer in 250 words)

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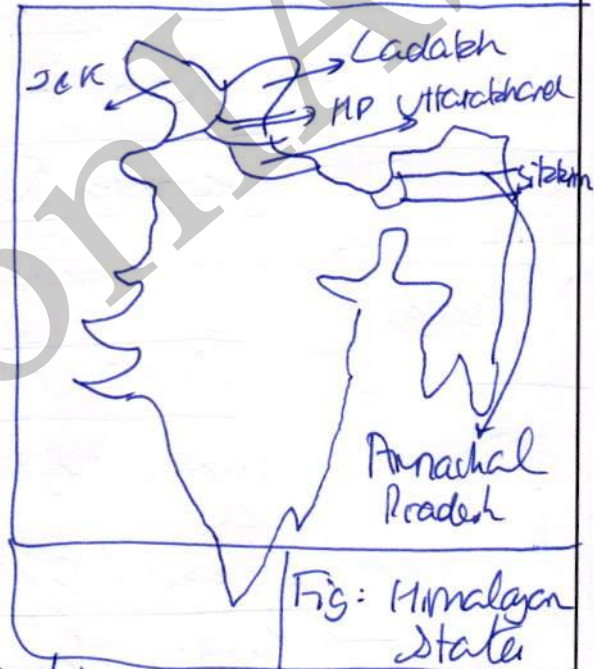
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According to Uttarakhand govt, more than 5 lakh devotees & tourists entered state between January 2024 & July 2024

Breached ecological carrying capacity :

Means capacity that can be sustainably carried by environment or causes disaster.

(Eg) 2013 Kedarnath floods.



Significant Man-Made Disasters

○ Land Subsidence : Seen in Joshimath in 2023 due to over-tourism.

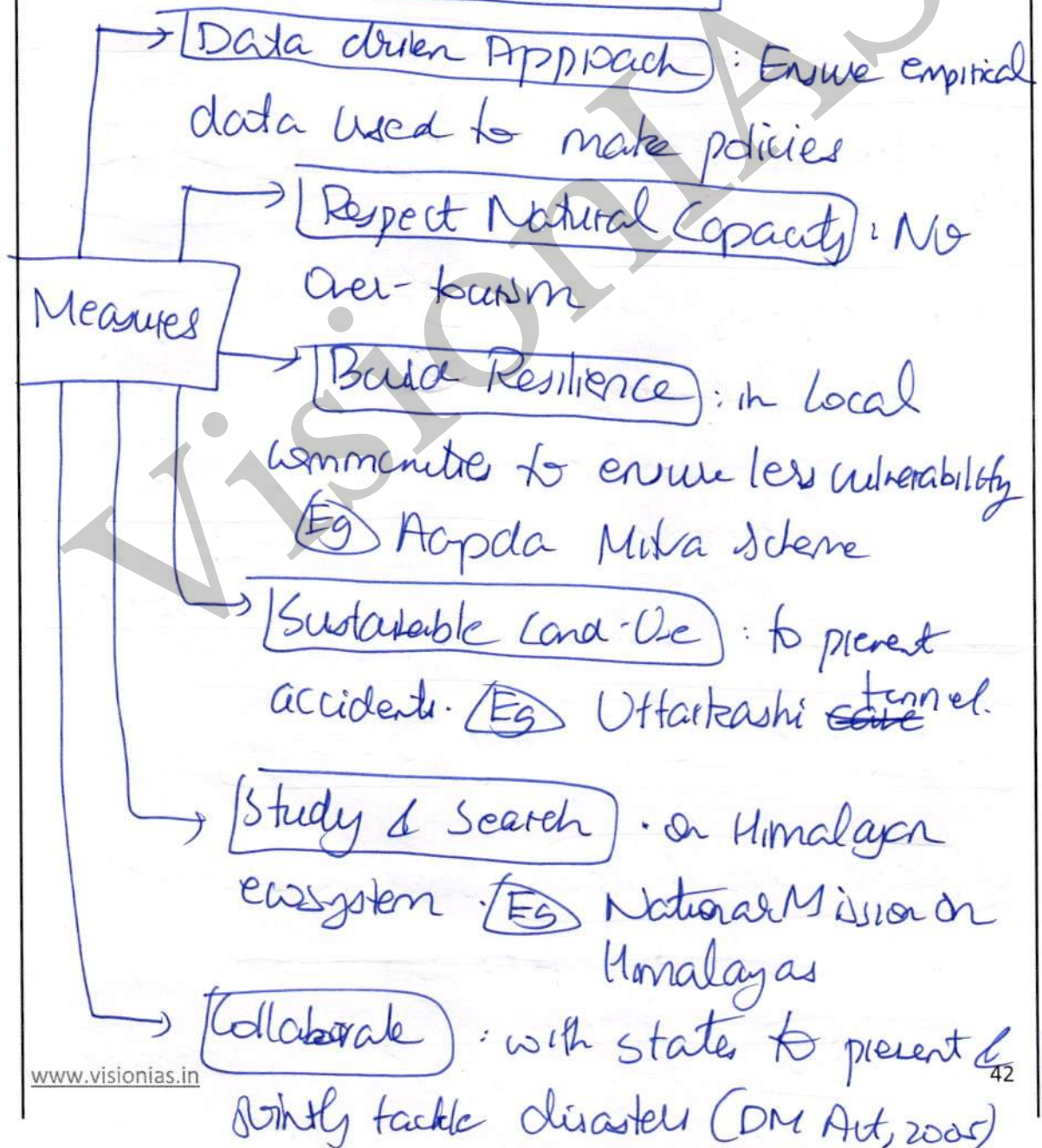
○ Floods : Seen every year in Himachal Pradesh due to

# Beas & Damati Rules

① **Candulides** : Seen in Uttarakhand  
(Kedarnath in 2024)

② **Rampant Pollution** : Seen in HP,  
J&K & Ladakh (light pollution)

## Measures to Prevent Disasters



# Measures for Sustainable Tourism

- ① Nature-Based Tourism : In line with carrying capacity. (Eg) House-stays
- ② Limit Tourism : by issuing limited passes every year
- ③ Train local communities on need & scope of sustainable tourism.
- ④ Dharamshala Declaration to be followed to promote tourism & environment

⑤ Promote Holistic Tourism in all forms. (Eg) Medical, Religious

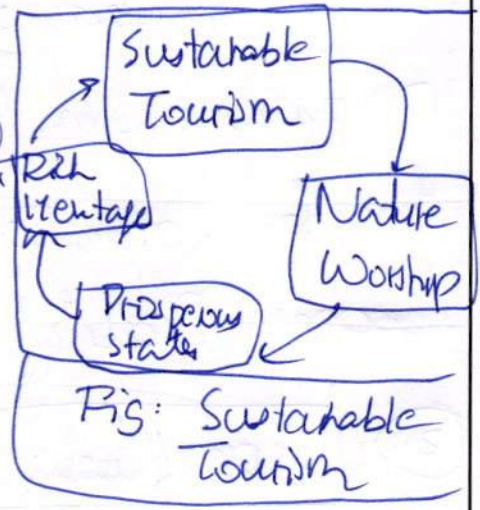


Fig: Sustainable Tourism

India must preserve Himalayan ecology & promote sustainable tourism to prevent & mitigate hazards in line with Sendai Framework.

17.

सुपरकंडक्टर्स विज्ञान एवं प्रौद्योगिकी के विभिन्न क्षेत्रों में नवाचार को किस प्रकार बढ़ावा देते हैं? उदाहरण सहित स्पष्ट कीजिए। (उत्तर 250 शब्दों में दीजिए)

How do superconductors fuel innovation in diverse fields of science and technology? Illustrate with examples. (Answer in 250 words)

15

उम्मीदवारों को इस हिसाब में नहीं लिखना चाहिए  
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Superconductors are defined as materials that allow complete current to flow through them without obstruction via Meissner effect. (Eg) Liquid helium

Fuel Innovation in Diverse Fields

① Electricity Transmission

: 100% efficient with 0 transmission losses due to formation of "Cooper Pairs" of electrons

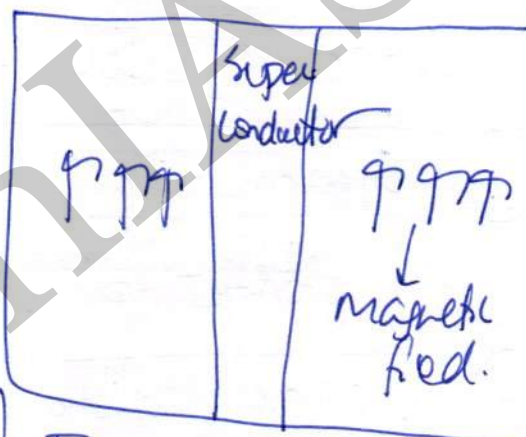


Fig: Expulsion of magnetic field (Meissner effect)

② Superfluidity : Can be understood

using superconductors

③ Properties at Absolute Zero : Matter

behaves different at 0K or  $-273^{\circ}$

④ **Nano-Technology** : Can be impled  
Using superconductors.

⑤ **Use in MRI** . machines that use  
superconductors to image body in  
non-invasive way

⑥ **Use in Space Research** : due to  
novel applications & properties.

(Eg) Experiment on Earth's gravity

⑦ **Genetics** : Can be used to study  
effect on DNA & phosphate  
backbones

⑧ **Military Applications** : to build strong  
communication systems (Rama Rao  
Committee)

⑨ **Quantum Technology** : Needs absolute  
0 temp & superconductors to

maintain "superposition" & "entangled"

⑩ Artificial Intelligence : Needs

superconductors to increase efficiency of power transformers.

⑪ Electricity Generation : Can be made less expensive with them.

(Eg) Suspension of anti-hydrogen atoms in superconducting mercury.

India must start a National Superconductors Mission to ensure practical & strategic use of them to build India as a Knowledge & Science Capital of world (Hon'ble PM)

18.

यद्यपि भारत में लगभग सभी प्रकार के बौद्धिक संपदा अधिकारों को कवर करने वाले कानून मौजूद हैं, फिर भी अनेक प्रवर्तन संबंधी, विनियामक और प्रशासनिक चुनौतियां भारत में बौद्धिक संपदा अधिकारों के व्यावसायीकरण में बाधा उत्पन्न करती हैं। सविस्तर वर्णन कीजिए। (उत्तर 250 शब्दों में दीजिए)

While India has laws covering almost all types of intellectual property rights, numerous enforcement, regulatory and administrative challenges hamper the commercialisation of IPRs in India. Elaborate. (Answer in 250 words)

15

## Intellectual Property Rights (IPR)

are defined as intangible rights on invention & other designs to reward hard work of owners. (WIPO) (Eg)

Trademark

Indian Laws on IPR: as per TRIPS Agreement

- ① Patent Act, 1970: Covers patents as industrial designs of inventive step & commercial application
- ② Copyright Act, 1957: Protects copyright of authors. (Eg) Authors, film producers
- ③ Trademark Act, 1999: Applicable to trademarks. (Eg) Nike "Just do it"
- ④ GI Act, 2000: Protects Geographical Indicators (Eg) Darjeeling Tea, Kashmir Pashmina

⑤ Design Act, 2000 : Protects aesthetically  
pleasing 2D/<sup>3D</sup> designs.

⑥ Integrated Circuits Act : to protect  
circuits & their operation

⑦ Plant Varieties Act : Protect plant  
varieties & farmer rights.

## Hindered Commercialisation

### I. Enforcement

① High delays . Eg US takes 1/3 time to  
grant patent

② Poor civil enforcement : for infringement  
of IPR. Eg Suit for injunction in  
clogged civil courts

③ Poor Awareness : of IPR law creating  
widespread infringement. Eg YouTube  
videos

### II. Regulatory

① Poor skills : of manpower in India

# IPR offices

① Lack of Adequate Will: to strictly enforce IPR.

② Difficult to Regulate: due to proliferation of emerging tech (Eg) NY Times sued ChatGPT for copyright violation

## III. Admin challenges

① Poor Manpower Strength: due to high vacancies

② Inadequate offices: in all parts of India to enforce IPR. (Eg) GI Office Chennai only

Solutions

- Strictly enforce all IPR
- Commercial exploitation (National Policy on IPR, 2016)
- Deterrence through severity of punishment
- Collaborate with other states

IPR can transform India into a Knowledge economy & build New

Developed India by Vigyan

19.

एकीकृत थियेटर कमान का निर्माण करने में सामना की जाने वाली चुनौतियों को ध्यान में रखते हुए, परीक्षण कीजिए कि कमानों का थिएटराइजेशन किस प्रकार तीनों सेनाओं के बीच जनशक्ति और संसाधनों के बेहतर एकीकरण और युक्तिकरण को बढ़ावा दे सकता है। (उत्तर 250 शब्दों में दीजिए)

Keeping in view the challenges in creating integrated theatre commands, examine how the theaterisation of commands can lead to greater integration and rationalisation of manpower and resources among the three services. (Answer in 250 words)

15

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

Theaterisation of Command is defined as transforming Indian Armed Forces to Theatre Commands commanded by single officer covering all personnel & assets

### Challenges of Theaterisation

#### I. Logistical Challenge

- Separation of assets of 3 forces (IAF only has 32 squadrons against needed 47)
- Unified Command:

Creating issue of subordination of one force under other

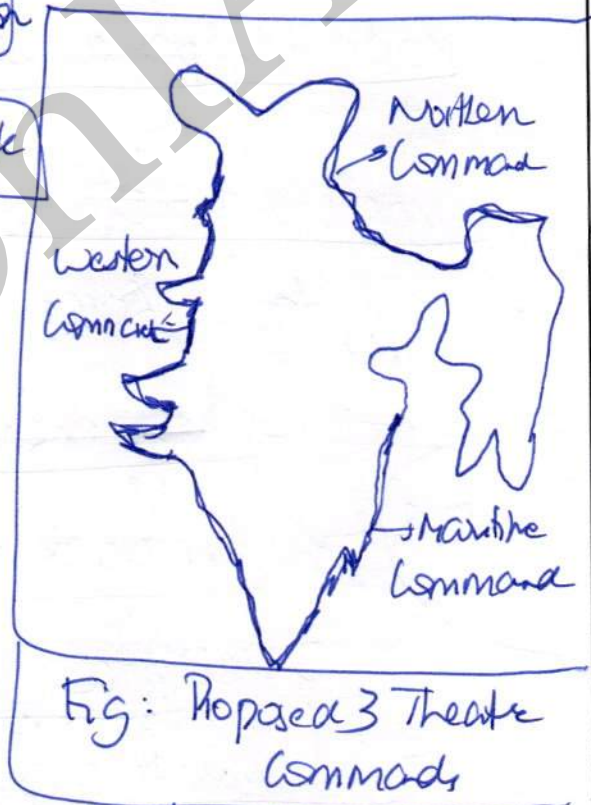


Fig: Proposed 3 Theatre Commands

#### II. Manpower Challenge

- Turf War: due to in-fighting b/w all

① Tough Decisions: to amalgamate & integrate functions.

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

② Battalion/ Regiment Structure: May be hampered due to conflicting regimental ethos. (Eg) Gorkha, Punjab, <sup>Or</sup> <sup>regiment</sup>

## Advantages of Theatreisation

### ① Greater Integration

1.1 Better Synergy: between all forces due to unified leadership (Kansil Review Committee)

1.2. Battle Ready: to fight "two & a half front" wave. (Shekhar Committee)

1.3. Grey Warfare: Theatre Commands better equipped to handle it. (Eg) Lyba attack

1.4. Stimulus to Cold Start Doctrine:

to quickly mobilise units & strike first in enemy territory. (Op Brassstacks)

## ② Rationalization of Manpower

2.1. Downsize / Rightsize Armed Forces: to increase tooth-nail ratio

2.2. Higher War Capacity: By battle ready & lean force (Lt. Gen Chakrabarti)

## ③ Rationalization of Assets

3.1 Better Use of Assets: by unified & integrated leadership.

3.2. Eliminate Duplication: of costly & the consuming battle/military assets

Theatringation of Command is the need for a battle-ready, futuristic and lean Indian armed Forces for fighting new warfare  
Gen CDS Bipin Rawat

सीमावर्ती गांवों को न केवल भौगोलिक दृष्टि से बल्कि सुविधाओं के मामले में भी प्रथम गांव मानना, सीमा सुरक्षा बढ़ाने की एक प्रमुख रणनीति हो सकती है। विवेचना कीजिए। साथ ही, इस संबंध में सरकार द्वारा किए जा रहे उपायों पर भी प्रकाश डालिए। (उत्तर 250 शब्दों में दीजिए)

Treating border villages as first villages not just geographically but also in terms of facilities can be a key strategy for enhancing border security. Discuss. Also, highlight the measures being taken by the government in this regard. (Answer in 250 words)

According to Hon'ble Raksha Mantri (RM), India's Border villages are India's eyes & ears on the border and must be developed by Indian govt.

Geographically : Situated

at border & few meters away from it — eyes & ears of Indian armed forces

Terms of Facilities

① Provide modern facilities

: to ensure economic

growth. Ex Road, electricity

② Prevent Out-Migration : to ensure

adequate population to act as information

Channels.



Fig: India's Border villages

○ Deter Chinese strategy : to take over Indian sparsely populated territory  
(Salami slicing strategy)

○ Provide all Modernities : to live, happy & dignified life (Eg) Internet, local employment opportunities

Measures Taken by Govt

○ Border Villages Program : to build modern village infrastructure in border villages (Central Sector scheme)

○ Operation Sadbhavana : By Indian Army to aid in development needs of border areas. (Eg) J&K

○ Modern Infrastructure : in border regions to ensure modern amenities.  
(Eg) Electricity connection

① Village Defence Groups : to defend against terrorists/ intruders by training village residents

② Mobile Connection Infra : to aid in internet penetration

③ Micro-Finance : to build self-employment & MSMEs in border regions (Malegam Committee)

④ Special Package : For modern development of all villages across border

→ Adopt a Village : By CSR funds

→ Convergence with CSO

→ Build world class infra for safe border

→ Encourage private investment

India must invest in its borders to build safe Bharat as we

[www.visionias.in](http://www.visionias.in) Can choose friends, not neighbors  
(D.M. / (1/1/2019))

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