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(To be filled by candidate)

Name of Candidate : AMIT MEENA

Roll No. : 0611198

Registration Number : NIAS 2200012613 Date of Examination : 13/08/23

Exam Centre : Old Rajinder Nagar ☐ Bhopal ☐ Online ☑

Test - 3 **Code : TC073**

MTS IGP Batch 2023

GENERAL INSTRUCTIONS

This Question-cum Answer (QCA) Booklet contains 56 pages. Immediately on receipt of the booklet, please check that this QCA booklet does not have any misprint or torn or missing pages or items, etc. If so, get it replaced by a fresh QCA booklet.

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Evaluator Code :

Q.No	Pg No.	Maximum Marks	Marks	Total
1	1			
2	3			
3	5			
4	7			
5	9			
6	11			
7	13			
8	15			
9	17			
10	19			
11	21			
12	24			
13	27			
14	30			
15	33			
16	36			
17	39			
18	42			
19	45			
20	48			
Grand Total				

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Q.1 अप्रत्याशित कर (विंडफॉल टैक्स) से आप क्या समझते हैं? क्या आपको लगता है कि अप्रत्याशित करों से संपदा का प्रभावी ढंग से पुनर्वितरण हो सकता है और अधिक आर्थिक समानता को बढ़ावा मिल सकता है?

(150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Windfall tax? Do you think that windfall taxes can effectively redistribute wealth and promote greater economic equality? (Answer in 150 words) 10 Marks

A windfall tax is an additional tax levied on big corporates that are registering sudden and huge increase in their profits without any additional effort.

Recently, India applied windfall tax on crude oil, ATF fuels due to Russia - Ukraine crisis.

Windfall Tax → redistribute wealth & promote equality :-

① Tax collected from the rich is used for social welfare, Eg education, health.

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(2) Income inequality → Oxfam: top 10% have 70% wealth
↳ shifts money from the rich to the needy.

(3) Prevents profiteering and helps in inflation indexing.

(4) Better Tax/GDP ratio and reduces fiscal burden.

Challenges

- seen as arbitrary and excessive burden of pvt. sector.
- instable tax regime → decreases investment
- promotes tax evasion.

Way Forward

- permanent mechanism
- reasonable tax rate to ensure growth.

Thus windfall tax can help the govt achieve the task of welfare state (Art 38).

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Q.2 नई मौद्रिक नीति समिति (एमपीसी) व्यवस्था के अंतर्गत मुद्रास्फीति लक्ष्यीकरण को क्रियान्वित करने की कथित सफलताओं और चुनौतियों पर चर्चा कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss the perceived successes and challenges of implementing inflation targeting under the new Monetary Policy Committee (MPC) regime. (Answer in 150 words) 10 Marks

The Monetary Policy Committee setup in 2016 has the task of determining the policy interest rate to achieve inflation targeting of 4% (± 2%).

Success

1. Maintained the target of inflation control except Covid 19.
2. Boosts investor confidence and increase in FDI & FPI.
3. Economic stability during shocks like demonetisation and inflation.
4. Strengthened the forex reserves (> $500 bn).

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Challenges

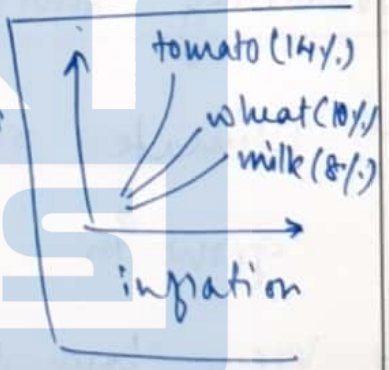
① Global uncertainty → fed tapering, R-U war etc.

② Monetary policy along with fiscal policy is required to maintain proper balance.

③ Dilemma of growth v/s inflation

④ Huge import dependence leading to CAD.

⑤ Food inflation → influenced by various factors like monsoon etc.



⑥ Banks and NBFCs have the final task of providing the trickle down benefits → which has not happened several times.

Despite these challenges, the MPC has ensured that inflation is in control without hampering the growth.

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Q.3 भारत में सतत् कृषि को बढ़ावा देने और खाद्य सुरक्षा में सुधार के लिए मोटे अनाज उत्पादन की क्षमता का आकलन कीजिए। (150 शब्दों में उत्तर दीजिए) 10 अंक

Assess the potential of millet production in promoting sustainable agriculture and improving food security in India. (Answer in 150 words) 10 Marks

Budget 2023-24 has focused on millet as "Shree - Anna" and 2023 being the "International Year of Millets".
↳ Eg Bajra, Ragi

Promoting sustainable agriculture

(1) Climate resilient crops → can grow in arid / semi-arid regions.

(2) Very low water requirement
↳ depleting groundwater.

(3) Enhancing soil fertility by nitrogen fixing bacteria.
↳ Eg Mycorrhiza

(4) Pest resistant and ensures diversification through crop rotation.

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Improving food security

① "Nutri-cereals" → rich in protein, fibre, vitamin etc.

② low glycemic index and good for cardiovascular health.

③ Gluten free and address the issue of hidden hunger.

④ Low maturity period → 70 days approx. ↳ "food for all".

⑤ Longer shelf life → can be stored for more than 10 years.

⑥ Balanced diet → necessary for ~~growth~~ growth.

Thus through govt. interventions India can transform millets from "poor man's cereal" to "every man's cereal".

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Q.4 जल जीवन मिशन में पेयजल की उपलब्धता और पेयजल तक पहुँच में क्षेत्रीय विषमता को समाप्त करने का सामर्थ्य है। मिशन के महत्त्व पर प्रकाश डालते हुए, वांछित उद्देश्यों की प्राप्ति में अंतर्निहित बाधाओं पर चर्चा कीजिए।
(150 शब्दों में उत्तर दीजिए) 10 अंक

Jal Jeevan Mission has the potential to end the regional disparity in the availability and accessibility of drinking water. Highlighting the significance of the mission, discuss the underlying impediments in achieving the desired objectives.
(Answer in 150 words) 10 Marks

Jal Jeevan Mission was launched with the goal to provide safe and adequate drinking tap water to every household by 2024.

Regional Disparity
- very heavy rain v/s no rain
- rural v/s urban
- polluted v/s clean water,

Significance of JJM

1. Har Ghar Jal → provide 19 crore rural households with tap water.
2. Focus on rural households and participatory mechanism.
3. Women & children centric →

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water wires, water borne diseases.

(4) Drought prone areas.

(5) Improving water quality to ensure pollutant free.

Impediments

(1) As of now, only 66.67% of the 19cr households have received connection.

(2) Huge financial burden and capital investment.

(3) Groundwater contamination → fluoride, arsenic

(4) Seasonal variation due to erratic monsoon.

(5) Huge differential cost per population density.

Thus there is a need to speed up the process through decentralised planning

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Q.5 बैटरी ऊर्जा भंडारण प्रणाली (बीईएसएस) से आप क्या समझते हैं? इसके अनुप्रयोगों पर चर्चा कीजिए और यह भारत के ऊर्जा कार्यक्रम में किस प्रकार क्रांतिकारी बदलाव ला सकता है। (150 शब्दों में उत्तर दीजिए) 10 अंक

What do you understand by Battery Energy Storage Systems (BESS)? Discuss its applications and how it can revolutionize the energy program of India. (Answer in 150 words) 10 Marks

Battery Energy Storage System (BESS) are rechargable batteries that can be used to store energy from different sources and used when needed.

Budget 2023 → 1000 MWh BESS.

Application

- storage of renewable energy like solar & wind
- requires smaller area due to higher energy density
- ⇒ Reduce power failure when connected to grid.
- smart management system can increase efficiency

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- reduce loss of energy.
- meet supply demand surge.

Revolutionise energy program

1. Smart grid and net metering can allow energy to power grid.
2. Better electric vehicle infrastructure
   - more adoption
3. Rural electrification and reducing power cuts.
4. Huge service sector & vast employment potential.
5. Help reach "Net zero by 2070".

Thus BESS can help India in achieving its INDC goals and shift away from coal based energy.

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Q.6 इसरो के गगनयान मिशन में हुए विकास और उपस्थित चुनौतियों पर संक्षिप्त चर्चा कीजिए। समाज के लिए मिशन के संभावित लाभ क्या है? (150 शब्दों में उत्तर दीजिए) 10 अंक

Discuss in brief developments and challenges in the Gaganyaan mission of ISRO. What are the possible benefits of the mission for the society? (Answer in 150 words) 10 Marks

Gaganyaan mission is going to be India's first manned mission to space. It will make India the 4th nation to do so.

Development

- 3 astronauts to space by 2025
- Training module for astronauts.
- crew module
- Re-entry test of GSLV Mk III
- Abort Test successful
- Life support systems, etc.

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Challenges

1. No proper training facilities → collab with Russia and ISS.
2. Human rated launch vehicle
   - haven't been tested.
3. Crew escape module and life support system
4. Mental pressure on astronauts.
5. Huge financial cost.

Possible benefits

1. Join the global list of 3 countries.
2. Soft power and rising global power
3. Space exploration and further research.
4. Huge potential in space sector and vast employment opportunities.

Thus the Gaganyaan mission, just like MOM and Chandrayaan holds huge relevance.

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Q.7 "जलवायु परिवर्तन और प्रदूषण से निपटने की हमारी खोज में हरित हाइड्रोजन एक सरल और जादुई समाधान हो सकता है"। भारत के राष्ट्रीय हरित हाइड्रोजन मिशन के आलोक में कथन का आलोचनात्मक विश्लेषण कीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"Green hydrogen can be the silver bullet in our quest to tackle climate change and pollution". Critically analyze the statement in light of India's National Green Hydrogen mission.

(Answer in 150 words) 10 Marks

The National Green Hydrogen Mission launched for 2123 to 2029-30 for the production of green hydrogen is a silver bullet to tackle climate change.

Green H_2 → produced by electrolysis
- using renewable energy.
- making it one of the most clean source of energy.

Significance for Climate change

1. Use of renewable energy.
2. Carbon neutral
3. Reduce global warming
4. Promote more adoption &

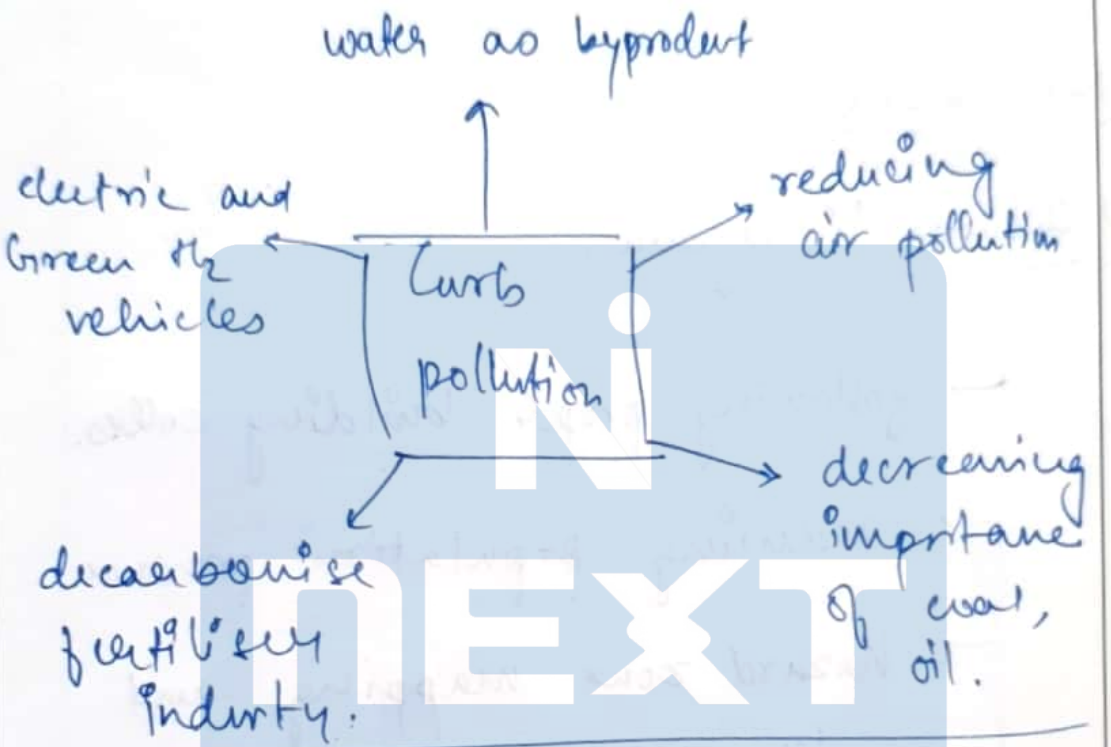
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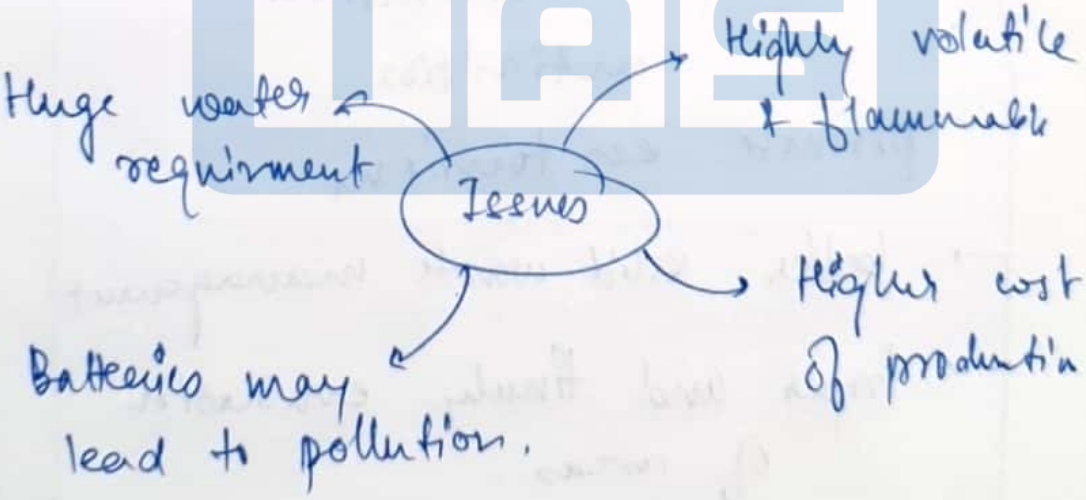
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storage of renewable energy.

(5) Sustainable in the long run.





Thus proper planning along with the NGHM can help India achieve SDGs.

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Q.8 हाल ही में जोशीमठ, उत्तराखंड में आई आपदा के आलोक में, हिमालय क्षेत्र में आपदा प्रबंधन और पर्यावरण संरक्षण के लिए मुख्य सबक क्या है? (150 शब्दों में उत्तर दीजिए) 10 अंक

What are the key lessons for disaster management and environmental conservation in the Himalayan region, in light of the recent disaster in Joshimath, Uttarakhand? (Answer in 150 words) 10 Marks

⇒ Key lessons

- Disaster Management
  - following proper building codes.
  - reducing population pressure
  - hazard zone mapping and ban on construction activities.
  - promote eco tourism
  - better solid waste management
  - Proper and timely evaluation of areas.
  - Evacuation of high risk areas.
  - Help of NGO, environmentalists in promoting sustainability.

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⑧ Environment Conservation

- Promoting Afforestation and reducing deforestation (REDD+)
- Conservation of natural biodiversity.
- EIA and Social Audit
- Community participation
- Adaptation to the environment.
- Promoting sustainable development
  - eg terrace farming, Agroforestry.

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Q.9 'पंजाब में हालिया कट्टरपंथी रुझानों से पता चलता है कि खालिस्तान का मुद्दा अभी भी उबल रहा है।' हालिया घटनाक्रम के संबंध में कथन पर चर्चा कीजिए और इससे निपटने के उपाय सुझाएँ।

(150 शब्दों में उत्तर दीजिए) 10 अंक

"The recent radical trends in Punjab show that the Khalistan issue is still simmering." Discuss the statement with respect to recent developments and suggest measures to handle it.

(Answer in 150 words) 10 Marks

Recent developments

- Post farmer's protests, there has been growing support for Khalistan movement.
- Rising protests in foreign nations. Eg Canada.
- Leaders like Amritpal Singh rising to fame and trying to revive the movement.
- Attack on police station.

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Measures

- Community policing & strengthening the social bond
- Dialogue between the leaders and administration
- Better grievance redressal
- Banning Khalistani organisation under UAPA
- Tighten security to prevent clashes & riots.
- Promoting cultural harmony
- Better development of the region.

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Q.10 ड्रोन संचालन में आसानी और साथ ही इसके संचालक की अनामिता, भारत की सीमा सुरक्षा की चुनौतियों में वृद्धि करती है। विस्तारपूर्वक वर्णन कीजिए और सीमावर्ती क्षेत्रों में ड्रोन समस्या से निपटने के लिए सुझाव दीजिए।

(150 शब्दों में उत्तर दीजिए) 10 अंक

The anonymity and ease of drone operation contribute to the challenges of India's border security. Elaborate and give suggestions to tackle the drone problem in border areas.

(Answer in 150 words) 10 Marks

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Q.11 विद्युत संशोधन विधेयक, 2022 उपभोक्ताओं, डिस्कॉम के साथ–साथ पर्यावरण के लिए कई लाभ प्रस्तुत करता है। सविस्तार वर्णन कीजिए। साथ ही इसकी कमियों को भी सूचीबद्ध कीजिए और उन्हें दूर करने के लिए कुछ उपायों का भी सुझाव दीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Electricity Amendment Bill, 2022 brings several advantages for consumers, DISCOMs as well as the environment. Elaborate. Also, list out its shortcomings and suggest some measures to overcome them. (Answer in 250 words) 15 Marks

The Electricity Amendment Bill 2022 was brought in to make energy more reliable, affordable, accesible and non-discriminatory.

Advantages

→ **Consumers:-**

① Allows for non discriminatory access to ~~electricity~~ electricity by being able to choose DISCOM.

② SERC will do graded and timely tariff revisions. → better pricing

③ Improve the quality and [aess of electricity.
[reducing power cuts.

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→ Discoms :-

① Power and associated cost as per PPA to be shared among all.

② One DISCOM can operate in multiple states, after licensing.

③ Cross Subsidy Balancing fund.

→ Environment :-

① RPO → certain percentage of electricity from renewable.

② Augment other schemes like PM KUSUM.

③ Reducing electricity losses.

Shortcomings

① Limited cost efficiency as 70-80% of total cost is from power procurement.

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(2) Against principle of subsidiarity → CERC not competent to distribut license.

(3) Conflict of interest → DISCOMs sharing network.

(4) Choice is still limited for customers.

(5) Might lead to rise in prices.

Measures

(1) More focus on renewable energy.

(2) Reduce ATT losses, to reduce price.

(3) Proper implementation and coordination among states.

(4) Recapitalisation of DISCOMs.

Thus EA Bill 2022 is a step in the right direction and these measures can help it achieve the goal.

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Q.12 भारतीय प्रतिभूति एवं विनिमय बोर्ड (सेबी) शेयर बाजार के नियमन और निवेशकों के हितों की सुरक्षा में महत्त्वपूर्ण भूमिका निभाता है। दिये गए कथन के आलोक में, सेबी के समक्ष आने वाली चुनौतियों पर प्रकाश डालिए और इस संबंध में सुधारों का सुझाव दीजिये। (250 शब्दों में उत्तर दीजिए) 15 अंक

Securities and Exchange Board of India (SEBI) plays an important role in the regulation of the share market and safeguarding the interests of investors. In the light of given statement, highlight the challenges faced by the SEBI and suggest reforms in this regard. (Answer in 250 words) 15 Marks

With the recent Adani - Hinderberg issue, SEBI and its regulations have come under scrutiny.

Role of SEBI

1. Regulatory functions → like registrations of stock brokers, intermediaries etc.
2. Promote trading in security market.
3. Protective functions like prohibit insider trading etc.
4. Implementing Depository Act.
5. Creates awareness about shares and mutual funds.

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Challenges

1. Poor implementation of regulations leading to violation.
   - Eg Adani – overvaluation.
2. Inside Trading → regulation
3. Increased investors and diversification of securities market. (~ 20 cr people)
4. Rising cybercrimes and cases of Algotrading → not detectable.
5. Work force → lacking economic experts.

Reforms

1. Better regulatory framework and suo moto disclosures.

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(2) capacity building of employees and improve productivity.

(3) Bringing in experts from different domains.

(4) Increasing awareness about capital market and promoting it.

(5) Use of technology like AI based surveillance systems → to track suspicious acts.

Thus to ensure transparency and accountability and instill confidence in the investors, these reforms need to be brought in.

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Q.13 भारतीय अर्थव्यवस्था में एक प्रमुख योगदानकर्ता होने के बावजूद, कृषि क्षेत्र कई बाधाओं से ग्रस्त है जो इसकी वृद्धि और विकास में बाधा डालते हैं। इन बाधाओं पर काबू पाने में प्रौद्योगिकी की भूमिका पर चर्चा कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

Despite being a major contributor to the Indian economy, the agriculture sector is plagued by several constraints that impede its growth and development. Discuss the role of technology in overcoming these constraints.

(Answer in 250 words) 15 Marks

Agriculture sector employs about 45% and contributes to 16% of the GDP, yet it is not able to achieve its full potential.

Contribution of Agriculture
- provides livelihood
- food security
- export potential
- empowerment of marginalised.

Constraints

① Small and marginal farmers 86% → landholdings small.

② Poor productivity compared to other nations like China.

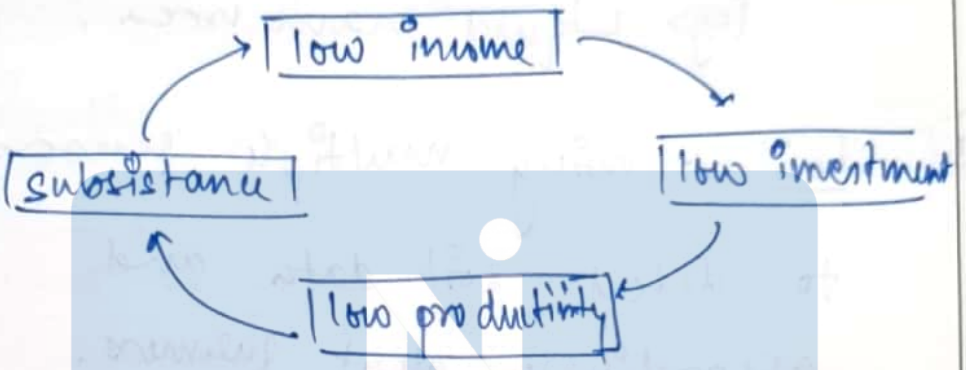
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③ No economies of scale and poor farm mechanisation.

④ Vicious cycle of poverty.



⑤ Infrastructural deficit → poor forward & backward linkages.
eg cold storage.

⑥ Excessive use of fertilisers and pesticides → decreased soil quality

⑦ Water guzzling crops. eg rice.

Role of technology

① Precision agriculture and smart agriculture using nano-sensors.

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② Biotechnology → GM crops, HYV.

③ Nanotechnology → nanofertilizers.
eg Liquid nano urea.

④ IoT → using multiple sensors to detect soil data and accordingly alert farmers.
eg drip irrigation based on moisture.

⑤ Mobile & 5G → better access to best practices and services like KVK, KSK etc.

⑥ Drones → aerial seeding, spraying pesticides etc.

⑦ e-governance: JAM trinity (DBT)

⑧ Agristartups and e-NAM.

Thus technology can be a game changer for our "Annadata".

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Q.14 पर्यावरण एवं प्राकृतिक संसाधनों पर सिंचाई के प्रभाव का मूल्यांकन कीजिए, और कृषि में सिंचाई पद्धतियों की संधारणीयता और समता सुनिश्चित करने के लिए उपाय सुझाएँ। (250 शब्दों में उत्तर दीजिए) 15 अंक

Evaluate the impact of irrigation on the environment and natural resources, and suggest measures to ensure the sustainability and equity of irrigation practices in agriculture.
(Answer in 250 words) 15 Marks

In India, about 52% of the agriculture is rainfed and thus irrigation is of huge importance.

Impact of irrigation

(1) Groundwater depletion and drying up of aquifers (92% for agriculture).

(2) Soil erosion and increasing soil leaching by arsenic, fluorides etc.

(3) Diversion of freshwater for irrigation, leading to reduced water.

(4) Soil salinization Eg Punjab.

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(5) Eutrophication due to increased supply of nutrients and chemicals into water bodies.

(6) Increases productivity of crops.

(7) Recharges the natural aquifers.

(8) Ensure food security and protects the environment from drought.

Measures to ensure sustainability and equity :-

(1) Integrated watershed management plan.

(2) Rainwater harvesting and traditional techniques eg Bandi.

(3) Use of technology like drip and sprinkler irrigation

(4) Recycling of grey water.

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(5) Precision and smart agriculture → irrigating as per the demand.

(6) Moving towards more climate resilient crops like Millets.

(7) PMKSY → Har Khet ko Pani
↳ per drop more crop.

(8) Zero Budget Natural farming
↳ sustainable way using mulching (retention of moisture).

(9) Best practice → Israel (plastic mulching)
↳ Tamil Nadu (rainwater)

Thus the govt. schemes like PMKSY, PM KUSUM, Paramparagat Krishi Yojana are steps in the right direction.

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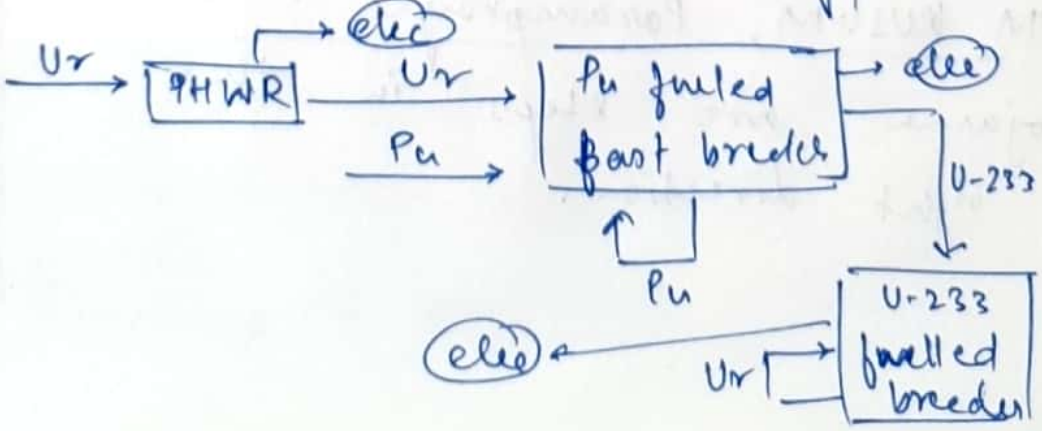
Q.15 परमाणु ऊर्जा और अंतरिक्ष प्रौद्योगिकी के क्षेत्र में क्रमशः डॉ. होमी जहाँगीर भाभा और डॉ. विक्रम अंबालाल साराभाई के योगदान से भारत को रणनीतिक रूप से किस प्रकार लाभ हुआ? (250 शब्दों में उत्तर दीजिए) 15 अंक

How India benefitted strategically from the contributions of Dr. Homi Jehangir Bhabha and Dr. Vikram Ambalal Sarabhai in the fields of atomic energy and space technology respectively?
(Answer in 250 words) 15 Marks

Dr. Homi J. Bhabha and Dr. Vikram A. Sarabhai have been pioneers in their fields and made India self sufficient to achieve their vision of a developed country.

Contributions of Dr. Homi J. Bhabha in atomic energy :-

① India's 3 stage nuclear power program to ensure energy security



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(3) Pioneered the use of thorium to extract uranium.

(5) Promote nuclear energy as 1st Chairman of Atomic Energy Commission.

(4) Established BARC → as India's leading nuclear research facility.

(5) Est. India's first atomic reactor – Apsara.

(6) Contributed to the "no first use policy".

Contributions of Dr Vikram Sarabhai in Space technology :-

(1) Est. INCOSPAR which was later transformed into ISRO.

(2) Launching India's 1st satellite → Aryabhatta.

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(3) Promoted innovation and training scientists including Dr. APJ Abdul Kalam.

(4) Worked with Dr. CV Raman at IISc in study of cosmic rays.

(5) Thumba station launching pad was also developed.

(6) Being 1st ISRO Chairman → INSAT satellites were developed for communication.

The contribution of both Dr. H. J. Bhabha and Dr. V. Sarabhai are immense and their vision has led to India to becoming a "Vishwaguru" i.e. world power.

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Q.16 जेनरेटिव एआई निकट भविष्य में नवाचार की सीमाओं को आगे बढ़ाने का सामर्थ्य रखता है, फिर भी इसका सामाजिक प्रभाव पर्याप्त चुनौतियाँ खड़ी करता है। सविस्तार उत्तर दीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Genreative AI holds the potential to push the boundaries of innovation in the near future, yet its societal impact raises substantial challenges. Elaborate. (Answer in 250 words) 15 Marks

With the recent advent of Chat GPT and Bard, generative AI has gained alot of attention.

Generative AI → refers to AI tech. that can create new content like texts, audio, images etc. that closely resemble human-created content.

Potential of Generative AI

① Creating realistic images, animation and music.
Eg DALL-E → text to image.

② Improving search enginges & chatbots. Eg Bing.

③ Producing several outputs

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to choose from → better choices.

④ cost saving & faster results.

⑤ Healthcare → drug discovery, disease diagnosis.

⑥ Education → personalised learning increasing effectiveness.

⑦ Agriculture → predicting weather patterns and suggesting reforms.

⑧ Analysing Big Data and providing deeper insights.

Challenges to society

① Accuracy → not fool proof

② Fear of misinformation & manipulation. Eg fake news.

③ Trust issues → not able to distinguish real & generated.

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④ Partisan model → inherit bias from training data.

⑤ IPR issues → cases of piracy & plagiarism.

⑥ Automation → leading to jobs loss.

⑦ Deep fakes → for frauds, privacy issues.
- → identity theft
- → pornographic content

⑧ Reduced creativity among people.

⑨ Students copying homework.

⑩ Accountability not yet established

Way forward → updated legal framework
- → International collab. (GPAI)
- → skill development & AI educ^n
  - eg PMKVY 4.0

Thus gen. AI can have multiple uses but it must be regulated.

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Q.17 नवंबर 2022 में मिस्र में COP27 संयुक्त राष्ट्र जलवायु परिवर्तन सम्मेलन में लॉन्च किये गए "जलवायु के लिए मैंग्रोव गठबंधन" के उद्देश्य को स्पष्ट कीजिए। उष्णकटिबंधीय देशों की तटीय पारिस्थितिकी को बनाए रखने में मैंग्रोव के महत्त्व पर विस्तार से प्रकाश डालिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

Explain the purpose of the "Mangrove Alliance for Climate" launched at the COP27 UN Climate Change Conference in Egypt in November 2022. Elaborate on the importance of mangroves in maintaining the coastal ecology of tropical nations. (Answer in 250 words) 15 Marks

India, UAE, Indonesia along with 4 other countries launched the Mangrove Alliance for Climate at COP 27 to provide for global solutions to problems leading to mangrove depletion.

Purpose

- Spread awareness and promote education about mangroves.
- Conservation & restoration of mangrove ecosystem
- Proper knowledge sharing
- targeted commitments &

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deadlines.
→ other expert groups like NGO, environmentalists are also part.

Importance of mangroves

① They provide us with various ecosystem services.

② Provide for food and other basic necessities like wood etc. eg fisheries, prawns.

③ Protect the coastal regions from disasters like cyclones and storm surges.

④ Play a crucial role in various nutrient cycles like carbon cycle.

⑤ Stops soil & coastal erosion.

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⑥ Fresh air and water → removes pollutants and sequesters them.

⑦ Blue carbon → act as natural carbon sink.

⑧ Huge biodiversity → acts as ecotone.

⑨ Great tourism potential → calm.

Challenges

- Climate change & global warming
- encroachment & deforestation
- decreased water supply.
- huge pollution & clogging.

Thus, through proper cooperation of both global & local communities, we can preserve the "kidneys of the world."

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Q.18 आपदा प्रतिरोधी बुनियादी ढाँचे के लिए गठबंधन का गठन भारत में आपदा प्रबंधन दृष्टिकोण को और अधिक मजबूती प्रदान करता है। टिप्पणी कीजिए। भारत में आपदाओं से निपटने के लिए एक नई रणनीति की आवश्यकता के औचित्य सिद्ध कीजिए। (250 शब्दों में उत्तर दीजिए) 15 अंक

The Formation of the Coalition for Disaster Resilient Infrastructure brings more robustness to the Disaster Management approach in India. Comment and justify the need for a new strategy to tackle Disasters in India. (Answer in 250 words) 15 Marks

Coalition for Disaster Resilient Infrastructure (CDRI) was launched by India and is a global partnership of various govt and agencies to increase infrastructure resilience.

Role of CDRI in disaster management

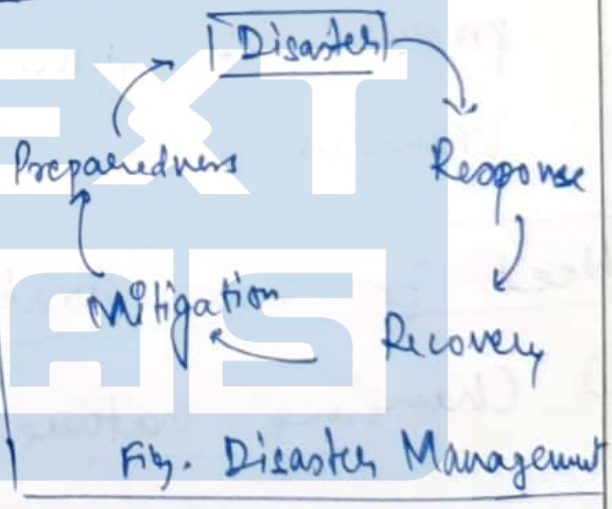


Fig. Disaster Management

① Provides for technical expertise and planish solutions to counter disasters.

② Provides for funds and investment.

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(3) Upgrading the present infrastructure to make it resilient through retrofitting.

(4) Capacity building and training of NDRF & SDRF.

(5) Reducing overall loss of lives, property in sync with Sendai framework.

Need for new strategy

(1) Changing nature of disasters.

(2) Increasing vulnerabilities to extreme weather events.

(3) Various disasters are not listed like lightning, wild fire etc.

(4) Poor infrastructure → almost

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92%. of it is poorly compliant.

(5) Global nature of disasters leading to better collaboration & coordinated efforts.

(6) More expertise and funds requirement.

(7) Protect the vulnerable & marginalised. Eg women, poor etc.

Thus CDRI and its projects like IRIS can help several nations and India by bringing in a new disaster strategy can become resilient and act as a global role model.

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Q.19 महत्त्वपूर्ण बुनियादी ढाँचे (क्रिटिकल इंफ्रास्ट्रक्चर) और प्रमुख निगमों को लक्षित करने वाले रैंसमवेयर हमलों में हुई हालिया वृद्धि ने मजबूत साइबर सुरक्षा उपायों और नीतियों की तत्काल आवश्यकता पर प्रकाश डाला है। इस प्रवृत्ति में योगदान देने वाले प्रमुख कारकों पर चर्चा करते हुए, विभिन्न क्षेत्रों पर इन हमलों के प्रभाव का विश्लेषण कीजिए।

(250 शब्दों में उत्तर दीजिए) 15 अंक

The recent rise in ransomware attacks targeting critical infrastructure and major corporations has highlighted the urgent need for stronger cybersecurity measures and policies. Discussing the key factors contributing to this trend, analyze the impact of these attacks on various sectors.

(Answer in 250 words) 15 Marks

The recent cyberattack on the AIIMS server leading to its shutdown for over a week, and the CoWIN data leak have raised concerns for cybersecurity.

Key factors leading to recent rise

1. Lack of proper security infrastructure.
2. Anonymity and crypto currency along with Dark Web has increased such attacks due to reduced chances of being caught.
3. Poor digital safety mechanism.

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Eg downloading pirated content.

④ Role of State & Non State Actors → cyber terrorism.

⑤ Spying on important personalities. Eg Pegasus.

⑥ global connectivity → can cause the attack from anywhere, and difficult to trace.

Impact on various sectors

① Security → threat to overall national security and critical infrastructure. ~~Eg UCCID~~ Eg power grid.

② Health sector
- data leak of all patients
- → issue of privacy.

③ Loss of confidence of investors,
- → decrease in investment.

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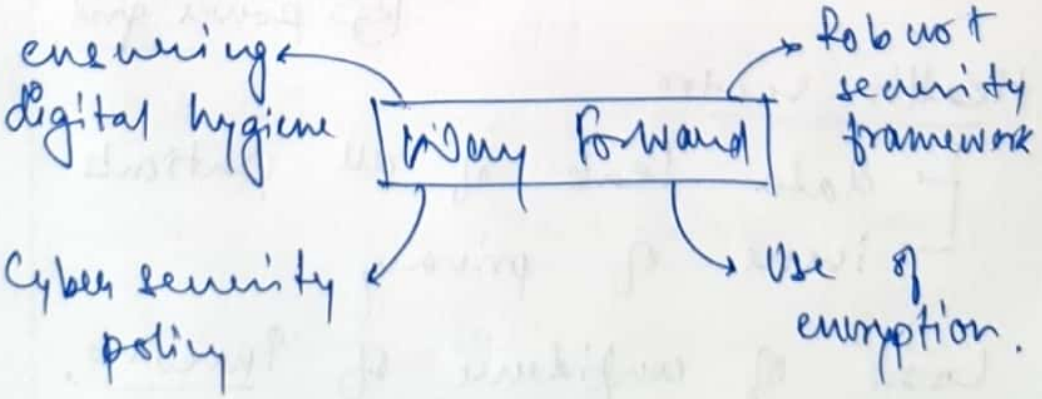
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④ Critical information infrastructure
↳ threaten the whole nation.

⑤ Energy security and might lead to crisis → failure of grids.

⑥ Social engineering and changing perception. Eg Cambridge Analytica.

⑦ Ransomware & attack on financial infrastructure can disrupt the entire payment ecosystem and the economy.



Thus, we must stay aware at all times to not fall trap to such cyberattacks.

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Q.20 सीमा सुरक्षा के संदर्भ में, तटीय और स्थलीय सीमाओं के प्रभावी और कुशल प्रबंधन को सुनिश्चित करने के लिए विभिन्न सुरक्षा एजेंसियों के बीच सहयोग और समन्वय को कैसे बेहतर बनाया जा सकता है?

(250 शब्दों में उत्तर दीजिए) 15 अंक

In the context of border security, how can cooperation and coordination between different security agencies be improved to ensure effective and efficient management of coastal and terrestrial borders?

(Answer in 250 words) 15 Marks

India having a vast ~~boarder~~ land border of almost 15,200 km and a coastline of about 7,500 km, makes it imprtant to ensure coordinated border security.

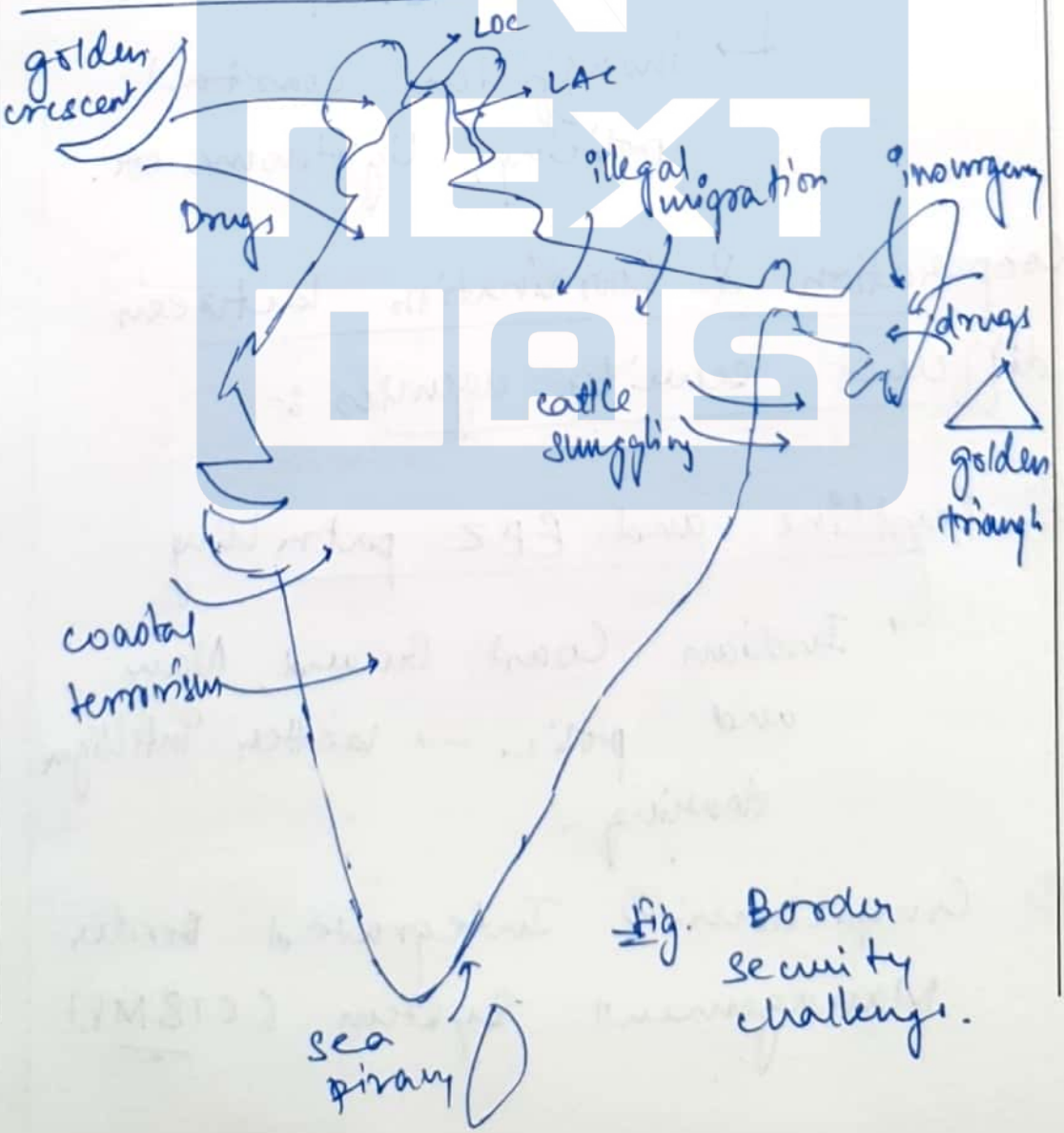


fig. Border security challenges.

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Other issues

- porous borders → infiltration
- State sponsored terrorism
- Arms smuggling (eg Pakistan, Myanmar)
- poor infrastructure
  - connectivity & fencing issues
  - insufficient coastal policing, lighthouse etc.

Cooperation & Coordination between different security agencies :-

1. Coastline and EEZ patrolling
   - Indian Coast Guard, Navy and police → better intelligence sharing.
2. Comprehensive Integrated Border Management System (CIBMS)

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(3) Infrastructure development like road, bridges with help of BRO. eg Parvatmala.

(4) Information & intelligence sharing among army, CAPF, IB, RAW etc.

(5) Joint training & operation to improve cooperation.

(6) Local police as eyes and ears and community policing.

(7) NIA, coordinate and standard operating procedure with issues like arm trafficking

Thus steps like Vibrant Village program to ensure local communities are involved in effective border management can go a long way.

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Space for Rough Work

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