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GENERAL STUDIES (TEST CODE : 2079)

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Medium Eng./Hindi	ENGLISH	Registration Number	1344988
Center	ORN	Date	25/07/2022

INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	10	
2	10	
3	10	
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9	10	
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11	15	
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15	15	
16	15	
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18	15	
19	15	
20	15	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **HINDI & ENGLISH** इसमें बीस प्रश्न हैं हिन्दी और अंग्रेजी में छपे हैं।
3. **All questions are compulsory.**
सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
5. 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 medium other than the authorized one.
प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न-सह-उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

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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.

VisionIAS

1. परीक्षण कीजिए कि भारत में सार्वजनिक वितरण प्रणाली (PDS) के डिजिटल रूपांतरण ने इसे बाधित करने वाली चुनौतियों का समाधान करने में कैसे मदद की है। (150 शब्दों में उत्तर दें)

Examine how digital transformation of the Public Distribution System (PDS) in India has helped in addressing the challenges besetting it. (Answer in 150 words) 10

PDS - is the pioneer govt scheme that provides affordable access to food grains to ensure nutritional security

AIM OF PDS

redistribution of food grains
₹3/kg for rice
₹2/kg for wheat
₹1/kg for coarse grains

Issues in PDS system in India

(i) Leakages

NSSO (2011-12) → about 45% of food grains go out of track during transportation

(ii) Bogus card & beneficiaries

Grains are often routed to open market while real beneficiaries don't get it.

(iii) Corruption

Deliberate gatecrashing of software, un serviced machinery forces off-line services

(iv) Lack of checks & balances by senior authoritiesInitiatives to Revive PDS in India:(i) All India connectivity - ONORE

- ↳ linking ration cards
- ↳ ensure last mile connectivity

(ii) Smart Ration cards

↳ data storage & automatic handling in Haryana, Rajasthan etc.

(iii) e-Point of Sale at Fair price shops - for distri of food grains.(iv) Tracking - driven by GPS enabled monitoring.

effective & transparent implementation of PDS is essential for improved service delivery and reaching the

Antyodaya

2. चर्चा कीजिए कि किस प्रकार अनाज की वास्तविक कमी की तुलना में खराब खाद्यान्न प्रबंधन भारत में खाद्य सुरक्षा के समक्ष एक बड़ी चुनौती रहा है। (150 शब्दों में उत्तर दें)

Discuss how poor grain management has been a greater challenge to food security in India than the actual shortage of grains. (Answer in 150 words) 10

India is ^{one of the} largest producer of grains in the world. Yet, poor mismanagement & wastage of food means undernourishment, stunting & acute hunger.

* Issues of poor grain management

1. Post Harvest Losses

↳ attributed to unscientific storage, pest attack, rodents.

↳ Wald Bank = food wasted had potential to serve $\frac{1}{3}$ poor.

2. Storage facility with FCI:-

Buffer stock limit is 13.5 MT. (Rice).

Yet, during bumper crop year, production = 40 MT+. leads to wastage.

3. Infrastructure deficits
unavailability of temperature &
moisture requirements for
longer shelf life

4. Open ended procurement &
Storage :- Leads to hazies
in effective delivery of goods.

* Effective solution :-

1. Processing of food grains -
for longer storage, shelf life

2. Private sector engagement -
to create additional storehouse,
warehouses etc.

3. Export promotion in excess
of buffer to promote
food nutrition - in Africa.

Effective handling of food
grains and ensuring that
they reach their beneficiaries
is significant for NFSA, 2013 &
SDG - Zero hunger

3. चारे की खराब गुणवत्ता और उसकी अपर्याप्त उपलब्धता भारत में पशुधन की कम उत्पादकता के पीछे प्रमुख कारण हैं। चर्चा कीजिए। (150 शब्दों में उत्तर दें)

Poor quality and inadequate availability of feeds and fodder are the major reasons behind the low productivity of the livestock in India. Discuss. (Answer in 150 words) 10

As per global survey, productivity of Indian livestock (1777 kg/animal) is lower than global average (2500 kg/animal)

Causes for lower productivity

Intrinsic

Low genetic yield

Extrinsic

poor nutrition,
inferior farm
management,
veterinary services
Poor fodder & feed

It is because of following reasons:-

1. Pressure over land

Simultaneous demand for food grains, oilseeds & pulses, declining land size etc.

2. Price volatility

firms producing concentrates resort to substitution of feed goods at expense of quality.

3. Poor Quality fodder due to lack of incentives
4. Issues with dry fodder/crop residue where farmers prefer higher return goods.

Measures to Improve Quality & Quantity

1. Incentives to farmers :-
such as, credit facility, assured market, linkages etc.
2. Buffer stocks
establish community fodder bank where surplus buffer can be stored.
3. Integrated farming system
will help promote sustainability by advancing the goals.
4. Cooperatives
Initiatives include create cooperative build grazing lands.

Nutritious feeds & fodder is essential to boost livestock productivity and leverage greater results.

4. शहरी कृषि से आप क्या समझते हैं और इसके विभिन्न प्रकारों का वर्णन कीजिए। साथ ही, भारत के संदर्भ में इसके महत्व पर चर्चा कीजिए। (150 शब्दों में उत्तर दें)

Explain what you understand by urban agriculture and state its types. Also, discuss its significance in the context of India. (Answer in 150 words) 10

Urban agriculture is production of grains and raising of animals in urban areas (city, metro)

Types of urban agriculture :-

- (i) Nurseries - where several plant varieties are nurtured in protected environment.
- (ii) Vertical gardens - alongside major roads, highways etc.
- (iii) Rooftop gardening - with the potential to create albedo effect.
- (iv) Green belts & urban forestry - alongside colonies, societies to leverage maximum benefits
- (v) Urban beekeeping - to leverage benefits of additional income.

(vi) Kitchen garden & backyard gardening
to supply essential fruits &
- veggies.

(vii) Aquaponics - using state of art
technology - water grows plants

* SIGNIFICANCE FOR INDIA :-

(i) Decentralized production =
to supplement dietary, aesthetic
value of consumers

(ii) Sustainability - Environmentally
conscious practices

(iii) Gandhian philosophy for caring
& loving nature - Growing with
Nature

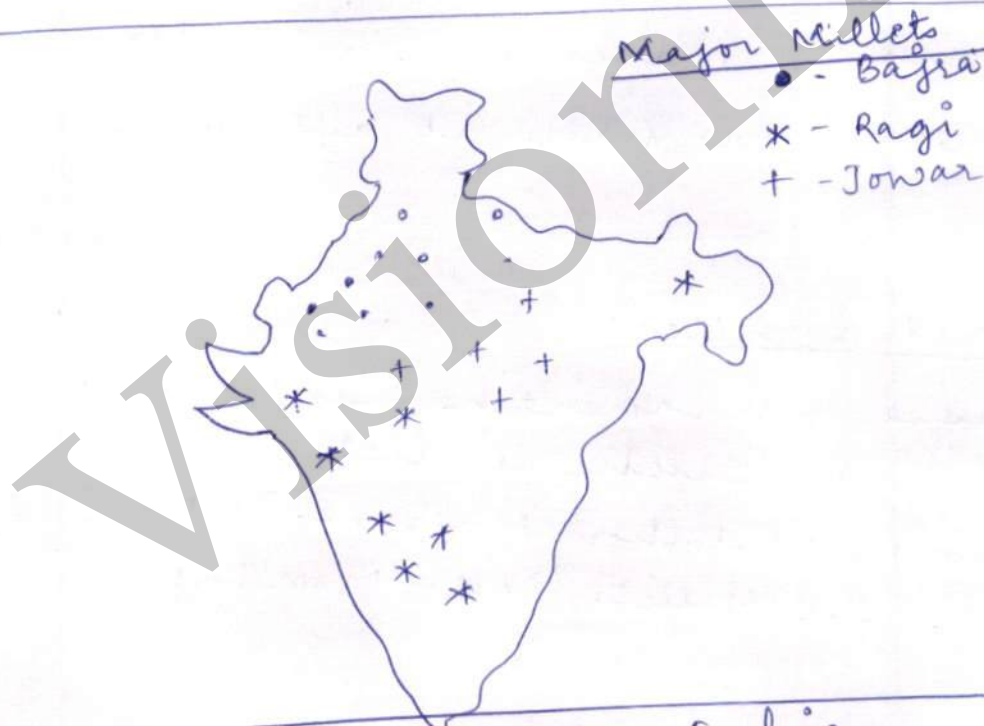
(iv) Employment generation - to
boost additional jobs & livelihood
opportunities.

Municipalities across India
are embracing the above measures
to ensure effective land use pattern
& is in line with SMART City
Mission

5. जलवायु परिवर्तन में वृद्धि से मोटे अनाज की खेती का पुनरुद्धार हो रहा है। चर्चा कीजिए। साथ ही, भारत में मोटे अनाज के उत्पादन को गति देने के लिए सरकार द्वारा उठाए गए कदमों का उल्लेख कीजिए। (150 शब्दों में उत्तर दें)

The advent of climate change is leading to the revival of cultivation of millets. Discuss. Also, mention the steps taken by the government to give an impetus to millet production in India. (Answer in 150 words) 10

Millets / Shree Anna/ Coarse grains
are known for climate resilience.
can survive extreme heat, and
grows in less rainfall.



Millet map of India.

climate resilient crops

- Extreme temperature = 45°C
- Drought resistance
- Low carbon footprint
- Arid, semi arid soil.

Steps to provide impetus to Millets

- ① Designation as 'Shree Anna' for its nutritional benefits - source of proteins, vitamins etc.
- ② Intensive millet promotion - promote via village panchayats, technology interventions, MSP etc.
- ③ MSP & PDS.
Gont declares MSP for coarse grains & makes them available for common man at affordable prices
- ④ Mid-day Meal.
Odisha government has introduced millets in children's diet
- ⑤ National Nutrition Mission & National year for Millets - 2018 - promoting them at all levels.

Further, India proposed 2023 as International Year of Millets by UN and promotion of ready to eat category - G20.

6. विश्व आर्थिक मंच (WEF) ने अपनी नवीनतम रिपोर्ट में कहा है कि ड्रोन में भारतीय कृषि के "प्रौद्योगिकी-आधारित परिवर्तन" का अग्रदूत बनने की क्षमता है। चर्चा कीजिए। (150 शब्दों में उत्तर दें)

The World Economic Forum (WEF) in its latest report stated that drones have the potential to be the harbinger of "technology-led transformation" of Indian agriculture. Discuss. (Answer in 150 words) 10

WEF has pointed that the use of new age technology like drones can add value of \$100b per year to Indian GDP.

* Advantages of using drones

(i) streamlining schemes → using drone photogrammetry, drones can help farmers create accurate maps for schemes like PMFBY

(ii) Effective delivery

Drones can transform daily agricultural activity - pest monitoring, delivery of fertilisers, ~~seeds~~

(iii) Land survey & land mapping involving effective Digital Land Records Mapping

(iv) precision agriculture - to improve overall crop yield by data driven variable rate prescription.

(v) livestock monitoring - using thermal sensors to find lost animals etc.

Concerns associated with use of drones:

(i) High Initial Investment :- Majority of Agricultural drones used for surveying requires huge upfront grant.

(ii) Weather dependent drones - due to difficulty in windy/rainy conditions

(iii) unskilled end user :- Drones require specialised skills & knowledge to translate into useful information.

India's agricultural sector will witness significant boost through AI enabled drone technology. Collaboration with like minded countries like Israel should be the way forward.

7. क्षेत्रीय कनेक्टिविटी योजना (RCS) को कुछ समय पूर्व पांच वर्ष पूर्ण हुए हैं। इस संदर्भ में, अपने घोषित उद्देश्यों को प्राप्त करने में योजना की सफलता का मूल्यांकन कीजिए। (150 शब्दों में उत्तर दें)
- The regional connectivity scheme (RCS) completed five years some time back. In this context, evaluate the success of the scheme in achieving its stated objectives. (Answer in 150 words) 10

Regional Connectivity scheme /
Ude Desh Ka Aam Nagrik (UDAN).
with the objective to connect
small & medium cities with big
cities through air service

Success of the scheme :-

1. Connectivity = 50+ regional airports and connecting 400 routes.
2. Lowering operating cost = MoCA, scheme has been successful in lowering 12-13% average cost
3. Increased air traffic
Connecting Tier II and Tier III cities, domestic air traffic has increased significantly.
4. Ensured affordability - govt provides subsidy to enable affordable services.

5. Boost to Tourism - Varanasi, Udaipur, Goa, Sarnath boosting religious & recreational tourism.

CRITICS OF SCHEME :-

1. Number of operational routes limited infrastructure, low demand, lack of manpower & capital

2. Lack of funds
Only half of the total allotted funds have been released.

3. Inadequate subsidy

Airline operators point out that regional connectivity projects hinder sustainability in long run.

Despite limitations, UDAN scheme has been a gamechanger & has transformed the travel patterns of middle class in India.

8. फर्टिगेशन मौलिक रूप से जल जैसे कीमती संसाधनों के उपयोग और पर्यावरण के पोषक तत्वों की क्षति को कम करते हुए बदलती जलवायु में स्थायी रूप से अधिक खाद्यान्नों के उत्पादन में मदद कर सकता है। चर्चा कीजिए। (150 शब्दों में उत्तर दें)

Fertigation can help sustainably grow more food in a changing climate while radically reducing the use of precious resources such as water and minimising nutrient losses to the environment. Discuss. (Answer in 150 words) 10

Fertigation (Fertilisers + Irrigation) involves targeting application of water - along with minerals like Potassium, Calcium etc.

Risk by climate change to Agriculture

1. Decrease yield
2. changed rainfall pattern
3. Increase pests
4. Drought/aridity
5. Water shortage

Sustainable agriculture

- more crop per drop
- effective utilisation of resources like water, fertilisers
- more yield
- pest resistant crops
- climate change resistivity

★ Fertigation as effective tool :-

- (i) Precision agriculture
with targeted delivery of water, nutrients, moisture and ensure minimum wastage.
 - (ii) Water conservation
by reducing water wastage and effective delivery.
 - (iii) drip irrigation - for effective & efficient fertiliser deposits.
 - (iv) Enhanced productivity -
where previously untouched regions produce more crops.
- Challenges

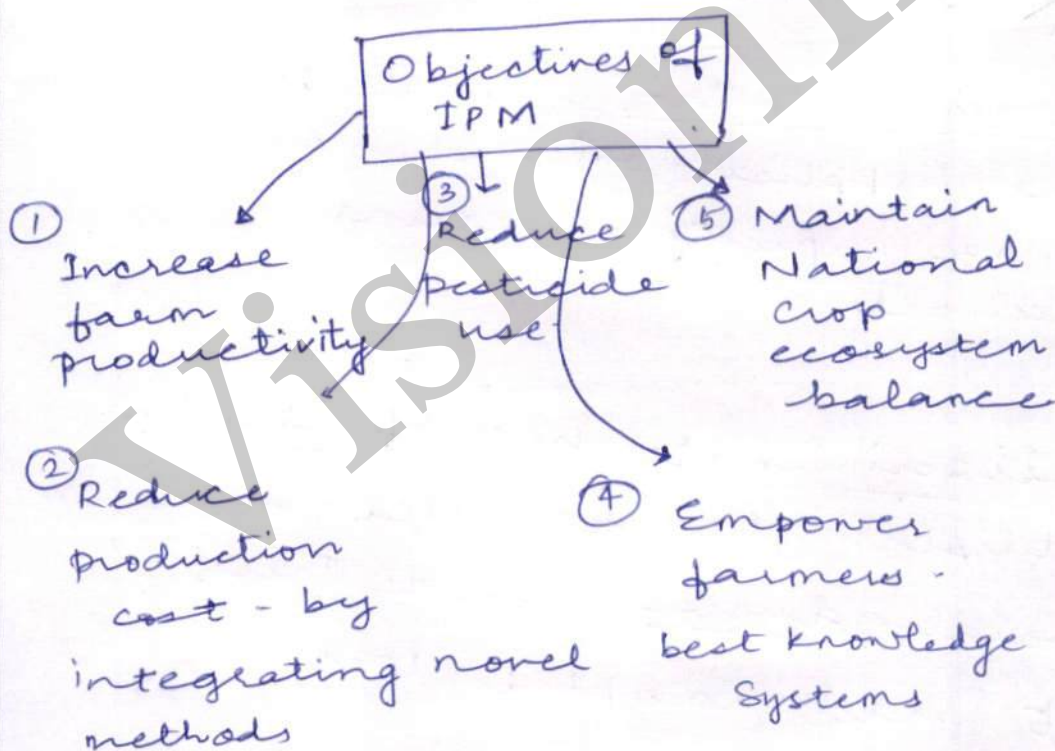
1. Fund crunch - costly machinery
2. Upfront cost & maintenance.
3. Training end users - farmers in newer technology.
4. clogging of pipes.

By addressing above challenges, effective newer technologies can be adopted.

9. एकीकृत कीट प्रबंधन (IPM) क्या है? IPM के उद्देश्यों पर प्रकाश डालते हुए, इसके विभिन्न घटकों पर चर्चा कीजिए। (150 शब्दों में उत्तर दें)

What is Integrated Pest Management (IPM)? Highlighting its objectives, discuss the various components of IPM. (Answer in 150 words) 10

Integrated pest Management (IPM) involves holistic usage of all measures - biological, chemical, physical and crop specific management to minimize pesticide use and grow healthy crops.



* Components of IPM :-

- ① Monitoring = Keeping tracks of pests & potential damage and

provide information on current pests & crop situation

② Cultural pest control = practices that make crop environments less susceptible to pest

③ Mechanical control - involves hand picking, installing bird perches, mulching, setting up traps

④ Biological control - contributing by insect predators, pathogens

⑤ Chemical control - pesticides are applied only when pest damage capacity is nearing threshold.

Indiscriminate use of chemical fertilizers has resulted in several adverse effects, Thus,

govt has adopted IPM as a measure to conserve bio diversity.

10. पशुधन रोगों से उत्पन्न चुनौतियों के आलोक में सरकार द्वारा उनके समाधान के लिए उठाए गए कदमों पर चर्चा कीजिए। (150 शब्दों में उत्तर दें)

In light of the challenges posed by livestock diseases, discuss the steps taken by the government to address them. (Answer in 150 words) 10

Recently, the country has witnessed rising cases of animal bacterial and viral diseases - causing death, damage, loss of productivity.

(eg) Lumpy skin disease.

Challenges posed by livestock disease

(i) Decreased Yield

Disease reduce the output of milk, meat and products like eggs.

(ii) Hinders economic growth

Livestock contributes to 30%+ in agricultural GDP. Damages, if any reduces output

(iii) Zoonotic disease

With the surge in viral diseases, the spread has reached to humans.

eg COVID19 & Bats

(iv) Loss of livelihood

Given farmers depend on livestock for income, the loss of livelihood

Steps taken by govt to address :(i) Immunization Programme

The govt has launched for safe, secure, productive cattle.

(ii) National Livestock Mission

driven by the holistic development of cattle

(iii) One Health Approach

Taking all stakeholders - humans, animals, environment together

(iv) Animal Husbandry Infrastructure development programme - providing facilities to develop advanced stables, fodder house etc.

India transformed the dairy sector in 1980's. Today, it is the largest milk producing country in world. Similar interventions, need to be extended to other aspects, to boost the livestock sector in India

11. कोयला निष्कर्षण संबंधी बुनियादी ढांचे को उन्नत बनाने और कोयले की समग्र प्रतिस्पर्धात्मकता में सुधार हेतु माल ढुलाई लागत को कम करने के लिए हस्तक्षेप की आवश्यकता है। भारत के संदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दें)

There is a need for interventions to enhance the coal evacuation infrastructure and reduce the freight cost to improve the overall competitiveness of coal. Discuss in the context of India. (Answer in 250 words) 15

Coal Evacuation Infrastructure (CEI) involves the tools, techniques, methods, innovation employed in coal extraction, refining, processing and transportation for final consumption.

In India, coal loses its competitive edge due to higher freight cost (loading/unloading) due to several lacunas. like:

(i) Infrastructure deficit:
→ in terms of large trucks, dedicated rail lines

(ii) Inefficiency boosts cost
→ significant cost overruns lead by lack of trained manpower, outdated technology

(iii) Backward regions

Coal mines, refineries are located in tribal belts, where there is limited connectivity, power supply crunch etc.

(iv) Delayed loading/unloading of coal.Improving CEI in India:-(i) PM Gati Shakti

It aims to transform the logistic sector to monitor movement of freight trains.

(ii) National Coal Logistics Policy - to ensure adequate coal infrastructure & optimise overall growth(iii) Freight operation information system - to monitor movement of freight trains & calculate freight charges.

Measures to Improve Logistics Infrastructure

- (i) Holistic evaluation of each region
Newer projects need to be analysed for efficient / environmental transport of coal.
- (ii) Optimisation of total logistics cost of coal in terms of time and price.
- (iii) Inter connected multimodal network of transport infrastructure to promote efficient movement of coal
- (iv) Dedicated freight corridor for air transport, and road, railways.

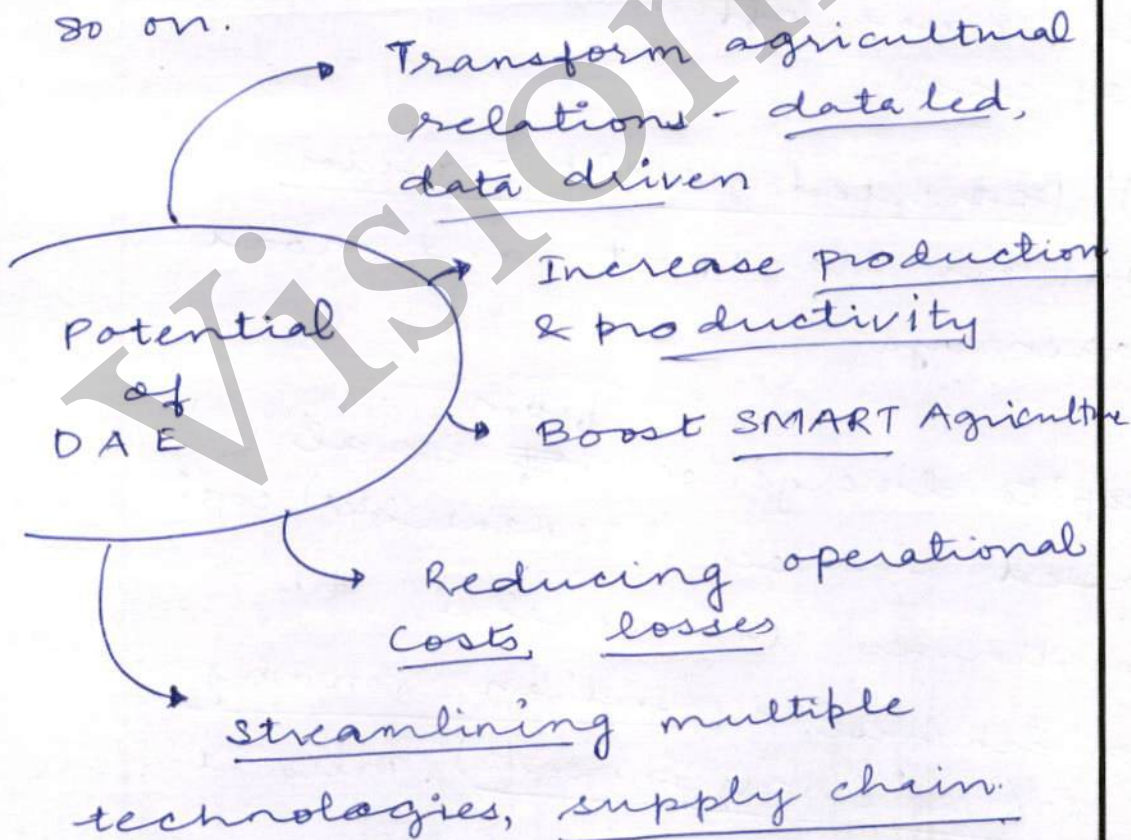
Despite divergence ~~of~~ ^{from} coal based sources (renewables), coal continues to remain the powerhouse of Indian economy (60% of energy needs). Thus, it needs to be channelized efficiently.

12. डिजिटल कृषि अर्थव्यवस्था की क्षमता को साकार करने में आने वाली चुनौतियों को रेखांकित कीजिए। इस संबंध में सार्वजनिक-निजी भागीदारी (PPP) की भूमिका पर चर्चा कीजिए। (250 शब्दों में उत्तर दें)

Highlight the challenges faced in realizing the potential of digital agricultural economy. Discuss the role of public-private partnership (PPP) in this regard. (Answer in 250 words) 15

Digital Agricultural economy (DAE) involves the use of new age technology - mobile technology, remote sensing services, distributed computing, online access to information and

so on.



challenges in Realising potential DAE(i) Resource crunch

Given 85% farmers are small & marginal - Thus, don't have access to resource.

(ii) Limited Availability

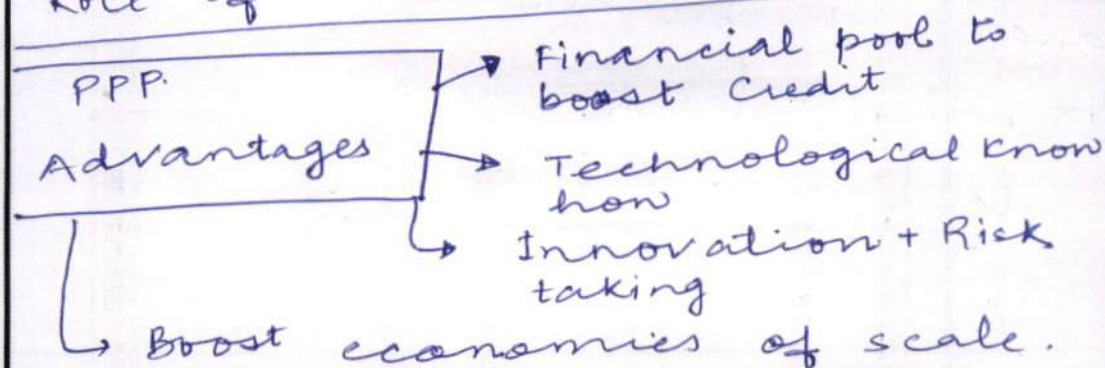
these technologies are costly, require adequate skilling & training

(iii) Absence of land records

Given fragmentation of land (avg holding < 1ha) per farmer makes technology unviable.

(iv) Traditional tool dependence

About 60% of Indian Agriculture is still monsoon dependent. Thus, exposes infrastructure vulnerability.

(v) Lack of Financial Resources
i.e. cheap credit.Role of PPP in DAE :-

(i) Startup Ecosystem

Boost to newer ideas, innovations, skills to add value to products.

(Eg) Kissan connecting farmers produce to end produce

(ii) FPO Environment

Pooling in the resources of public & private sector, the FPO boost productivity

(iii) PPP led Warehousing

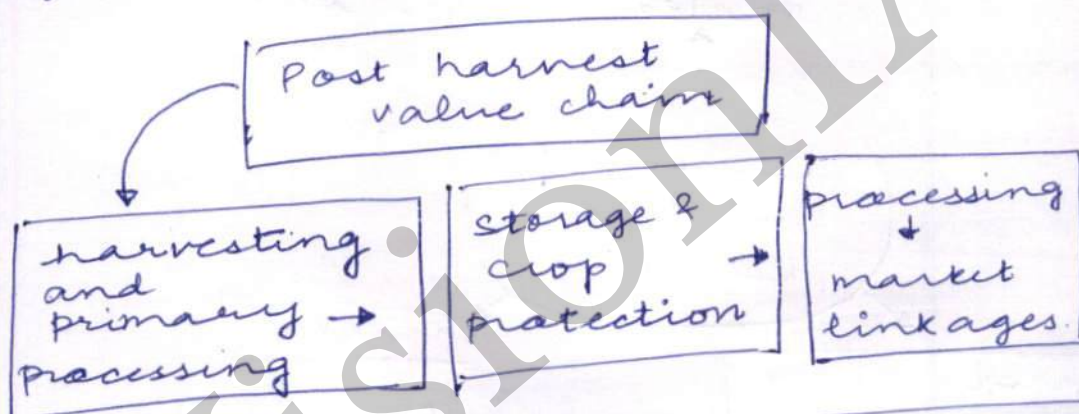
Given FCI godowns have reached their potential, PPP led godowns can help in storage and processing in later phases.

DAE and PPP (Public - Pvt part-nership) can leverage the unutilised potential of Indian agriculture to cross \$100 billion mark and double farmers income.

13. फसल कटाई के बाद की मूल्य श्रृंखला में अक्षमता के कारण लघु और सीमांत किसानों की आजीविका पर अत्यधिक प्रतिकूल प्रभाव पड़ने के साथ-साथ फसल की हानि हो रही है। भारत के संदर्भ में चर्चा कीजिए। इन चिंताओं को दूर करने के लिए सरकार ने क्या कदम उठाए हैं? (250 शब्दों में उत्तर दें)

The inefficiencies in post-harvest value chain are leading to crop losses, with significant adverse impact on the livelihood of small and marginal farmers. Discuss in the context of India. What steps has the government taken to address these concerns? (Answer in 250 words) 15

As per NITI Aayog, post harvest losses amount for 10-20% for semi perishables & commodities like milk, fish, meat, eggs, fruits & vegetables.



Challenges in Post Harvest value chain:-

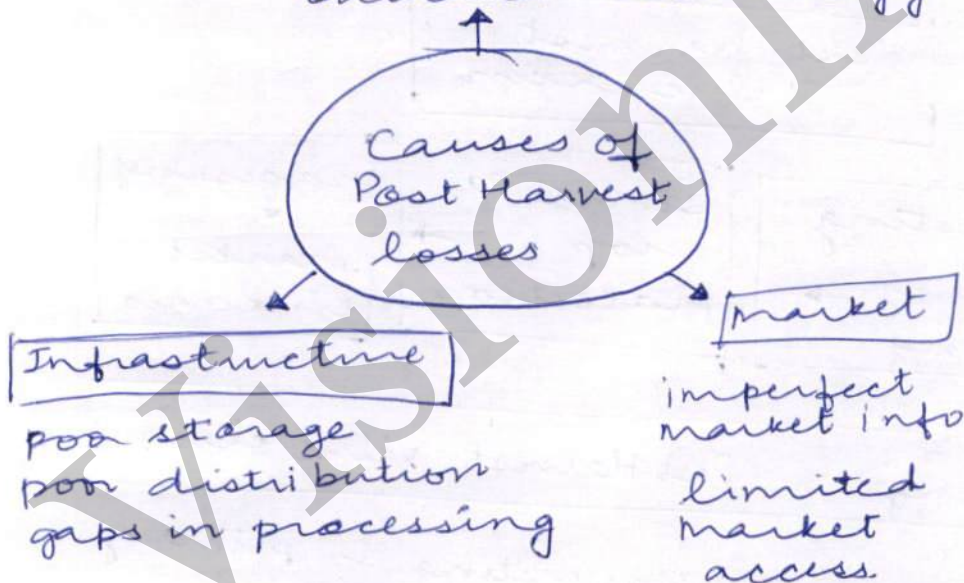
- (i) Inadequate harvesting & primary processing :-
- ↳ lack of awareness
 - ↳ lack of finance & weak credit linkages
 - ↳ restricted value addition by small & marginal farmers (85%)

(ii) lack of storage and crop production :-

↳ absence of on farm and near farm storage facilities & packaging material

(iii) Lack of near farm processing facilities - Thus $\frac{1}{2}$ of produce is lost during transportation.

Farmers - small holdings
absence of credit
outdated technology



Impact on farmers

1. Decreased Yield
2. Income Loss
3. Distress sale
4. Low bargaining power
5. Decreased productivity

6. Lack of value addition

Steps taken by government :-

1. PM Kisan SAMPADA Yojna -
giving timely access to credit to
develop modern infrastructure
with efficient supply chain management

2. PLI scheme

to support food manufacturers to
expand processing capacity

3. VGF scheme

Capital investment in creation of
modern storage capacity under
Mo Finance.

4. Private enterprises engagement
in the sector.

To boost productivity, private
sector, civil society organisation

intervention is needed towards
post harvest loss reduction &

improvement in
marginal
small & farmers. livelihood of

14. दुनिया के सबसे बड़े रेलवे नेटवर्कों में से एक होने के बावजूद, भारतीय ट्रेनों की गति विकसित देशों की तुलना में कम है। इसके लिए उत्तरदायी कारणों को स्पष्ट कीजिए तथा इस संबंध में सरकार द्वारा उठाए जा रहे कदमों का उल्लेख कीजिए। (250 शब्दों में उत्तर दें)

Despite having one of the largest railway networks in the world, the speed of Indian trains lags behind in comparison to developed nations. Explain the reasons behind this and mention the steps being taken by the government in this regard.
(Answer in 250 words) 15

Indian Railways have the 2nd largest railway network in the world. However, it lacks in terms of speed & efficiency

As per CAG, operating ratio of Indian rail is 98.36%, while average speed of express trains is around 50 kmph. But many developed countries, passenger trains run at speed of 200 kmph.

Reasons for poor speed of trains:-

(i) Inadequate Infrastructure → Rail tracks are old, which can bear maximum speed of 110-130 kmph

(ii) Congestion of Rail tracks - freight trains share same track causing heavy congestion.

(iii) Long hauls - longer & frequent stoppages causes congestion

(iv) Design of train - open doors and windows creates hindrance in speeding up

(v) Ratio of passenger trains :-
Number of passenger trains has increased manifold without increase in infrastructure.

(vi) Delay in project infrastructure completion leading to time & cost overruns

Steps taken by Government:-

(i) Dedicated freight corridor:- enabling high speed (100 km/hr) for special cargo trains.

(ii) Vande Bharat trains
Introduction of semi-high speed trains 2024-25 capable of reaching 160-200 kmph.

(iii) Bullet trains - along Mumbai-Ahmedabad to boost economy

(iv) Foreign collaboration - with like minded partners like France, Israel, Japan etc

(v) Upgraded coaches :-

driven by enhanced manufacturing of Linke Hofmann Busch Coaches

Whole railway ecosystem needs a relook in rolling stock, reducing gap between freight & passenger train speed to ensure aim of high speed trains.

15. भारत में समावेशी विकास और निर्धनता उन्मूलन के लिए भूमि तक पहुंच और उस पर प्रभावी नियंत्रण महत्वपूर्ण हैं। सविस्तार वर्णन कीजिए। साथ ही, समावेशी विकास सुनिश्चित करने के लिए हाल के दिनों में भारत में अपनाए गए भूमि सुधार उपायों पर भी चर्चा कीजिए। (250 शब्दों में उत्तर दें)

Access to land and effective control over it are crucial for inclusive growth and poverty eradication in India. Elaborate. Also, discuss the land reform measures adopted in India in recent times to ensure inclusive growth. (Answer in 250 words) 15

As per SECC 2011, households with no land are about 56.41% of total households.

The draft National Land Reforms Policy released in July 2013 stated that 31% of households are landless.

Access to land for inclusive growth & poverty eradication

(i) Reduction in Poverty

Around 50% is engaged in agriculture without access to property rights. Ensuring ownership and better credit accessibility can lead to greater growth.

(ii) Inclusive growth = to eradicate socio-economic exclusion by giving owners assets in form of land, create avenues of income generation for them.

Steps taken for land reforms:-

- (i) Abolition of Intermediaries
- (ii) Tenancy reforms & ceilings on landholding adopted
- (iii) Consolidation of landholdings
- (iv) Digital India Land Record Modernisation programme:-
introduced in 2016 to computerise and update all land records & digitize maps/surveys.
- (v) Unique Land Parcel Identification number:- launched in 2021, 14 digit identification number is to be provided to surveyed parcel of land.

(vi) SVAMITVA scheme.

property survey programme launched to map residential land ownership in rural sector using modern technology.

(vii) Right to fair compensation Act, 2013

Act contains provisions for bringing transparency to the process of acquisition of land.

(viii) Model Agricultural land leasing act, 2016 - to ensure leasing & loan.

(ix) Draft Model contract farming act (2018) - protect interest of farmers through forward contract.

Recently, NITI Aayog framed the Draft Model Act and Rules on conclusive land Titling 2019.

Further, state governments initiatives such as Bhoomi project of Karnataka is a successful example.

16. ऊर्जा क्षेत्र के संदर्भ में डीकार्बोनाइजेशन, विकेंद्रीकरण और डिजिटलीकरण की प्रवृत्तियां तेजी से उभर रही हैं। चर्चा कीजिए। (250 शब्दों में उत्तर दें)

When it comes to the energy sector, the trends of decarbonisation, decentralisation and digitisation are fast emerging. Discuss. (Answer in 250 words) 15

Given IPCC target of preventing global temperature rise (beyond) 1.5°C by 2100, energy sector has witnessed several trends:-

① Decarbonisation

- transition towards clean, carbon free world
- switch to renewable energy
- Commitment to Paris Agreement.
- Global initiatives like International Solar Alliance (ISA).
- Boost to new age technology like :-
 - Green Hydrogen
 - e-vehicles
 - Li-ion batteries
 - solar powered batteries

II Decentralisation

- A growing trend towards distributed energy production system.
- Involves a combination of localised microgrids; consumers to generate their own electricity needs.
- Localised renewable energy.
 - (eg) Mundra village, Gujarat fully solar powered
 - (eg) Solar rooftop
- Advantages
 - Self Reliant
 - Reduce dependence
 - Increase productivity

III Digitisation

- The trend involves use of digital machines, devices, technology to optimise energy production.
- using Advanced Metering system - and deploying pre paid smart meters at scale.

→ smart meter National programme
through revamped distribution
sector scheme to replace
conventional metres

→ digital tools employed like

(i) AI & predictive analysis

(ii) IoT including smart
home thermostats

(iii) Blockchain technology
to create smart contracts

(iv) Digital Twins - to create
virtual replica of power plant,
allowing models to present
different scenarios.

Global energy demand is expected
to increase in coming years,
Thus, it is essential to meet
the same via low carbon,
renewable sources of technology

17. यद्यपि कृषि सब्सिडी ने किसानों की आय में वृद्धि की है, तथापि इन्होंने पर्यावरणीय निम्नीकरण और जैव विविधता के ह्रास में भी योगदान दिया है। भारत के संदर्भ में चर्चा कीजिए। (250 शब्दों में उत्तर दें)

While agricultural subsidies have supported farmers' income, they have also contributed to environmental degradation and biodiversity loss. Discuss in the context of India. (Answer in 250 words) 15

Agricultural subsidies are govt incentives to farmers at various stages of production (sowing, cropping, harvesting) to boost :-

- (i) Agricultural Yield
- (ii) Farmers Income
- (iii) Promote general welfare of people

Benefits of Agri-subsidies to farmers.

① Reduced input cost
↳ easy, timely and cheaper availability of seeds, fertilisers, machinery etc. (HYV seeds, UREA subsidy)

② Higher productivity
↳ precision agriculture, smart agriculture, higher growth.

③ Mitigation against calamities
PM Fasal Beema Yojna and other
crop insurance schemes.

④ Reduced post harvest losses
↳ subsidised storage facilities
eg Gramin Bhandaran Yojana

⑤ Diversification of high income
potential sectors (eg) PM
Matsya Sampada Yojana -
adoption of fisheries sector.

Subsidies having deteriorating impact

(i) Monocropping

adoption of HYV seeds & MSP -
has led to growth of wheat &
rice at cost of other cereals

(ii) Soil degradation

Indiscriminate use of rice has
led to soil salinity.

(iii) Groundwater issues

power & irrigation subsidies have

led to decrease in groundwater level & fertility

(iv) Threat to pollinators - like honeybees, butterflies due to use of toxic chemicals

(v) Decreased yield
Excessive use of fertilisers has now started to degrade overall production.

(vi) Land degradation, salinity and rising infertility in & around Punjab, Haryana

(vii) Eutrophication
chemical discharge ends up reaching ponds, lakes, rivers causing damage.

Agricultural subsidies need to strike a balance between increasing farmers income & food security and on the other hand on environmental conservation.

18. भारत में अनाज और दालों की खरीद एवं विपणन से जुड़ी वर्तमान समस्याओं को दुग्ध क्षेत्रक के सफल मॉडल के माध्यम से हल किया जा सकता है। चर्चा कीजिए। (250 शब्दों में उत्तर दें)

The persistent problems around the procurement and marketing of cereals and pulses in India can be solved by the success model of the milk sector. Discuss. (Answer in 250 words) 15

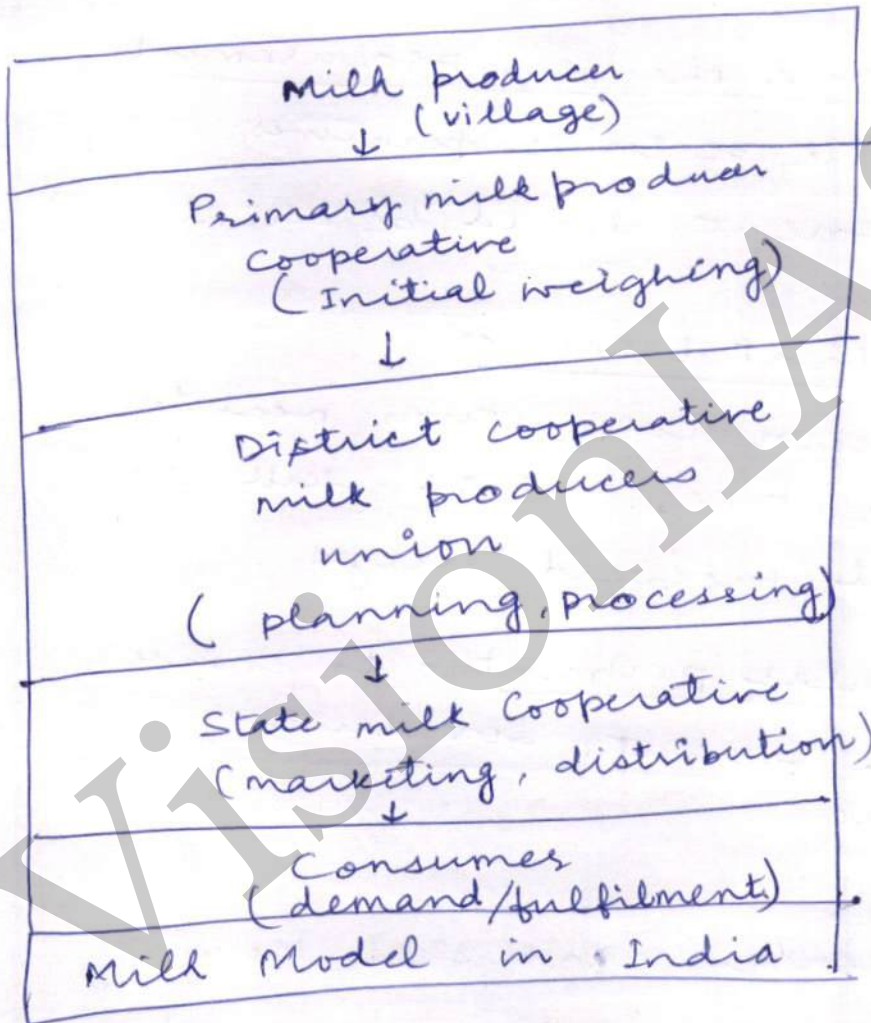
In India, cereals and pulses are primarily produced by agricultural marketing societies like FCI & NAFED, whereas milk is done through cooperative societies like AMUL.

Issues in procurement & marketing of cereals:

- (i) Quality grading
absence of grading/sorting machine
- (ii) Malpractices in awarding MSP
in terms of Fair Average Quality to get MSP for which it is otherwise ineligible
- (iii) Absence of Regular procurement
cereals & pulses procurement happen only once in Rabi & Kharif season
- (iv) Absence of linkages - forward & backward linkages

(v) Delay in payments by FCI etc
due to fund crunch.

Success story of milk sector in India:



* Model of Milk sector :-

(i) Transparency :- Quality checking through machinery helps farmers to be immune from fraud.

(ii) Ease of doing business - minimal or no restrictions on quantity to sell. It helps small & marginal farmers to sell products.

(iii) Round the year procurement like milk sector cooperatives, everyday procurement should be extended.

(iv) Dedicated service Milk sector cooperatives need to devote time, energy, skill for forward / backward linkages.

(v) Regular payments - to ensure income security for dairy farmers.

The newly established Ministry of Cooperatives in coordination with Ministry of Agriculture can adopt best practices to strengthen procurement.

19. भारत में भूमि अभिलेखों से संबंधित मौजूदा मुद्दों पर प्रकाश डालते हुए, चर्चा कीजिए कि भूमि अभिलेखों का डिजिटलीकरण और 'लैंड टाइटलिंग' (भू-स्वामित्व का निर्धारण) इनके समाधान में कैसे मदद कर सकता है। (250 शब्दों में उत्तर दें)

Highlighting the existing issues related to land records in India, discuss how digitisation of land records and conclusive 'land titling' can help in addressing them. (Answer in 250 words) 15

Land records consist of various types of information (property, maps, sale deeds) across various departments at village/district levels.

Issues related to land records:-

(i) working in silos:-

Absence of cooperation & coordination between the departments.

(ii) Absence of Nation wide template
land records are fragmented across various units. It is cumbersome process to ensure all records

(iii) lack of single window verification

Land records are verified by various records.

(iv) Presumptive titling,

ownership is decided on the basis of recent economic transactions.

(V) Opaqueness in land leasing
Current system doesn't allow tenants to access credit and prevents them from investing in land improvements.

Role of land record digitisation & conclusive land titling:

(i) Increasing transparency:

land record digitisation and land titling will enable complete transparency & real time updates in land titles.

(ii) check benami transactions

By reducing benami transactions and ensuring regular updating.

(iii) One stop solution

It will create a single window title verification and investigation system.

(iv) Bringing uniformity

Centre & state may collaborate to maintain land records in transparent manner.

(v) clear ownership

under the land titling system, land records ascertain actual ownership

(vi) easy bank credit

clear documentation enables easy availability of credit

The mammoth task of mapping and digitising 800 million parcels need further ~~and~~ centre-state coordination for effective & speedy delivery.

20. सड़क क्षेत्रक में बुनियादी ढांचे के वित्त-पोषण को सुव्यवस्थित करने के लिए कई उपायों को अपनाए जाने के बावजूद, निजी निवेश ने सीमित भूमिका निभाई है। चर्चा कीजिए। (250 शब्दों में उत्तर दें)
Despite adoption of numerous measures to streamline financing of infrastructure in the road sector, private investment has played a limited role. Discuss. (Answer in 250 words) 15

Indian Road network is expanding rapidly, with 30 km of road construction everyday.

Reasons for success in Road Infra
structure

- (i) Model concession agreement in road sector has standardised provisions to be met by public & private sector
- (ii) VGF - Viability Gap funding for economically viable projects that don't reach financial viability
- (iii) Brownfield asset Monetization with ToT model resulting in high returns

(iv) InIVTS

to boost in private investment
in road structures

(v) New Initiatives like

- ↳ National Monetization pipeline
- ↳ National Asset Monetization plan.

STATISTICS.

NO. of PPP projects in India → 501

private investment limited

Total Road Investment (CAGR) - 22%

Reasons for limited private investment:

(i) Rising NPA

financial constraints shown
by banks given the share of
NPA has increased significantly
to 20%.

(ii) Time consuming land acquisition and clearance process -
involving encroachment removal, religious structure relocation, utility shifting

(iii) Lengthy land acquisition & clearance process - damages goodwill in front of foreign investors

(iv) stretched balance sheet of Indian developers

- ↳ due to overaggressive bidding
- ↳ pending claims of NHAI
- ↳ breach of commitment

Private Investment into building a robust infrastructure is a key to making India a \$trillion economy by 2025. Thus, efforts are needed for promoting sector specific financing