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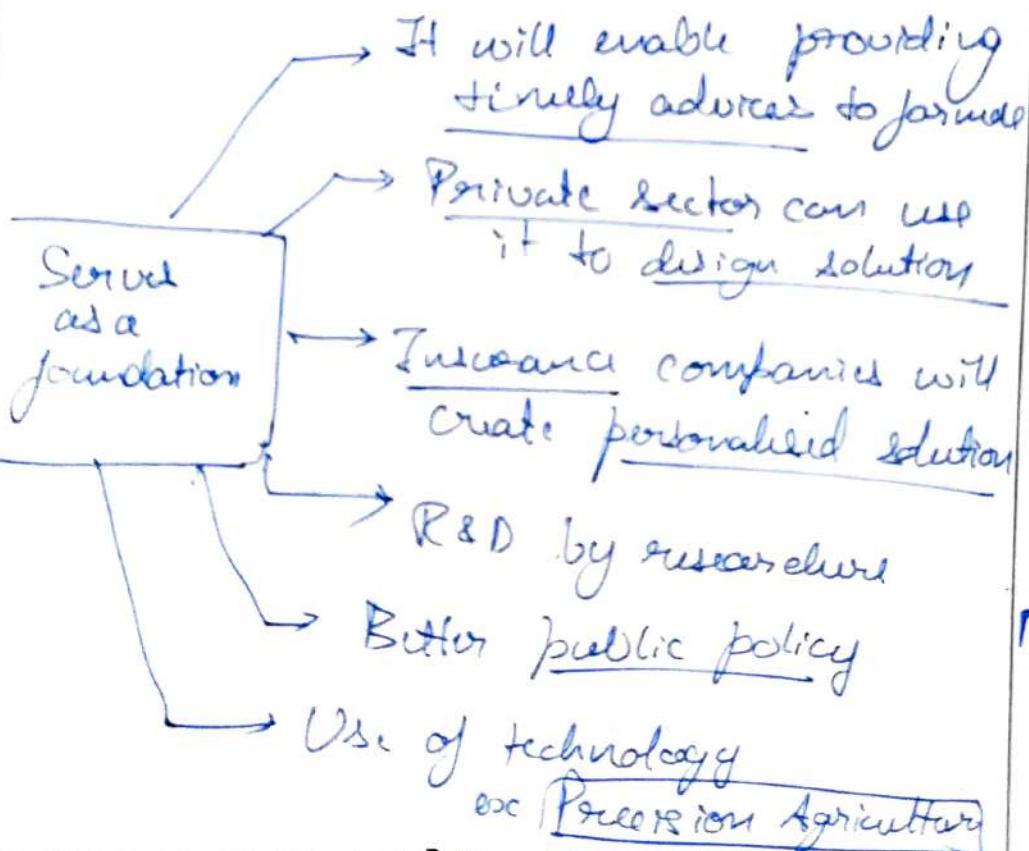
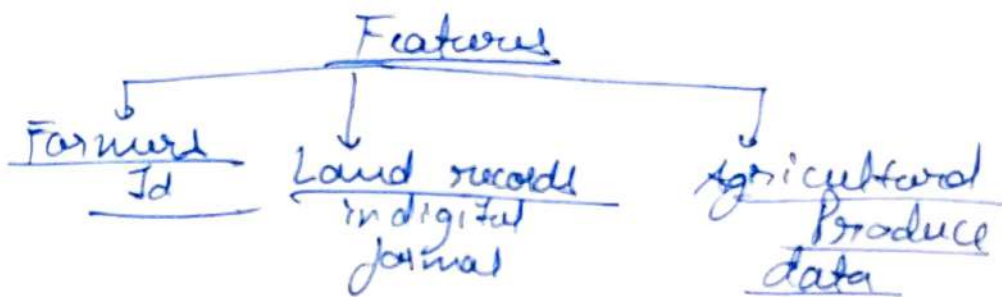
कृपया इस स्थान में प्रश्न संख्या के अनिवार्य कुछ न लिखें।

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उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए
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Q.1
AgriStack platform is a all in one digital solution for agriculture. It aims to connect farmer data with land data and agricultural produce data to give a comprehensive solution.



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But there are some concerns with it:-

1) Risk of loss of data and Privacy issues

↳ eg when Air India got data leak

2) Private players may misuse data

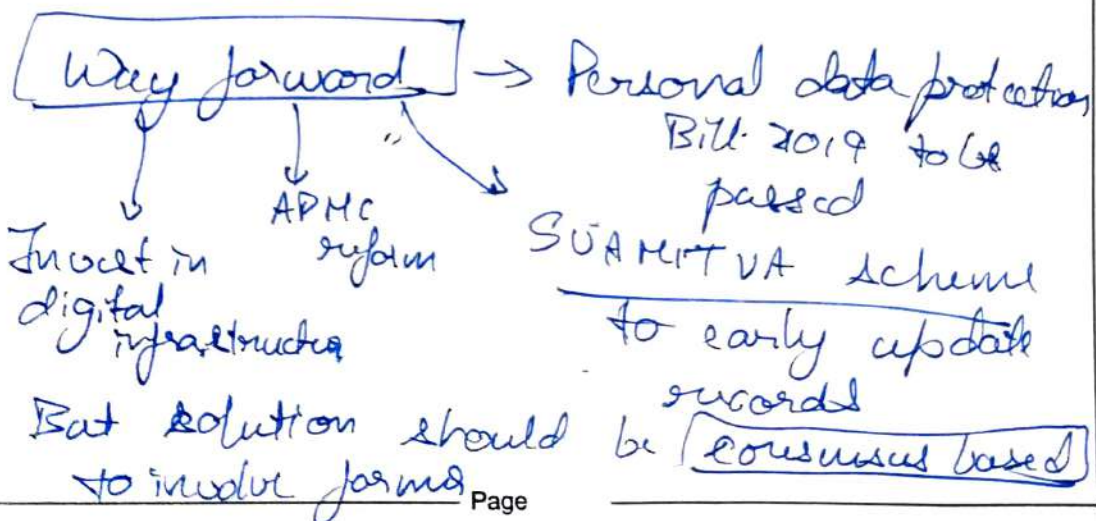
↳ will approach farmers when most vulnerable.

3) Digital divide - farmers lack literacy to use it

4) Lack of digital infrastructure to deliver upon.

5) Non updated land record.

6) Poor marketing - APMC restricted model



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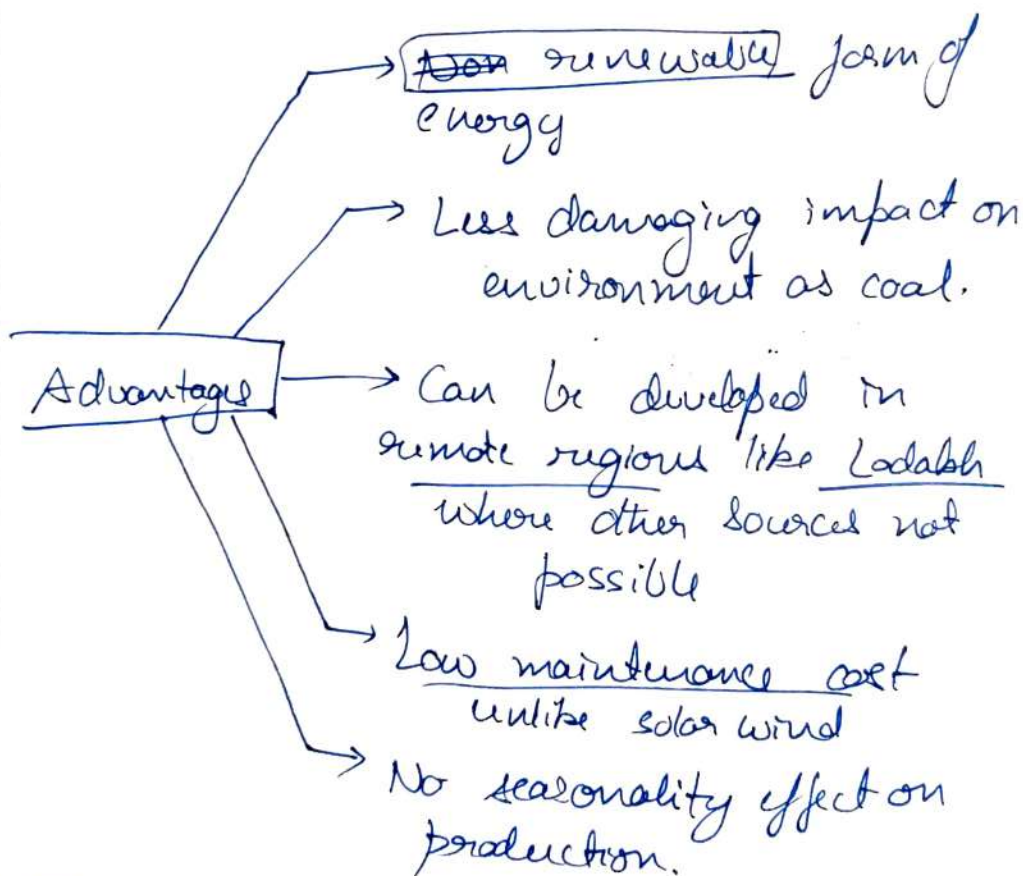
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Q2

Geothermal energy is the ~~the~~ utilisation of earth's (geo) stored heat energy by converting it into electricity or directly for heating

ex - Yellowstone US, Iceland.

- Tatapani (Jharkhand) India.



Despite advantages, it has not been adopted on a wide

Scale because

1) Need of huge expenditure on initial investment

2) Large size of plant.

↳ not possible to install in homes like solar.

3) Direct heat use is limited in tropical country

↳ unlike Iceland like region

4) Risk of release of harmful gases

5) Energy sector is dominated by PSU which lag in innovation

Way forward

Hybrid sale
with wind & solar

↳ remove seasonality problem

Need to increase investment

PPP projects for viability

R & D on harmful gases prevention

Thus it can be a game changer for works 3rd largest energy consumer

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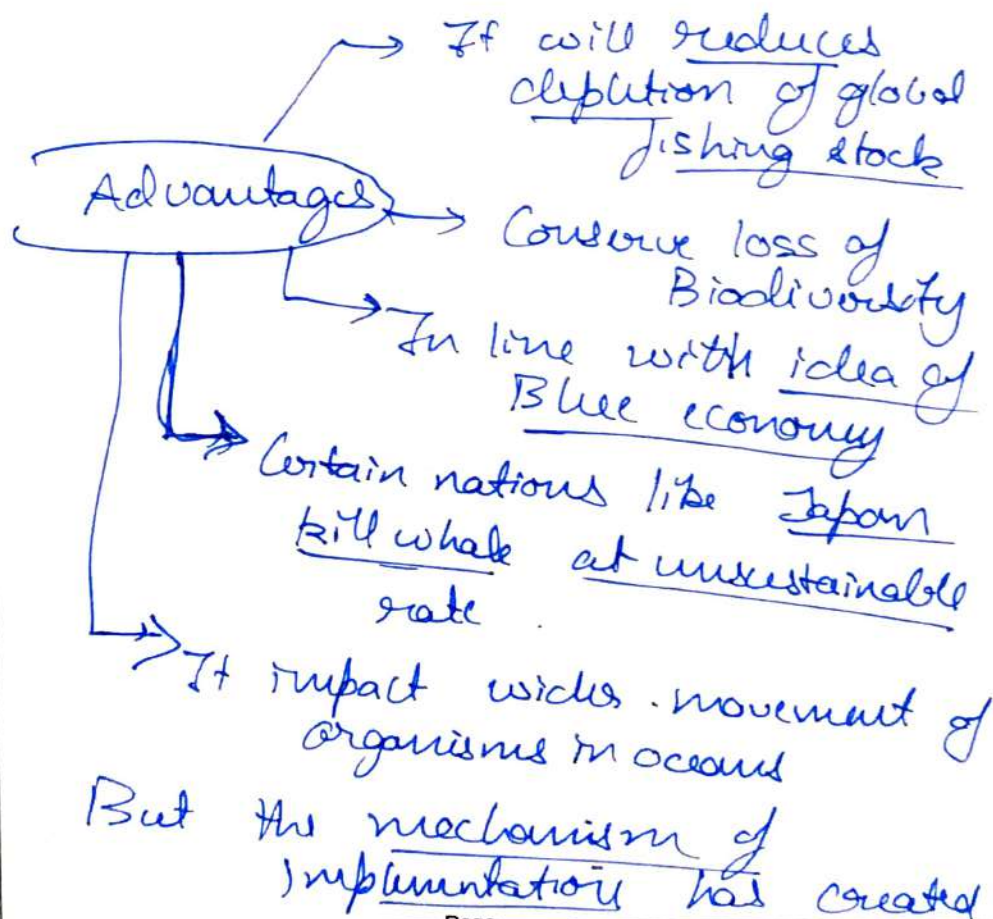
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Q3

India is world's 2nd largest producer
of fisheries and also 2nd largest
in terms of aquaculture capacity.

In this light WTO's measures
to cause elimination of illegal
unreported fishing has raised
mixed emotions



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Some concerns:-

- 1) Create unfair playing ground for rich and developing countries
- 2) In India, fishing a major source of livelihood
- 3) This policy can disproportionately harm smaller fishermen.
- 4) It will still leave gaps for exploitation on large seas
↳ benefit big boat owners.

India in this light.

- ↳ supports a need to conserve oceanic biodiversity
 - ↳ wants to safeguard fishermen livelihood.
 - ↳ wants policy space for developing countries
- And has an inclusive Blue economy in form of SAGAR strategy

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न लिखें।

24

India has 36% of its region as
irrigated land and rest
of it is an rainfed region.

While most policies till now
were biased against these :-

- 1) MSP regime selective provides
higher subsidy for rice, wheat
↳ these cannot be grown in
hardly rainfed regions.
- 2) Green revolution was restricted
to these irrigated regions.
- 3) Insurance premiums are high for
rainfed regions.
- 4) Lack of investment in land
↳ stagnant expansion of
percentage of irrigated region
- 5) Policies like microirrigation,

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Selectively focuses on already
developed region.

Realising this shortcoming, certain
governmental initiatives in this
regard are:—

1) PM Krishi Sinchayee Yojna

↳ watershed development
component

↳ "Har Khet ko Pani"

2) PM KUSUM (Kisan Uya evam
Sinchayee Uthan Yojna)

↳ to provide standalone
solar pump for increasing
irrigation coverage

3) Mission for extension of green
revolution to Eastern states

Now need to → extend protective
irrigation coverage

Agro climate Sustainable farming
Based crop promotion



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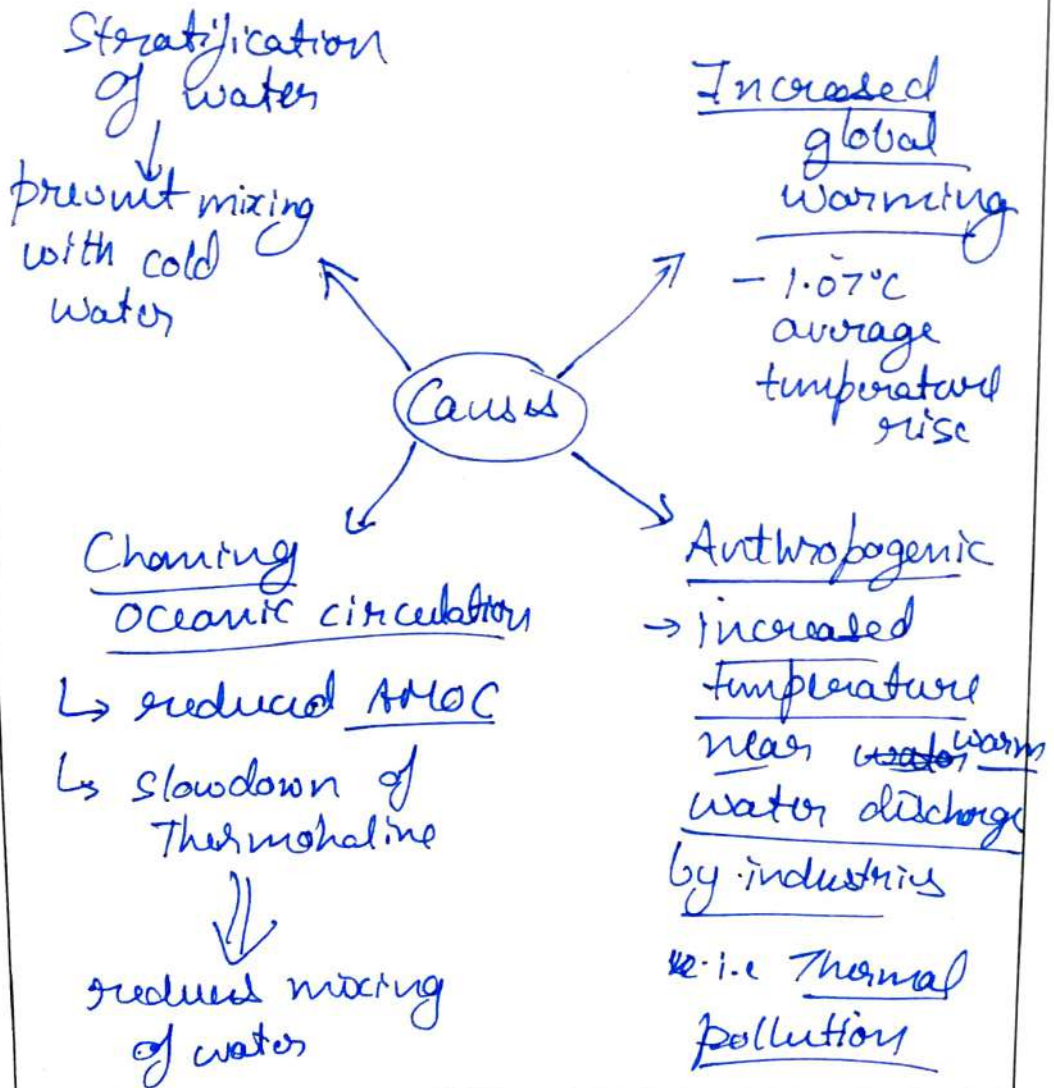
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Q5

Marine heatwaves are increased
temperature in localized oceanic
regions above the long period
average. It is calculated as
more than 2°C increase for 2 days.

ex mass death in Atlantic of fishes

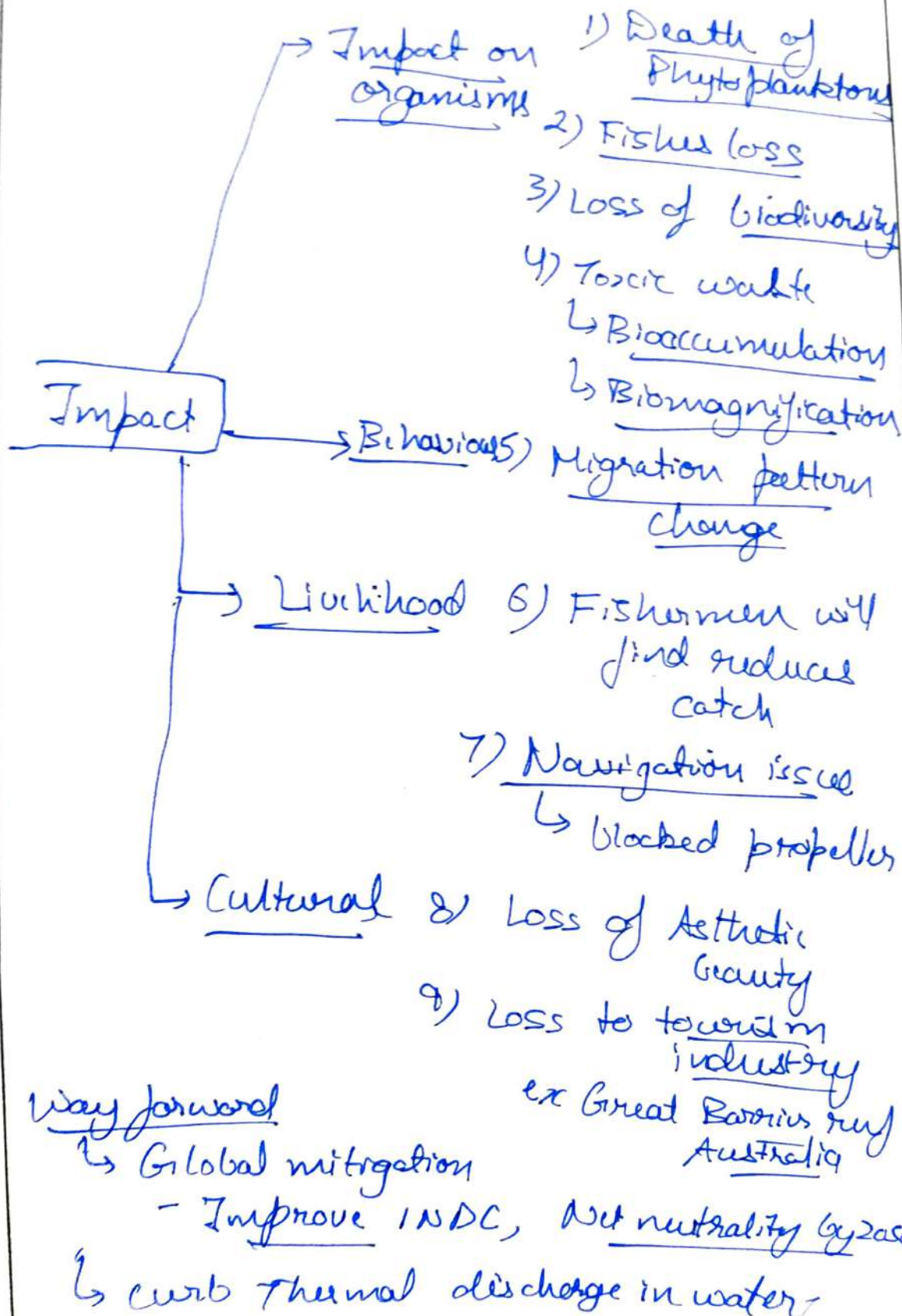
Causes



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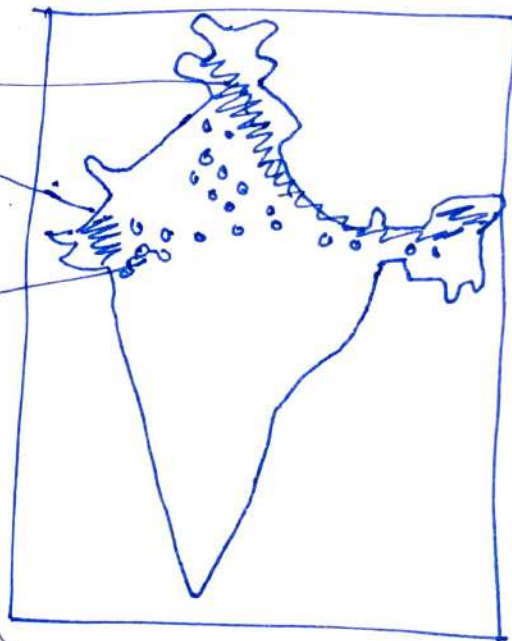
In India 67% of the region is
Earthquake prone with high
intensity zones.

Asismic structure provide strength
to withstand these earthquakes

Earthquakes

1) Very severe
Earthquake

2) Severe category
of earthquake



Ned of National Program on seismic retrofitting

1) Increased earthquake risk
(above mentioned)

2) Lot of old buildings which house
vital structure
e.g. Centre Vista, Parliament

↳ collapse of them cause national
crisis.

3) Critical information infrastructure
are not earthquake resistant

4) A unified plan can help as

↳ Region specific guidelines
based on risk

↳ legal liability for retrofitting

↳ In line with idea of Build
back Better

5) It will also fulfill India's
Sendai Framework commitment

Thus need to → assess the buildings
requiring it

↓
Allocate fund
for mitigation

↘
Create a expert
committee for plan

↳ as suggested by 15th Finance Comm

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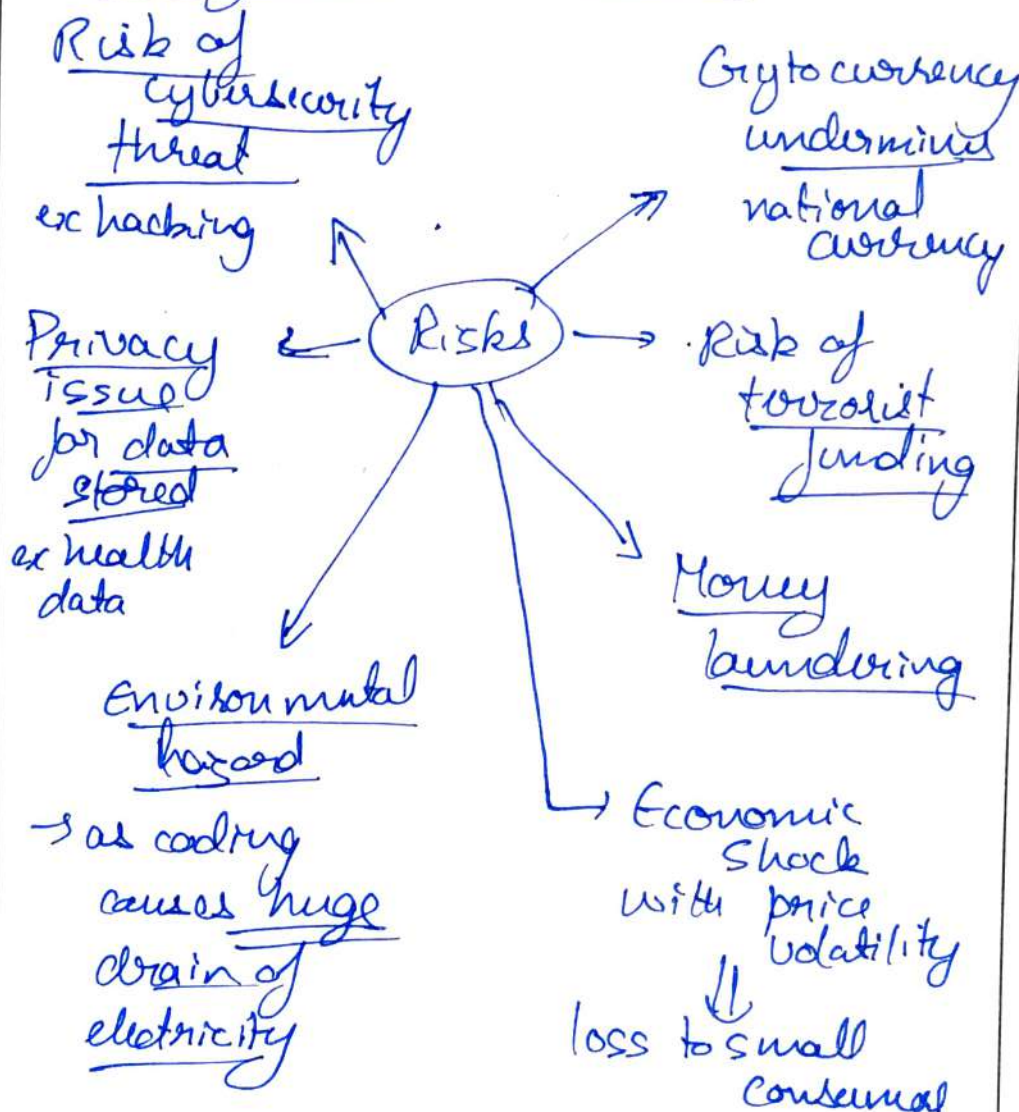
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उम्मीदवारों को इस शीट पर नही लिखना चाहिए।
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Q7

Cryptoassets are electronically tradeable commodities which are protected by cryptographically encrypted codes.

Though there are risks



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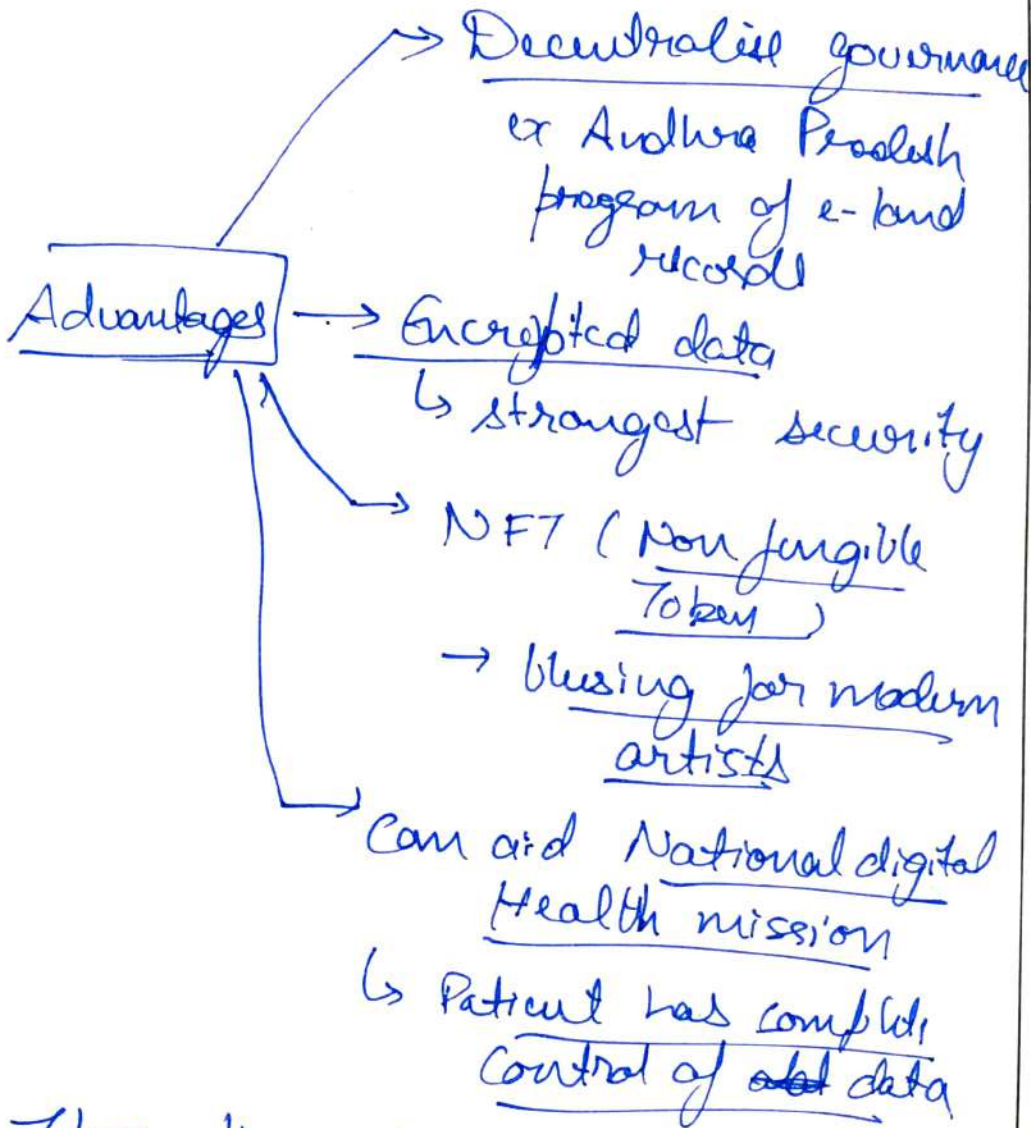
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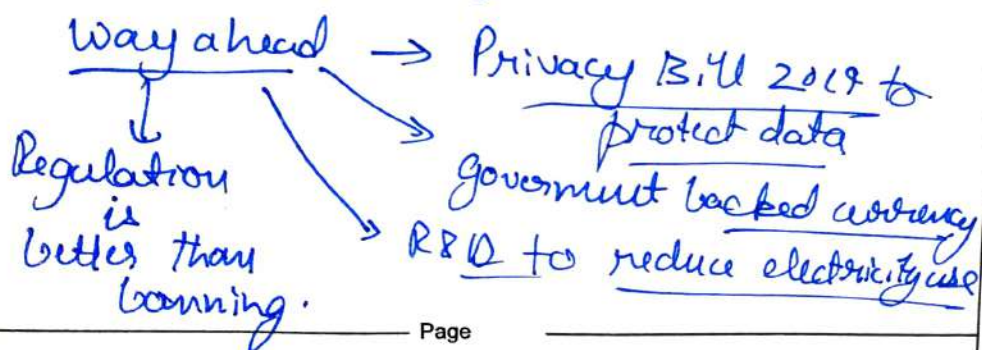
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Despite it certain Advantages



Thus there is need to allow with certain safeguards



28

Virtual reality refers to feeling
of real life experiences in
computer screens. ex VR headset

while Augmented reality allow
visualisation of virtual objects
on real life fields.

ex NASA's space App-

They have massive innovation
(potential) :-

In industries and research field

1) In gaming industry it is
major boon

↳ provides real life
experience ex Pokemon Go

2) Allow virtual office to be
Created

↳ work from home with
better participation.

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3) Tourism potential and Education opportunity.

- ↳ virtual tour of galleries
- ↳ ex Google tour of Francis's Louvre museum

4) Helps in Aviation, automobile industry

- ↳ To better design products

5) In medical field better research opportunity

- ↳ improve doctor's skills
- ↳ more precise therapeutics

6) Creation of pharmaceutical nanomolecules

- ↳ study interactions.

Thus India needs to invest in Semiconductor manufacturing to complement Software industry. It will help develop indigenous industry.

29

National Narcotics Control Bureau
is an executive agency empowered
under NDPS Act 1985 to tackle
drug related crimes.

Role and functions

- 1) It is apex agency for drug related crime.
- 2) Works under ministry of home affairs
- 3) It causes surveillance under of trade trade.
- 4) Coordinates with BSF for border smuggling.
- 5) It arrest for intake of drug substance, and carrying more than prescribed amount of drug

Narcotic drugs and psychotropic Substance Act 1985

- ↳ provides for prescribed amount of drug substance
- ↳ NCB to enforce the law.
- ↳ Punitive measures for curbing drug trade

Need for reform/remodelling :-

- 1) To include newer drugs under its definition
- 2) NCB is ineffective in tackling crime
- 3) Lack of coordination with State police & border security
 - ↳ high trade in Punjab, Manipur.
- 4) Preventive detention provision creates grounds of misuse
There we need a 'SMART' police approach to well equip NCB with minimum violation of human rights

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Q10

India has a robust framework of
IT Act 2008, Telegraph Act 1885
to monitor communications

To prevent
Cyber attack
- need to
monitor
cyber space

It provides
information
to preempt
crime

Surveillance
is
necessary

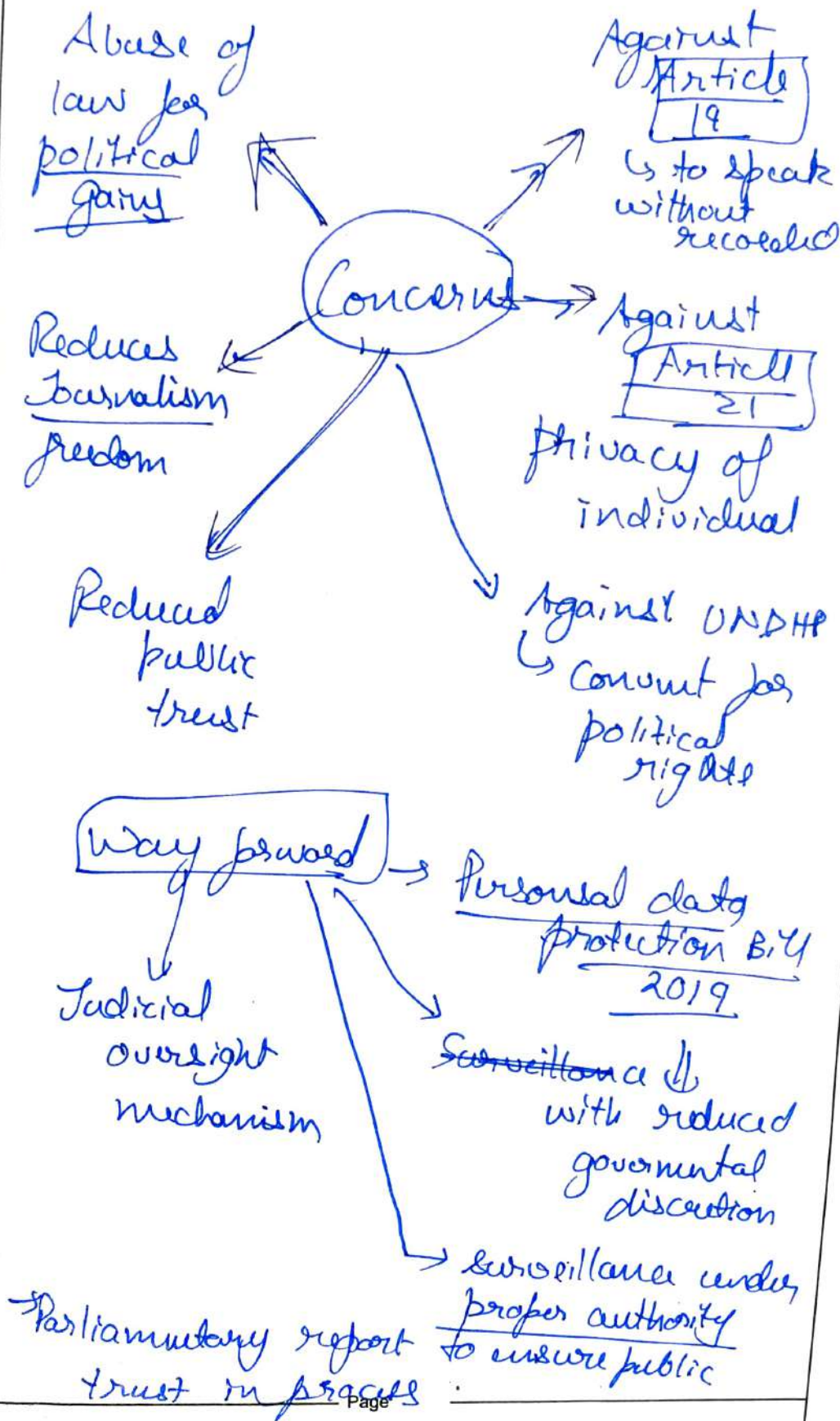
monitoring
to protect
communications

changing
nature of
crimes need
surveillance

- ex
online
smuggling

provides
link to
entire organisation

ex 26/11 investigation
of David headley



Q11

Farming is a age old activity which is guided by multitude of factors, one of them being the yield or productivity of crop.

Other factors guiding decision

- 1) Market price signals to farmers
↳ expectation of future revenues
- 2) Cob web phenomenon - past years revenue
- 3) Government policy support
↳ ex MSP price of crops
- 4) Cost of inputs to be used in particular crop.
- 5) Availability of seeds
↳ whether GM monopoly or not
- 6) Risk of pest infection in crops
↳ eg cotton Bollworm.

7) Perishability of crop and distance to market

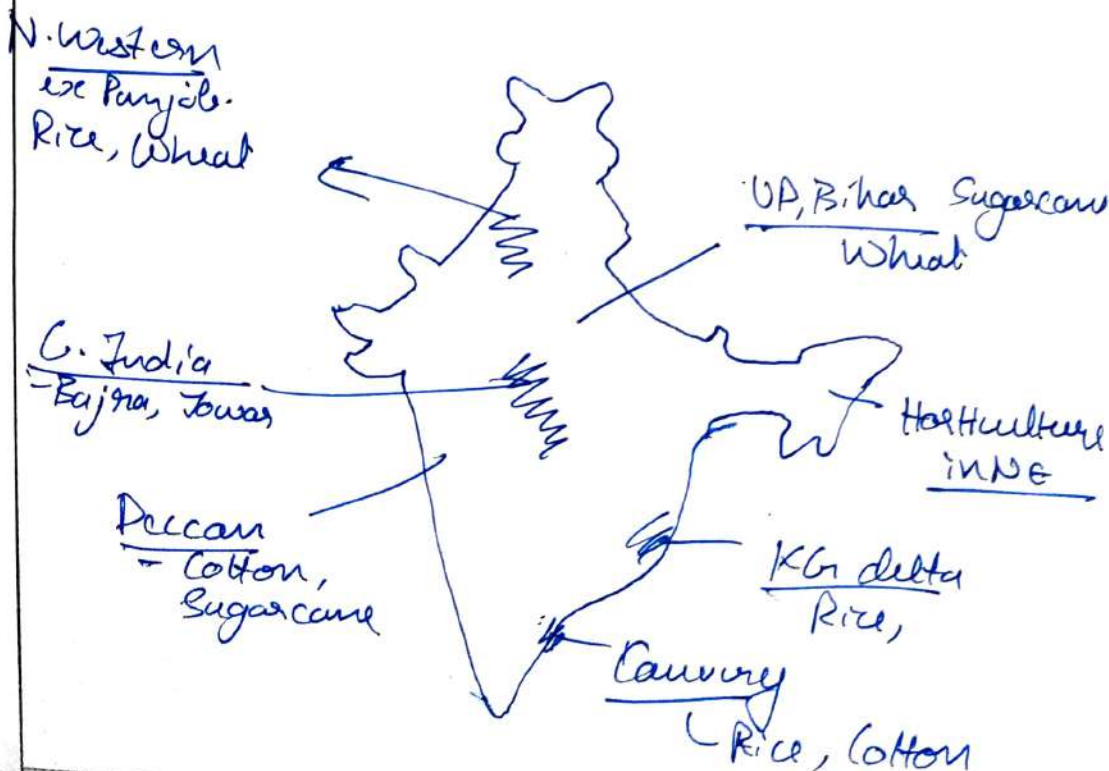
↳ eg Horticulture crops

8) Traditional knowledge of growing practice

9) Food choices of consumers.

Need to bring change in distribution

Current pattern



Need to change :-

- 1) MSD driven pattern and not agro climate driven
↳ Rice ~~and~~ is harming Punjab
- 2) Threatens ecology, water potential
↳ Punjab → Alkalinisation of soil,
ground water depletion
- 3) Lack of commercial crop in entire country
- 4) No extension of green revolution in North East
↳ Need to extend infrastructure there
- 5) Need to meet demands of Palm oil import, pulses — which are important
- 6) Sustainability of agriculture

Way forward → Evergreen revolution of M.S. Swaminathan, investment in market infrastructure, reform APMC markets.

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127

Livestock sector refers to the animal husbandary sector which includes cattle, milk animals, poultry. As these provide supplementary income to farmers

Resilience to climate shocks
as safer than crops

Additional avenue of income to farmers

Revenue for small and marginal farmers



Nutrition
ex milk of goat to child

Farm waste is used as animal feed

↓
reduces problem of burning waste

Animal waste is used as manure for soil
↓
organic farming

Steps taken by government

1) National Livestock mission

↓
Fodder
management

↓
Pigs in
North
east

↓
Develop
poultry
sector

2) Rashtriya Gokul Yojna - for cows

3) National mission for livestock diseases

↓
Vaccine
against FMD,
Brucella

↓
Veterinary
hospital chain

4) National Animal Husbandry Infrastructure development Fund

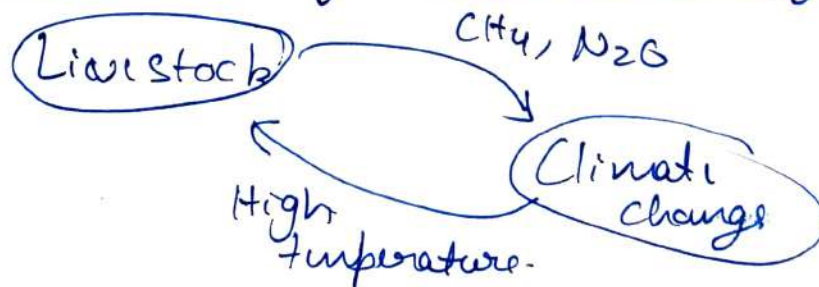
5) National dairy development mission

6) National Infrastructure fund for dairy development.

7) Food safety and security standard authority India (FSSAI)

Potential Impact of climate change on sector

- 1) Warming of climate reduces yield of milk
↳ ex Jersey cow needs low temperature
- 2) It impacts dodder produce
↳ scarcity for animals.
- 3) Increases animal diseases
↳ ex Foot and mouth disease
- 4) Adverse weather events ex cyclones
↳ disrupt supply chain and kills livestock
- 5) Also livestock fuels climate change



Thus need to halt climate change
Invest in veterinary services,
R&D for more resilient breeds.

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13

Economics follow two types of
models - demand side ~~into~~ model,
and supply side investment
model. Supply side model suggests
that supply investment creates
demand for future investments

for instance,

Investment in infrastructure in
Indian economy will lead to! -

Merits

- 1) It will increase employment
avenues in economy
↳ reflect in improved wages
↓
fuel more demand.
- 2) It will remove supply chain
bottleneck
↓
Increased competitiveness of

of Indian export products
↓

Increased exports and
forex revenue

3) Increased investment in R&D
and innovation

↳ improved productivity of
economy.

4) Crowding in effect - Governmental
investment crowds in private
capital

↳ eg DMIC is attracting
industries

5) It creates sustainability of
growth

Demerits

1) ~~Lack of private~~

1) Infrastructure investment has
a huge opportunity cost

↳ diverts money from
demand side measures

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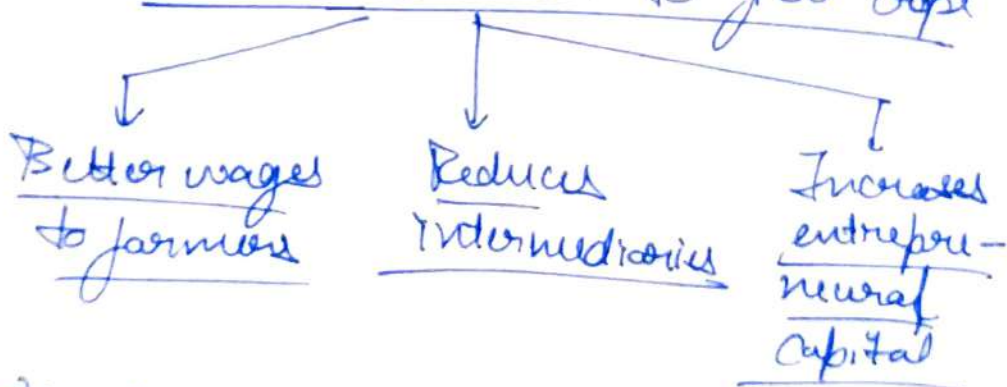
- 2) This reduces demand in economy
↳ may deter private investment in economy.
 - 3) It can perpetuate inequalities in Indian society.
↳ as resources distributed inequally
 - 4) Loss of revenue to government
 - 5) If investment is done by borrowing from market
↳ Crowd out private sector
- Hence there is a need to balance supply side economy with demand.
- ex India - should invest in projects like Seagowels
↳ But, it need MGNREGA like demand creation measures also.

14

Food processing sector in India
is one of the sunrise sector of
economy with huge employment
and export growth prospects

In it innovations provide both
an opportunity and assure
sustainability :-

1) It increases the investment in
value addition to food crops



2) It will reduce food wastage
in the agricultural sector
↳ India has 15-20% food
wastage

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3) Huge employment avenues
for rural populations

↓
currently
Hidden
employment
in Agriculture

↓
Need of
low skilled
job. opportunities

And it provides a labour intensive
industry option

4) Increase value addition in
term of storage and
food diversification

↳ Jams, sauce, etc can
be made out of produce

5) It provides improved choices
to consumers

↳ ex rising middle
class is demanding more
varieties of choices

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But there are some challenges

- Lack of investment by private sector
- Low level of skilled human resource
- Rigid environmental laws
- Distorted market structure
- Weak supply chain.
- Small farmers with minimal surplus

Thus there is need of

- Increased support for micro food processing
- R&D support to small factories.
- Entrepreneurial support for innovation
- Reduce rigidities of regulation.

15

Unemployment threatened to turn India's demographic dividend into demographic disaster.

Currently the rate is 4.8%

In this there are some structural issues in economy

- Mismatch of skill and demand by industries
- general slowdown of economy
- global slowdown of economy

4)

But there are other factors also which is causing this

- 1) COVID related shock to world economy
 - ↳ increased unemployment around world
- 2) Competitive labour market conditions
 - ↳ eg Vietnam

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- 3/ Growing protectionism and
reducing global investments
- 4/ Indian exports faces discrim-
inatory non tariff barriers
↳ reduces investments
- 5/ Uncompetitive Indian labour
force as compared to world
↳ low skill and education
opportunities
↳ labour law rigidities

Thus to tackle this problem
series of measures are
taken:-

- 1) Simplification of labour code
↳ 4 labour codes created
after replacing more than
100 laws
- 2) PM Kaushal Vikas Yojna for
skill development

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- 3) National apprenticeship scheme
↳ to support field based learning of interns.
- 4) PM Rozgar Yojna - government will provide employment benefits of workers
↳ reduce impact on industries.
- 5) New Education policy 2020 which focuses on vocational Education of workforce
But beyond this there is a need for
→ Creating skilling opportunities
→ Industry - academia linkage
→ Investment in R&D to improve productivity
→ Industry 4.0
Only then can India tackle unemployment

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उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए।
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16

India, driving on its successful
working based on its NDC
was resolute in making future
promises at COP26

Commitments

1) It aims to achieve net zero
emission by 2070

↳ balance climate concerns
and growth.

2) It aims to make total 500 GW
investment in renewable
energy.

3) It aims to achieve total
renewable energy of
less than 50% by 2030

4) It expects global community
to provide 1 trillion of

investment in meeting adaptation and mitigation challenges.

Thus, it questions India's capabilities in achieving
Net zero emission by 2070 -

India has capacity

- 1) Successful INDC contributions are encouraging
- 2) It reduced emission intensity by 24% for its GDP
↳ closer to achieving 33% target
- 3) It will meet renewable energy target of 40% by 2023.

But there are certain questions
on its capabilities :-

- 1) It has huge economic growth needs
↳ can't compromise on poverty

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

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उम्मीदवारों को
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कृपया इस
स्थान में प्रश्न सं
ख्या को अतिरिक्त
न लिखें।

2) Its population is growing
↳ will increase energy
needs

3) Urbanisation is fast in
world and will reach 50%
by 2050

↳ need extensive energy

4) R&D support by developed
world is lukewarm.

5) Limitations of renewables

↳ seasonality.

Thus India should actively
pursue

→ One world one grid to
connect renewables

→ Seek active support of
world community in
adaptation and mitigation
measures

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

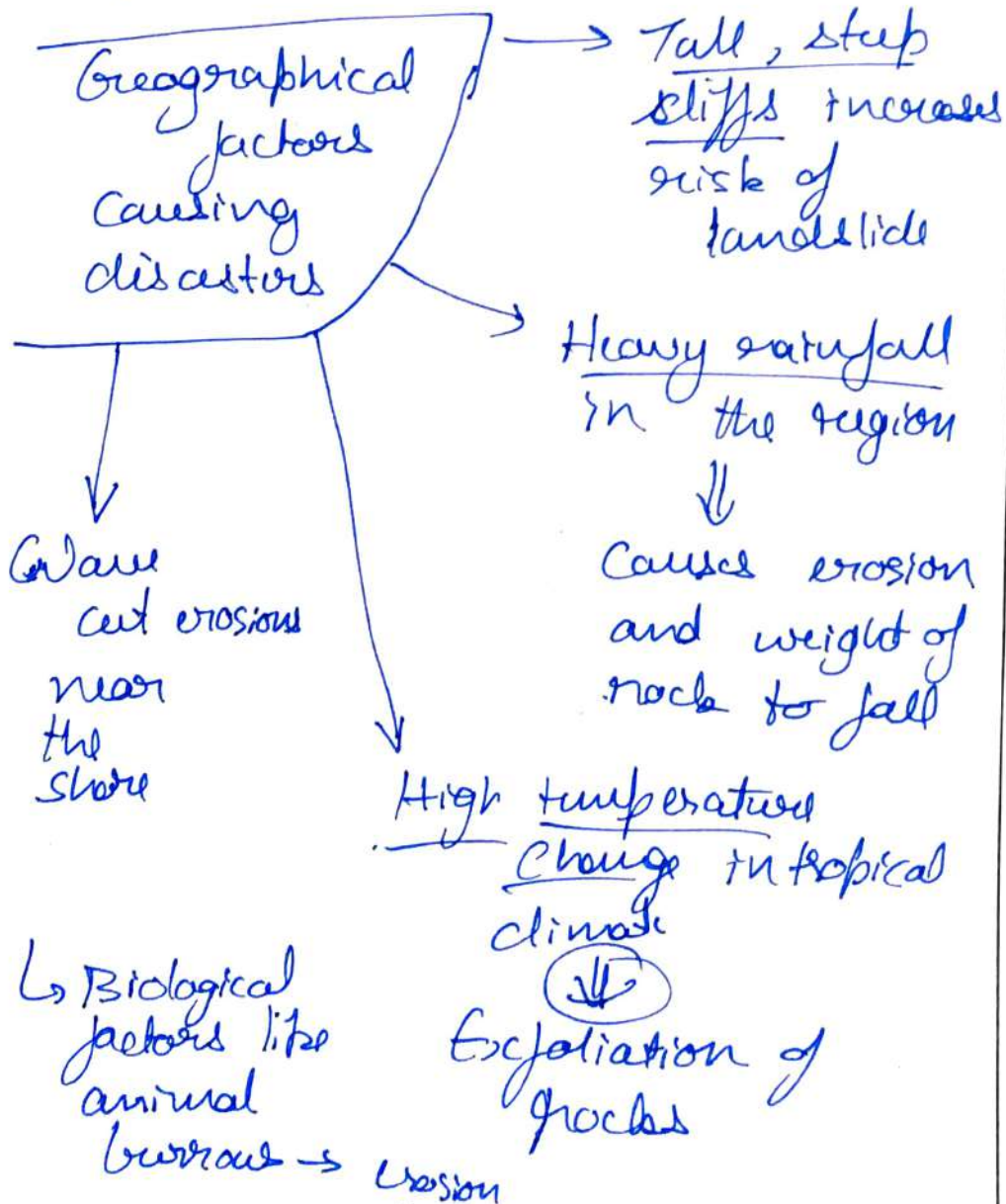
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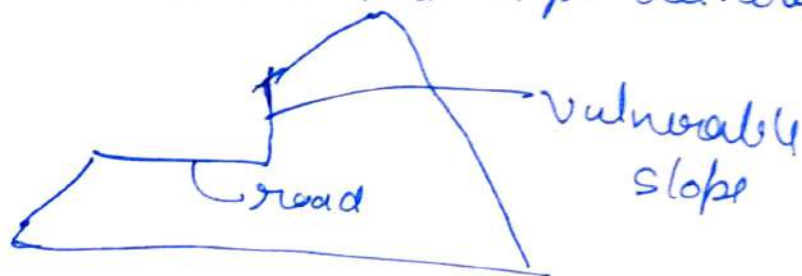
17

Western Ghats are one of the oldest geological regions of the world and a Biodiversity hotspot with thousands of undiscovered species.



Human interventions has
exacerbated them as:-

- Deforestation of forests
 - ↳ made the slopes unstable
- Climate change
 - ↳ increased heavy,
concentrated Rainfalls
 - ↳ increased forest fires.
- Construction activities like
rail, road, houses
 - ↳ leaves the slope vulnerable



- Explosion - ex Dynamite use
- Dam constructions
- Ground water extraction
 - ↳ collapse of hollow.

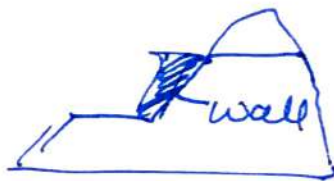
Measures to safeguard wetland Grihalis +

1) Early implementation of Gadgil
Committee recommendation

↳ safeguard Ecologically
sensitive area.

2) Protective measures for existing
infrastructure

↳ ex wall shields



3) Curb on illegal construction
activities of humans

4) Practise sustainable farming
↳ ex Bunding to prevent seepage

5) Develop ecotourism, instead
of developing buildings for
tourism.

Thus a strong political will is
needed by states to implement them.

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कृपया इस स्थान में प्रश्न संख्या को अनिवार्य रूप से लिखें।

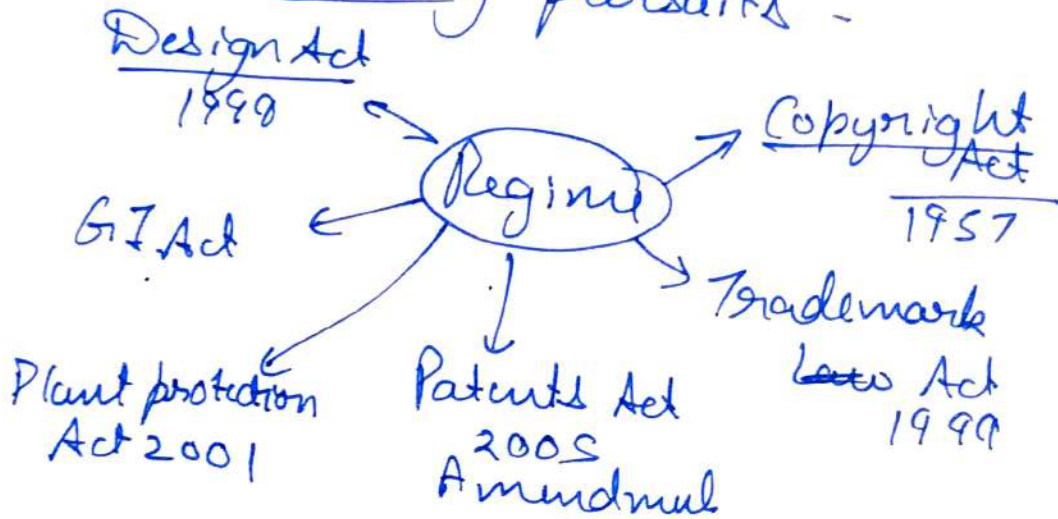
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उम्मीदवारों को इस हाशिए में नहीं लिखना चाहिए।
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18

IPR regime protect the innovation of individuals' scientific, creative and literary pursuits -



It has inadequate protection and enforcement.

→ Lacks comprehensive coverage in patents Act

↳ Data exclusivity

→ Rampant issue of online piracy

↳ movies, games.

→ Misuse of copyright Act

↳ books sold freely

उम्मीदवारों को
इस कॉपी में
कोई लिखना
नाहीं।
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कृपया इस स्थान
में प्रश्न संख्या को
प्रतिबिम्बित रूप
में लिखें।

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इस कॉपी में
कोई लिखना
नाहीं।
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write on this
margin.

In this light, measures to make
IPR regime more robust

1) Increased investment in
citizen Awareness

↓
Knowledge to
Create IPR
resources

↓
That violation
of IPR is
illegal

2) Create a robust law to
Overlook IPR regime in
compliance with global framework

3) Train police with law to ensure
quick implementation

4) Create digital surveillance
capability of police.

5) Use of Big data and AI
tools to block access to
pirated content.

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उम्मीदवारों को
इस कक्ष में
कोई लिखना
नाहिका।
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- 8) More use of tools like
IPR Nani which aimed
at human capacity building
- 7) Include in curriculum of
Schools and colleges
about IPR right.
- 8) Faster IPR rights clearance
to ensure safeguard.
- 9) An online registry of
IPR for quick search

We need a robust IPR to
push economy in R&D led
productivity as

- tackle middle income
trap
- Productivity gains.
- Growing new technology
exclusions ex 5G

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इस हाशिये में
नहीं लिखना
चाहिए
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19

Terrorists are open security
threat to a nation and are
ideological driven ex Al Qaeda

While organised crime groups
are not openly challenging state
and remained driven by money
ex D-company, CRIS

Similarities

- 1) Both violate rule of law.
- 2) Indulge in criminal activities
of serious nature
- 3) Monetary support essential
for survival
- 4) Lead by an head of organisation
- 5) Strongly knit community

But there are certain differences
too.

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उम्मीदवारों को
इस कॉपी में
कोई लिखना
ना है।
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Differences

Organised
crime
group

Terrorists

Ideology - money
needs

- some
radical
ideology

Challenge - No open
Challenge

Challenge
state openly

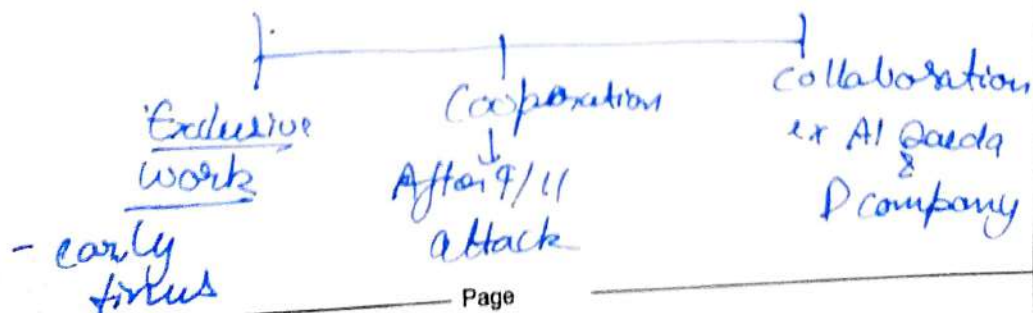
Weapon - smaller
weaponry

Carry deadly
arms

Technique - money
extraction

Cross border
smuggling

In spite of these differences there
are linkages seen :-



1) Tactical linkages for cooperation due to activities

↳ OCG provide money

↳ Terrorists provide weaponry,
Cross border movements.

2) After 9/11 closer association due to US crackdown.

3) Strategic association due to proximity in ideology
ex D-company helped Terrorist

4) Growing connection in cyberspace

5) Cooperation in Antistate activities

Hence, need for CAPA like law to govern OCG and transfer Coordination work to NIA.

This will ensure better coordination

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उम्मीदवारों को
इस हद्दशिमा में
कभी कुछ लिखना
चाहिए
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20
As long as humanitides desire
for domination exist, warfare
fails to cease. They just
change morphology.

In this civil society is emerging
as new frontier as.

1) Hybrid warfare ideology

↳ which disrupt civil
presence to maximise
impact

2) Involvement of local people
in warfare

↳ make it difficult for
Cyberas security agencies
to track and neutralise

3) Risk of negative publicity

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due to action on civil society

4) growing cyber space crimes

↳ allow cross border connection and manipulation possible.

5) Lack of civic awareness and cyber hygiene in citizen

↳ predisposes them to such kind of warfare

6) Gripping technological capacity of nation

↳ ex deployment of AI by China, US.

Thus there is a need for investment in civil society to safeguard against this warfare.

1) Increased awareness of
citizenship



2) Regulatory influence on civil
society working

3) Network surveillance tools to
preempt attack.

4) Increased capacity of security
agencies to deal with it.

5) Deployment of technologies
like AI, big data.

Thus, there is need of
international cooperation and
agreement to global governance
models to prevent this menace.