

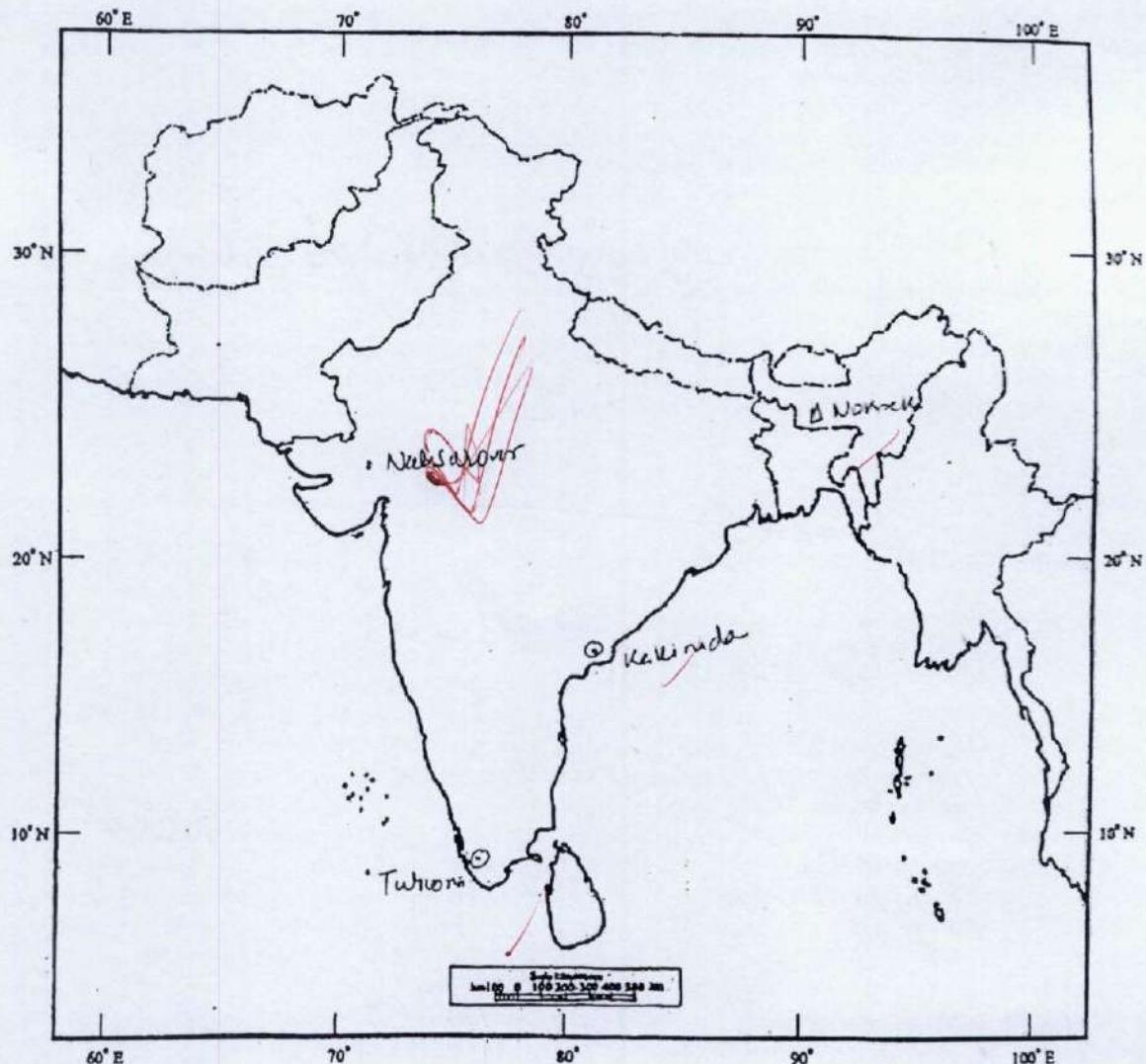
## DIRECTION IAS

block on geopolitical ideas  
you have weaker hand and

Contemporary ideas have  
coherent character entire  
syllabus that link must  
evolve in unity

# INDIA

WITH AFGHANISTAN, BANGLADESH, BHUTAN, NEPAL, MYANMAR  
(BURMA), PAKISTAN AND SRI LANKA



# U.P.S.C.

Ans 1

(a) Nal Sarovar

It is ramsar site in Gujarat. It is saline water ~~set~~ lake. Indian Wild Ass is a prominent visitor here. It is facing threats of inundation and needs to be conserved

(b) Tuticorin

(III)

Kakinada

It is a city located on the delta of Krishna - Godavari River

(IV)

Anjar

(V)

Nourek

It is a peak in biodiversity area.

Meghalaya. It is very important

603

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1(b)

Mahila - e - Haat

It is a new ~~for~~ market place where women entrepreneurs would be able to sell their products online.

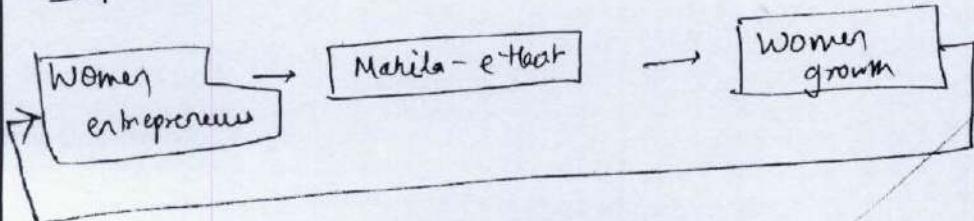
Advantages

Women in India faces socio-economic discrimination. All traditional market places are dominated by men with no facilities like toilets. Therefore, this will provide an alternative to them.

Women in India are often involved in making customized products like handicrafts, toys etc. These items have vivid consumers all round the world. E-commerce would be a better place to engage with them.

Better profit realization → e-market place would be free of middlemen, therefore, they can realize better profits.

Women, will feel empowered by connecting to customers directly. This will even encourage more women. There can be seen as positive feedback system to women empowerment.



MaHila-e-Haat will also have additive gains like inclusion in financial & digital spheres.

but there are few impediments

✓ availability of electricity & internet in pockets where women work

✓ lack of branding and market value of such units

Therefore ~~OB~~ a bridge course to make women entrepreneurs feel comfortable to such platforms should also be provided.

*Role of IRTC*

*SDG*

16)

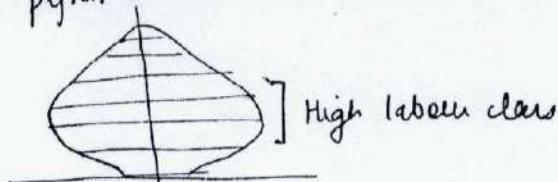
### Demographic dividend

It refers to the economic opportunity which a country has, when its has maximum population in younger age group.

It means dependency ratio is less and hence there are more young people.

Philosophical basis → This thought links population growth with ~~not~~ economic development which is different from Malthus thought process.

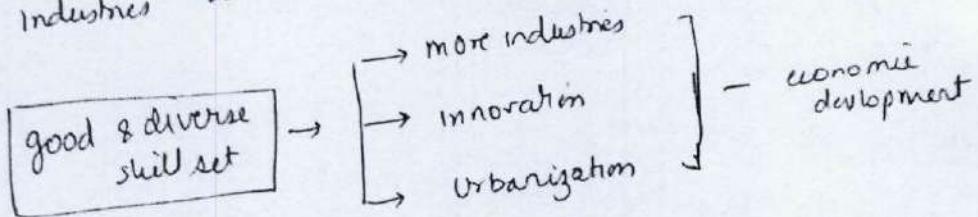
Pyramid - Age pyramid look like this



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## Opportunities it Offer :

- (1) Young generation are biggest consumers as well as savers. They save for their old life. Hence we can expect good demand and investment in form of pension schemes etc.
- (2) A good number of people in working age group provides a pool of different skill set, which is a definite condition for Alfred Weber's industrial location. Hence industries would tend to increase.



## Prerequisite condition:

India is also going through demographic dividend phase till 2050 but this only represents an opportunity. Demographic dividend would be encashed only and only if youth is skilled and educated. If government fails to create enough opportunities, then this can be turned into a liability.

## Problem of demographic dividend if gone wrong:

Drug Abuse  
Crime  
Riots - Stone Pelters in J&K.

Therefore, still India Mission, RUSA are extremely essential to reap the benefits.

Ans 1(d)

Literacy pattern

Literacy is one of the essential characteristic of population. In India, any one who can read and write his/her name in any language (above age of seven) is considered as literate.

Literacy pattern in India is skewed with overall literacy of around 70%.

Pattern variables

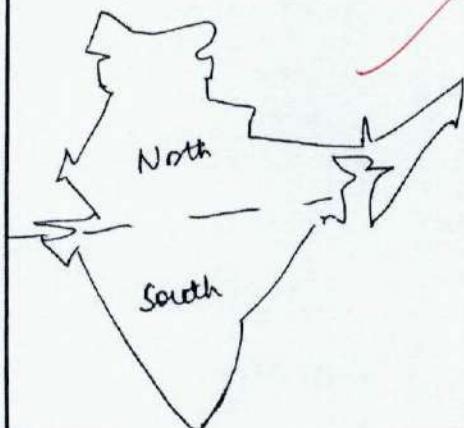
1) Gender divide: Males are more literate than women.

This has bearing on population growth of country. According to Cairo declaration, if women are illiterate, then population growth / fertility rates are high.

(2) Rural- Urban divide → Rural areas which have less access to primary education and more acceptance of illiteracy in society creates this divide.

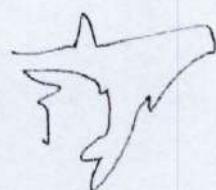
(3) North & south divide + North being agricultural society, does not laid emphasis on literacy as well as southern states are much more industrialised.

Therefore, there is divide with more literacy in southern states.



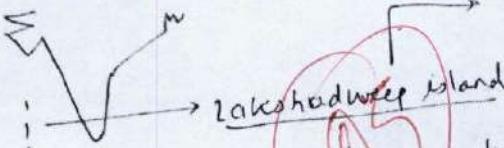
(4) Other social divide - SC/ST and other backward classes have relative less literacy rates.

## (4) Special cases



North Eastern states have high literacy rate than North India. Inspite of division on ethnic faults, these areas have good literacy numbers.

Literacy rate of graduates can properly become a growth pole of this area if properly utilised.

 Lakshadweep Island has literacy of around 90%. which is one of the highest in India. Literacy rates have bearing on both social as well as economic growth.

## 1(c)

### Gender dimension of migration

Migration means relative change in area of residence.

#### Causes of gender migration

→ Marriage = Among rural India, 70% of rural-rural migration takes place because of marriage.

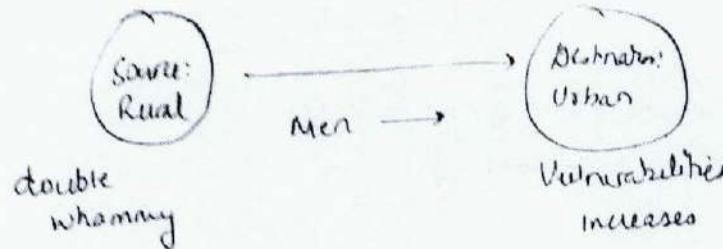
→ Economic development = As Kaveetion stated, while migrating, more young boys will migrate, therefore girls do migrate but in other boys for economic and educational reasons.

#### Consequences of Migration on women

##### Source: Rural Areas

Women faces double whammy because they have to take care of farms as well as children. India is going through the phase of rural to urban migration mostly. In this scenario, when men leaves, entire burden falls on women.

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Destination:

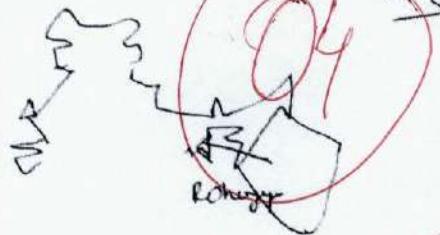
Since more men migrate than women. Therefore sex ratio of urban cities gets low. Eg Delhi has low sex ratio.

Low sex ratio results in increase in crime against women. Therefore vulnerability increases.

Women who migrates ~~from~~ to urban areas feel vulnerable due to ~~to~~ unsafe public transport and housing facilities in cities.

Threats to migrating women

Women face more threats in comparison to men. If the push factors are political prosecution, climate refugee as in case of Syria, Rohingyas. They have less bargaining power and become victims of trafficking & sexual abuse.



Gender migration borne out of pull factors shows a sign of prosperity.

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इस भाग में कुछ  
न लिखें।  
(Don't write anything  
in this part)

*Ques*  
Education is essential for social-economic development of country. It is essential for a country like India, which is undergoing a demographic dividend phase.

There are many ways of providing education:

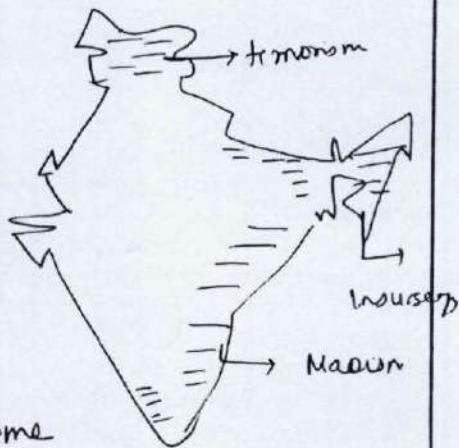
- Traditional ways
- Digital classrooms
- online education without brick & mortar classrooms

Scope of Online education in India

(1) Brick & mortar schools are expensive to construct. Moreover, they face existential threats in area affected by left wing terrorism, insurgency and terrorism (JNU).

Violence affects functioning of schools in various manners:

█ Areas affected by violence



Violence

- Skilled teachers don't want to come
- Teacher absenteeism is high
- Dropout rates are high due to radicalism
- School infrastructure is highly affected.

Online education can be easily availed on mobile devices which have good penetration in these areas.

Therefore, both methods can be used here to complement

(2) Shortage of teachers

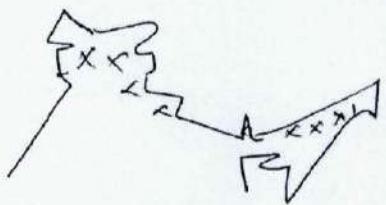
Nearly, all states due to financial consideration is expressing shortage. Online education can solve the, as one teacher's recording can be used again and again.

(3) Tribal literacy

Tribals, particularly PTVGs are fearing loss of culture as teacher's cadre is usually dominated by dominant tribes. PTVGs' tribal teachers are less in number. Therefore these resources can be used.

## (4) In Remote Area where physical linkage are not proper or are prone to natural disasters like landslides, rainfall, winter, snowfall etc.

Himalayan Region



Online education can help in completing syllabus and offer education in remote areas

(5) Quality of teachers → Teacher's skill set are often not upto the mark. Therefore, online education can augment their skills.

DIKSHA portal launched for teacher's education is a laudable step.

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(6) It can complement in increasing learning of students  
 Visuals, Videos, audio can help bridge the learning gaps.

Case study: Online education in Burka district, Bihar

A remote affected area, is now witnessing growth in enrollment due to installation of online education centers in traditional setup. Absence of teachers is complemented by online education.

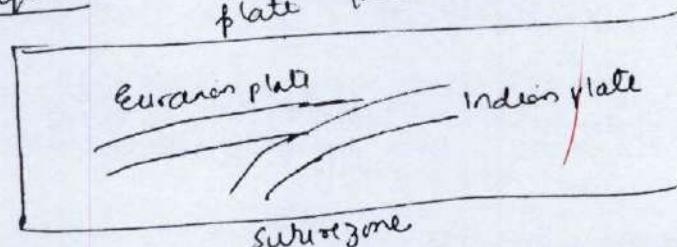
Online education if cannot replace but can complement the traditional way in a beneficial manner.

Ans  
Q(1b)

Himalayas, the young fold mountains are vulnerable to number of hazards, by the very fact ~~that~~ of their existence.

Landslides - Mountainous areas are prone to landslides due to slope and rainfall.

Earthquake - Himalayas are located on edge of two converging plates India & Eurasia



Forest fires:- Indian monsoon is preceded by dry and hot months, due to which foliage on floor of forest like chir get fire. This is also essential for regeneration.

Mudflow → In case of excessive rainfall, steep slopes may result into mudflow.

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However, in the recent times, Kedarnath tragedy, increase in number of forest fires, increased frequency of landslides and floods (Tzuu flood, 2014) has shown that Himalayas are evolving a node of natural hazards.

Reasons: →

- ① Population growth → Increase in population has led to widespread encroachment on slopes, deforestation. In addition to this tourism which is uncheckable has lead to haphazard growth of cities like Shimla, Dehradoon etc.

This has disturbed the fragile ecosystem of these areas.

Case Study: Kedarnath Hazard

Cloud burst turned into a hazard of such a wide scale because of encroachment of river plain by makeshift camps, hotels and parkings.

~~Case Study: Shimla~~

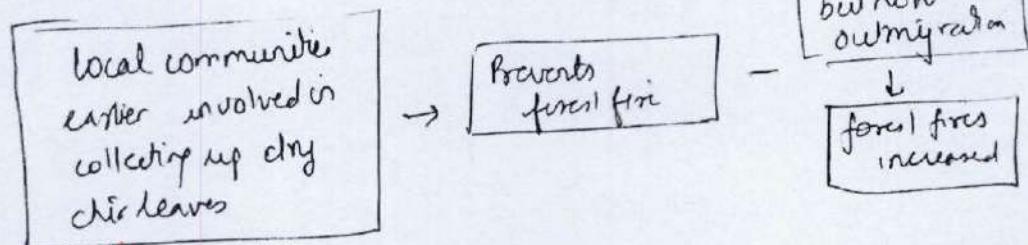
Water crisis in Shimla recently happened due to overuse of spring in Spiti region adjoining Shimla. Moreover, the traditional system of water harvesting are no more in use. Due to which exploitation of ground water is rampant. One of Shimla's spring lost its purity due to mixing of untreated sewage water which cause jaundice in the city.

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illmanagement, unplanned urbanizations are the reason for such extent of hazards

## (2) Migration in Uttarakhand

Nearly 700 ~~villages~~ villages in Garhwal ~~district~~ region of Uttarakhand are ghost villages. Out Migration has caused change in rural landscape. Now, Uttarakhand is more vulnerable to forest fires.

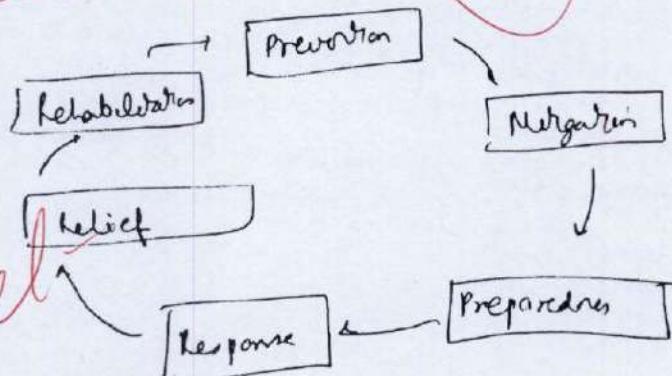


You must be

Solution

growth poles like eco-tourism, organic agriculture has to be identified to arrest out-migration. Moreover the role of ~~local~~ communities have to be increased in all the cycle of ~~disaster~~ Management from prevention to Rehabilitation.

BCA



Under, local communities' participation is ensured, disaster management is incomplete.

booklet  
Random collector is recruited

प्र० ८(c)

Solid Waste Management is a big issue in Urban cities. It has resulted into air pollution, land pollution and death of animals. It is also a huge health hazard.

### Reasons for problem

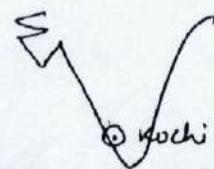
- High amount of waste generated due to use and throw tendency, consumerism
- Indifferent attitude of people towards environment
- NO segregation of waste ~~at source~~
- Informal solid waste workers
- Lack of capability of Urban government to tackle the waste.

### Effective ways

(i) Changing attitude of people → The most preventive step is less amount of waste is generated.

- ✓ Plastic Polythene bag replaced with cloth, jute bag.
- ✓ Reusing of things by donation
- ✓ Use of ceramics instead of disposables in public functions.

Case Study: Kochi  
With efforts of local administration,  
Kochi is now plastic free.



- \* Hotels owners provide a discount on take away if food is taken in utensils
- \* Vendors charge for ~~plastic~~ bags, therefore people get their own bags.

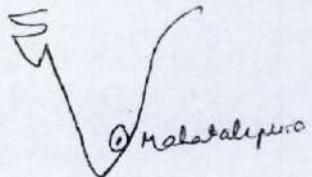
By effective awareness drives and cooperation of all stake holder, solid waste management especially of plastic was ensured.

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(2) Segregation of Waste → Installation of two dustbins at public places and at homes, can make life of waste collectors easier.

Organic waste → compost  
Dry waste - can be recycled

case study: Matalepuram  
With help of Hand in Hand, a NGO,  
this ancient town is able to achieve  
100% segregation



(3) strengthening of Urban governance  
Urban government should be strengthened with training/  
capacity building. Recycled plants should be installed  
to convert ~~waste~~ waste either into energy or other  
products.

(4) Solid Waste Management Rules, 2016 should be  
implemented in letters and spirits to ensure  
effective management.

~~Environment is a common good, therefore, it requires  
participation of all stake-holders.~~

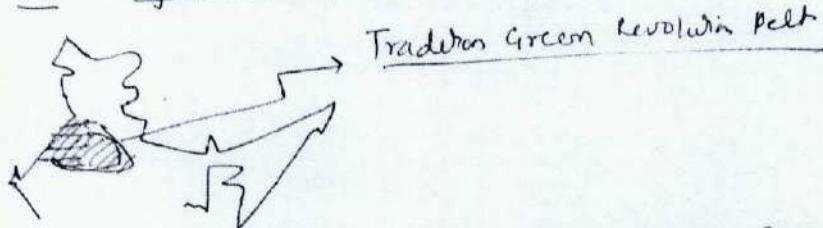
~~Urban areas can further use decentralised composting  
at collective centers like parks etc to bring down  
the burden of urban governments.~~

Kusum project for rural areas serves the same  
benefit.

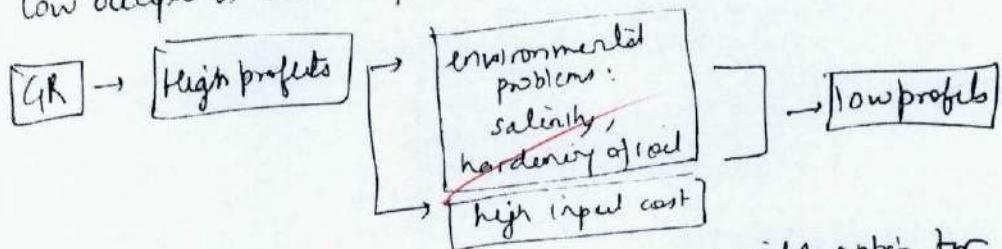
Ans (3)

Rural youth is facing problems of unemployment because

(1) Agricultural productivity is going low



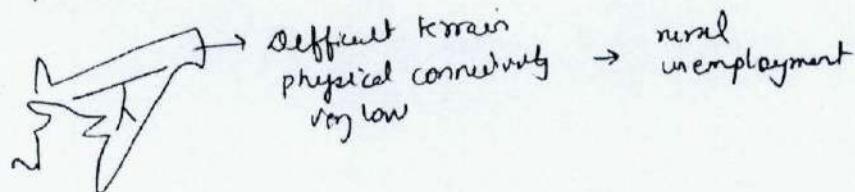
Punjab, Haryana, western UP which have once seen prosperity are now in shambles due to low productivity.  
High input cost of pesticides & fertilizers against the low output is decreasing the profits realization.



Therefore, agriculture has become not a viable option for them. Less skills don't land them jobs in cities.  
Therefore, they remain unemployed.

(2) Non farms sector & Unemployment

Physical linkages (roads), digital connectivity and financial inclusion (availability of credit) is low in rural India. Therefore it is difficult to set up non-farm sector employment.



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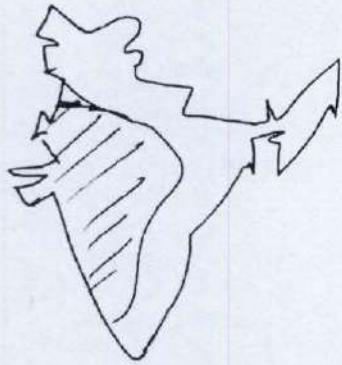
## (3) Growth of service sector in India

Kotter's model of growth advocates for industrial phase after agricultural phase. But India has skipped the stage. Therefore, more labour intensive industries are also not up to the level. On the other hand, Service sector requires English speaking highly skilled youth.

As a result, rural youth migrates to urban areas and do informal low paying jobs like puller, washer or domestic helper.

## (4) Climate Change - Future Threat

With number of wettest day and driest day increasing (Economic Survey 2010), there are added dangers of further hit of unemployment in rural areas.



dry land areas - without irrigation facilities will face a severe hit.

This will further increase the unemployment rates in rural India.

(5) Non availability of basic infrastructure like internet & electricity keep their aspirations low.

Government Slys

Pradhan Mantri Krishi Sinchay Yojna, ASPIRE, Deen Dayal Upadhyay Gramin Kaushal Yojna are some of efforts to eradicate youth unemployment.

Rural areas should be developed on lines of Urban mission to ensure growth of areas with basic infrastructure. This basic infrastructure will itself trigger jobs.

Q9) approached

India shows the highest burden of diseases in non-communicable section. 40% of Indian children are malnourished and 50% of women are anaemic. 70% of the expenditure in Health is out of pocket-expenditure. India Health sector faces a lot of challenge.

(1) Regional disparities(a) Rural - Urban divide

With 70% of Indians reside in rural areas but number of bed is highly skewed in favour of urban areas.

Open defecation in rural areas further increases the incidence of health problems.

(b) Gender divide - Due to traditional mindset of

backward population, 2/3 of the women still

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eat in the last, due to which they suffer from malnourishment. 70% of women do not have access to sanitary napkins as menstruation is a taboo in some parts. Child marriage and home delivery are biggest reasons for high Maternal Mortality Ratio. Therefore, challenge lies in the change in attitude.

### (c) Tribal belts

Sickle cell Anemia, malnourishment are very high among tribals. Remote location, lack of awareness, taboos and genetic disorders become reasons for bad health of tribals.

### (d) Lack workforce

The number of availability of doctors, staff, paramedical palliative care has given space to gaps in healthcare.

### (e) High cost of drugs, additional healthcare and nutritious food.

This further increases the incidence of diseases.

### (f) Environmental Hazards - Air pollution in Urban areas, lifestyle disease like cancer, diabetes' incidence have increased the risk. Therefore, health care has become interdisciplinary subject. A close coordination with urban development is required.

(4) Lack of funds - less than 1% of GDP is spent on the health infrastructure.

### Solution

National Health Policy is a step in right direction.  
It should be followed in letter & spirit.  
National Nutrition Mission is another laudable step in  
direction of wellness of society.  
More work needs to be done in urban Health.

### Ans 3(c)

Smart City does not have any standard definition but it aims for

- provision of basic facilities like drinking water, ~~manages~~ sanitation
- Smart governance which ensures participation of citizens
- using Information & communication technology for enhancing service delivery.

### Approach

a) Regional balance - It has asked the participation from each state. Therefore, it has underlying principle of regional equality.

- ✓ significant progress to remove disparities of North and South states.
- ✓ North Eastern states would be benefitted.

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- (b) Bottom to top Approach - Multi level planning

Cities were asked to give plans and ammortisies were chosen on the bases of the details submitted

- (c) Participation of Private Sector

Private sector's participation is ensured through Special Purpose Vehicle.

This is significant as it will ~~not~~ help in reducing the financial burden of government. More investment from private sector will infuse innovation.

- (d) Sister Cities

Functional classification of cities are used for pairing cities with sister cities in International arena.

This will help in better planning for e.g. Varanasi is linked with traditional way of Japan, Kyoto.

- (e) Good governance

Increasing transparency, participation are all essential components of good governance.

However, the approach can be criticised as.

Balance regional growth is not promised ie smart cities will develop at expense of prosperity in sea of disparities. It will further set up investment, people, innovation from adjoining rural areas in accordance to ~~rule~~ Gunnar Myrdal's cumulative causation model.

Therefore, it is required that smart cities should move in hand in hand with smart villages (Rurban mission) so that prosperity does not remain concentrated to few cities.

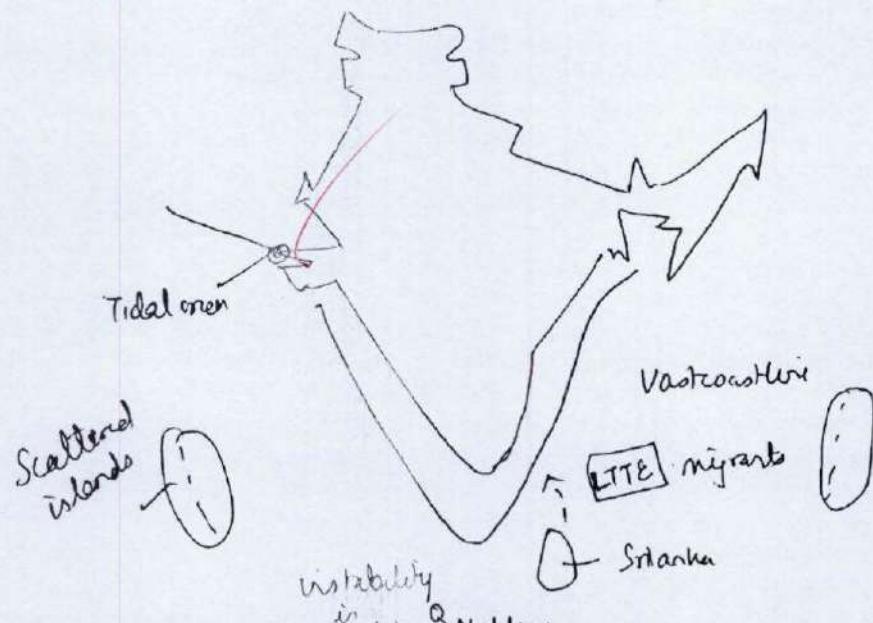
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Ans 4  
(a)

Maritime Security is of utmost importance as 26/11 Mumbai attacks has exposed the vulnerabilities of Indian maritime security.

### Concerns

- ① Vast coastline of 7517 km are difficult to monitor and coordinate.  
Presence of large number of sand bars, islands also make process difficult.
- ② Sir Tidal Creek is a disputed area between India and Pakistan. Its surveillance is particularly difficult as it becomes marshy in monsoon time. In 26/11 attacks, terrorists occupied an Indian boat at this place only.

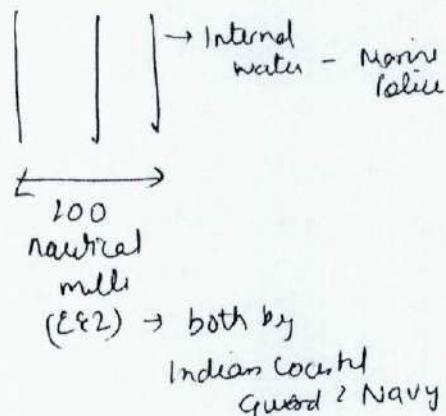


- ③ Internal fears in maldive & Maldives  
Both Sri Lanka and Maldives are not free from political instability. Therefore there are dangers to

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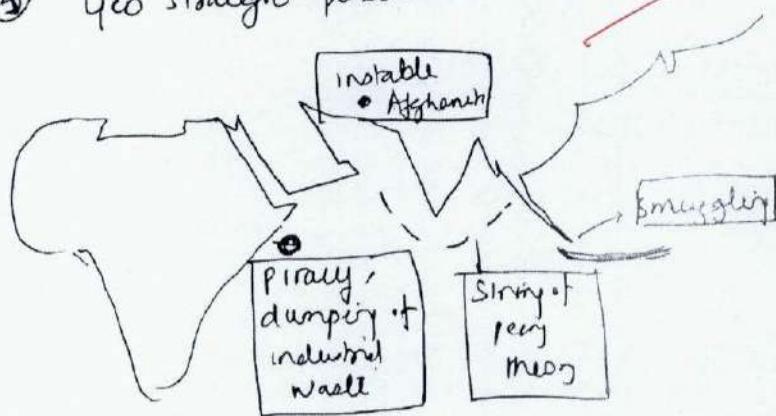
receive LTTE from Sri Lanka and radicalised people from Maldives

## ⑥ Multiple Agencies



IGC, Navy, Police  
force all three are  
responsible. Capacity,  
moderation and coordination  
among them is low

## ⑦ Geo strategic position in Indian Ocean



Indian Ocean is facing a lot of traditional and non-traditional threats like smuggling & piracy, which makes security a more concern for India.

Steps :> India has diplomatic talks to acquire bases in Maldives, Seychelles, Ethiopia etc.

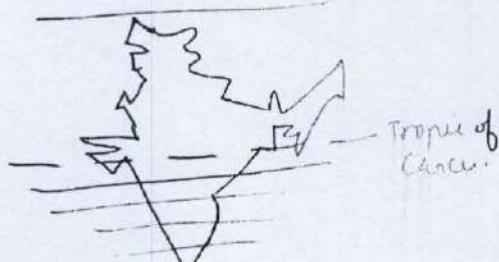
India & France has agreed to run each other bases. By this agreement, India can get access of Reunion Island.

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India is developing chabbar port.  
Multi-faceted  
National efforts  
India has launched jagarmala project which has  
component of Orissa port development at Andaman  
& Nicobar Islands  
Trade  
Control Morris Police Force is also  
on cards.

Ans 4  
(ii)

- Solar energy has acquired a dominant position  
in energy mix due to various reasons
- ① Its aims was higher in National Action Plan  
for Climate Change. 100 GW of solar energy  
has to be created against 75 GW of other energy
  - ② Vast Potential



India is a tropical country, hence  
receiving sunshine adequately.  
Moreover location at tropics  
is more favorable due to  
less cloud cover, hence  
insolation is more at tropic.

India's monsoon season is concentrated in four months,  
therefore ample sunlight can be used during other  
months.

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in this part  
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in this part)

Areas like Rajasthan and Gujarat have high evaporation and also don't have adequate agricultural growth which can inhibit land degradation.

## ③ Climate Change

In the comparison, Wind energy is more susceptible to Climate change but solar ~~energy~~ is not affected by it.

## ④ Decentralised production

Roof top of houses could be used, which is another advantage as other energies could not be decentralised to such a level.

## ⑤ International Solar Alliance has been formulated which will further increase innovation in this area.

## ⑥ Side effects are minimum

Water projects requires deforestation and can cause floods as well. While solar energy does not have any such negative point.

## ⑦ It will increase employment and can aid in removing rural distress

Maintenance of solar equipments requires skilled workforce. Rural unemployed youth can fill the place.

## ⑧ Agricultural labour → Farmer can install solar pumps which will make electricity as well as pump water for them.

Due to these virtues, solar energy is receiving extra sources and investment.

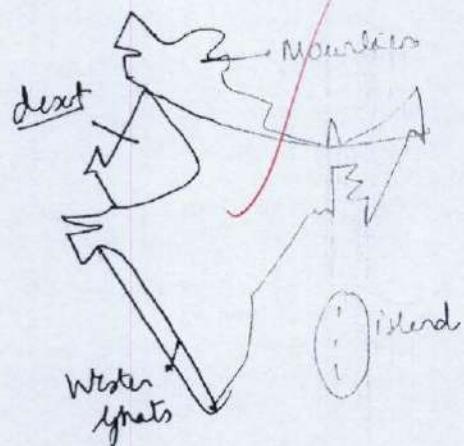
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However, there are impediments like ~~now~~ falling price of solar electricity, USA is disputing at WTO, dependence of India on other countries for silicon and other raw material. China seems to be dumping solar equipments for disrupting local markets. Hence, a ~~comprehensive~~ approach should be followed to get gains wisely.

Ans 4(v)

Tourism is a potential sunrise industry in India which could be game changer if significantly developed.

(a) Vast potential in terms of physio graphic diversity

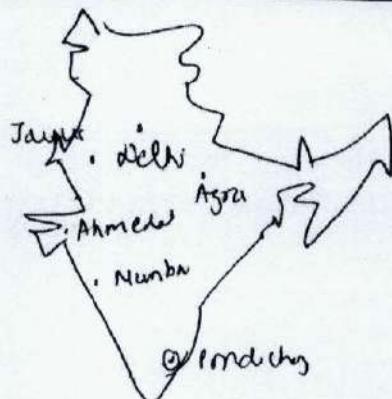


#### Specific attractions

Hill stations like Darjeeling, Shimla  
Shola forest in Western Ghats  
Nimis Island - Meghalaya  
in Brahmaputra  
Limestone caves in  
Gatting in Andamans  
& Nicobar

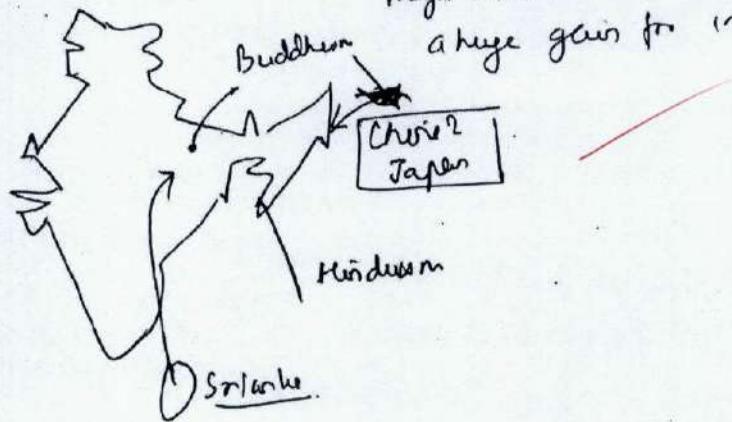
India is endowed with natural as well as cultural wealth.

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Cultural wealth with 35 Unesco's World heritage site

Religious diversity - India is birth place of many religions. Major shrines located in India. This is a huge gain for international tourism.



Significance  
Regional development → North Eastern states, Himalayas etc., Rajasthan can immensely develop due to their natural wealth.

Employment generation in hospitality & related sectors like handicrafts, logistics etc. can reap the benefits of demographic dividend.  
Local people and women employment is preferred under hospitality sector, therefore it would fulfill the aim of inclusive development.

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Soft power - It will further enhance our soft power in India which can be used to tackle the China's hard power.

Economic development - It has multiplier effect on logistics, hospitality, export and industries. Therefore, overall it helps in economic development.

### Steps required

Swadesh darsan scheme based on thematic tourism is an excellent approach towards increasing tourism. As it helps in attracting all genres of tourist as well as help in retaining them longer.

Bed & breakfast scheme should be encouraged as it gives employment to local people.

With Adequate steps for ensuring security and promotion, tourism can be another growth pole.

# U.P.S.C.

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## Coastal Shipping

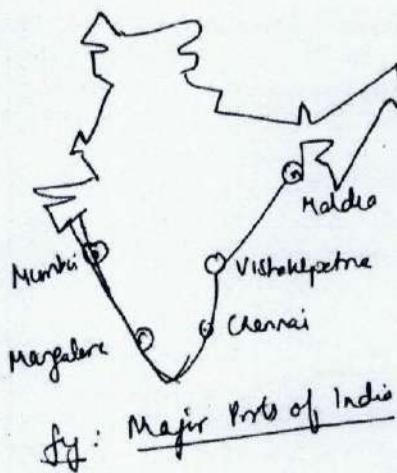
It is one of the transport methods by which trade happens.

Importance - It has gained prominence even more after globalisation. As it can carry huge items in relatively cheaper price from one place to another.

e.g. India receives 90% of trade volume by shipping.

It has emerged as one of the growth poles in country for developed.

e.g. India also launched Sagarmala Project to increase port led development.

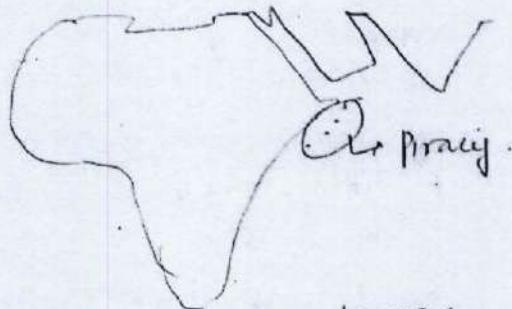


- Threats to Environment
- ✗ Coastal shipping has increased the incidence of oil spilling which effects the marine life.
  - ✗ Moreover, it has increased noise pollution in the sea.
  - ✗ Ballast water cause transfer of alien species.

→ Threats faced by Coastal Shipping

Piracy is one major threat faced by shipping sector.

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Coastal shipping has one of areas of geopolitics with each country trying to dominate. China's string of pearls theory and India's Chabahar port are both evidence of this.

(b)

Rural development - It is highly desired process and it is basis for inclusive development.

### Significance

✓ Sustainability of cities is ensured if rural areas are developed, otherwise migration would continue to happen.

✓ Inclusive development - There is rural-urban disparity which is undesirable, hence it will ensure inclusive development.

✓ Food security → With rural development agriculture would also develop and therefore, food security can be ensured.

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## Government Sops

R Urban Mission along with different schemes for different sectors.

MSME → ASPIRE

Agriculture → Pradhan Mantri Krishi Bhikari Yojna,  
Pardhan Mantri Fasal Bima Yojna

Skills - Deen Dayal Upadhyay Gramin Kaushal  
Yojna.

Electricity - Deen Dayal Upadhyay Gramin Jyoti  
Yojna

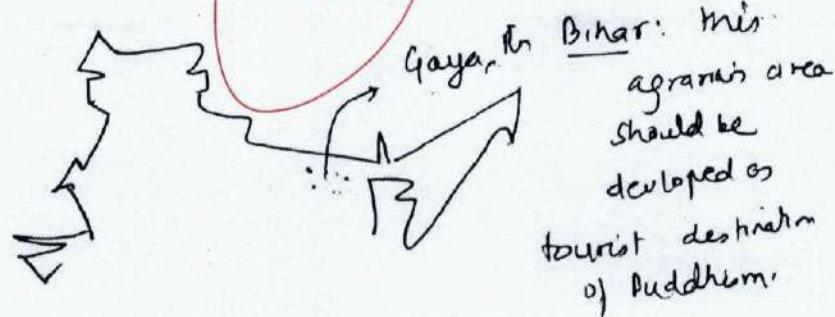
### Further steps required:

Strengthening Multi-level planning and encouraging bottom to top planning.

SHG's - should be given promotion for women empowerment. Kudumbashree model, which has been successful in Kerala should be adopted.

Spatial planning by identifying the growth poles of region should be done.

e.g

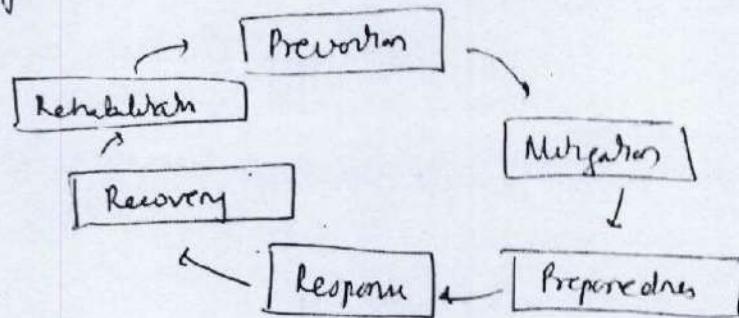


# U.P.S.C.

(C)

## Disaster Management

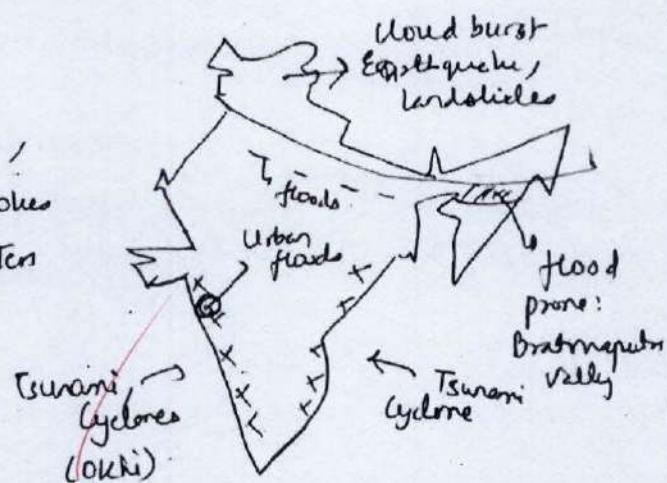
It is a comprehensive cycle of 6 steps as shown in figure



## Significance

India is prone to so many disaster, both natural & manmade. Recently climate change has further increased the frequency of disasters eg kerala floods etc

forest fire, stampede, urban fires, heat strokes are all added disasters



## Prerequisite

- ✓ Disaster Management should include local participation
- ✓ Disaster Management should not be after-thought but rather well integrated in the planning

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## India's disaster Management Architecture

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National disaster Management Act which has bodies at three level - National, State & district. National disaster response force is special force for response and rehabilitation.

### Further Improvements

There is need to increase the blending of traditional knowledge with forecasting system to make prediction better.

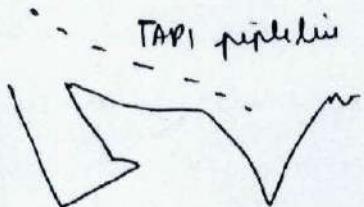
Upgradation of plans should be done timely.

*Self financing work*

d)

### TAPI

It is a pipeline proposed between Turkmenistan, Afghanistan, Pakistan & India.



### Significance

- ✓ India's energy security would be ensured. India heavily depends upon imports for energy needs.
- ✓ It can also develop cooperation between India & Pakistan.

### Threats:

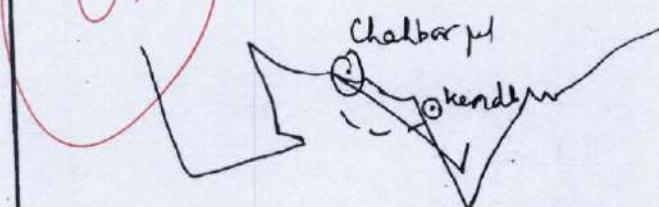
It has not been implemented on grounds due to deteriorating relationship between India & Pakistan. Even, if it comes into existence, it will face threats like terrorism in Pakistan and attack of Taliban in Afghanistan.

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Possible predictions:

TAPI pipeline, however important, but it is very less likely to take shape, especially after the introduction of Chabbar Port in picture.

Chabbar port in Iran can fulfill our energy needs without interference from Pakistan.



(e)

### Biomass energy

Biomass energy is a huge source of energy which is relatively inexpensive and environmental friendly. It has additive gains in form of waste reduction, which is otherwise a big problem in itself.

e.g. - Bengal farmers burning rice straw and this resulted into increased air pollution in delhi.

### Forms of Biomass energy

- + Biofuel
- + Biogas

Potential  
huge livestock  
wealth and  
agrarian society

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## Significance of Biomass energy for rural India

Decentralised Biogas plants can be used for decomposing the Biomass. It will serve three purposes as below.

- 1) It will provide green manure in form of compost which can again reduce the inputs from chemical pesticides and fertilizers.
- 2) It will provide biogas which can be used for energy needs or for selling in markets.
- 3) It will help in cleaning the village premises by converting waste into useful products.  
Cleanliness → disease incidence less.

Urban Areas can also use innovative small biogas plants to recycle their kitchen waste.

Government has announced Efforts 15GW energy from Biomass in its National Action Plan for Climate Change and has opened up centres for conversion of biomass into biofuel. National Biofuel Policy has also mandated increase use of blending.

Further steps  
More innovation with scientific assessment is required for Biomass utilization.

