

## 1. Reasons for growing divorce rates in India

### Relevancy

- GS Mains paper II, IV
- Essay paper, ethics, Sociology optional
- Increasing divorce rate
- Geographical trends

### Introduction

- Divorce is conventionally a taboo subject and considered unacceptable by the guardians of the Indian society.
- But, the recent statistics show that the 'happily ever after' illusion is heading towards demise.
- The divorce rates are growing alarmingly in India.

### Reasons for growing divorce rates in India

- Legally, a marital couple in India can file for a divorce on the grounds of adultery, religion conversion, insanity, renunciation, desertion, domestic violence, leprosy or denial of conjugal rights.
- However there exist several social and lifestyle reasons which push the couples to part their ways.
- **Women empowerment:**
  - Today's woman is educated and financially independent, and doesn't mind voicing her opinion or fighting for her rights.
  - She doesn't want to stay fulfilled, doing only the mundane household chores.
  - She can shoulder the family responsibilities, equally as well as the man of the house.
  - These days, women may want to opt out of their marriage, rather than leading an unhappy married life.
- **Adultery:**

- Adultery is when either partner indulges in sexual intercourse with a person other than his/her spouse.
- It is a criminal offence hence a divorce can be legally filed on basis of adultery.
- **Communication gap:**
  - Most women complain that men give a deaf ear to their feelings and opinions, whereas a majority of men blame nagging as the major cause of poor communication with their spouse.
  - The couples therefore end up in ego clashes, both of them hoping for an equal footing rather than mutually clarifying their concerns.
- **Lack of commitment:**
  - Live-in relationships, social networking, dating websites in the present generation gives plenty of options to choose a new partner and leave the older one.
  - There is no longer a social stigma attached to breakups or divorces.
  - Hectic and complex lifestyles cause anger, frustration and confrontations, which may rock the foundation of the marriage.
- **Family interference:**
  - The joint family structure is crumbling down, and the number of nuclear families is on the rise.
  - Any kind of interference from the spouse's family is often misjudged as the invasion into the marital privacy.
  - Persistent interference can result in couples heading to the court.
- **Forced marriages:**
  - Couples from different religions or castes who go against the parental consent are often unable to bear the societal pressure.
  - The couple may give in and file for a divorce.

## Laws of Marriage and divorce in India

- In India marriage and divorce is governed by a myriad of both religious and secular laws.
- It is influenced by religion and every religion has different set of laws applicable to its followers.

- Hence grounds or possible reasons for divorce differ according to legislation or religion a person comes under.
- **Various laws regarding marriage and divorce are:**
  - Hindu Marriage act, 1956 (Applicable on Hindus, Buddhists, Janis or Sikhs)
  - Indian Divorce act, 1869 (Applicable on Christians)
  - Parsi marriage and divorce act, 1936 (Applicable on Parsis)
  - Special marriage act, 1954 (for secular marriages)
- **IPC Section 498A:**
  - As per section 498A, a woman has a right to seek a divorce, if she is subjugated to a physical or mental torture in her husband's family.
  - While false accusations under the section 498A cases have come into the picture but the legal protection makes it comparatively easier for the victimized women come out of their marriage.

### **Geographical trends of divorce rate in India**

- A study was conducted titled 'Marriage dissolution in India' 2016 which was published in Economic and Political Weekly by Suraj Jacob and Sreeparna Chattopadhyay.
- Study found that there was virtually no difference in dissolution rates (including divorce and separation rates) between rural India (0.82% of the married population) and urban India (0.89%).
- But there exists striking differences in divorce rates between States in India.
- **Example**, several States in the south and the northeast have higher rates of divorce than those in the north.
  - The overall divorce rate for India as a whole is 0.24%.
  - It is the highest as of 4.08% in Mizoram.
  - Amongst the lowest are Tripura at 0.44% and 0.32% in Kerala.
  - The tribal-dominated Chhattisgarh recorded 0.34% and Gujarat 0.63%.
- **North vs. South rates**
  - In States where rates are higher the patriarchal norms are less entrenched.

- The women have greater workforce participation and support from their natal family.
- Therefore their socio-economic penalty of divorce is lower.
- Among the northern States, Bihar, Uttar Pradesh and Haryana had particularly low rates of marriage dissolution.
- Also, according to the official records, the 'separated' population in India is three times the divorced population.
- This is due to the fact that divorce is likely to be reported as separation and not a divorce because of the stigma associated with it.
- Otherwise the real figures for divorce are likely to be higher according to the study.
- Secondly, women reported divorce three times more than men.
- Women, especially those with children do not remarry as frequently as men could be a reason behind this.

### **India's stand internationally?**

- India stands somewhere in the middle as compared internationally when it comes to divorce.
- The divorce rate is as low as 0.04% in Georgia.
- It is also as high as 0.46% in Belarus.
- While in India the divorce rate is 0.11% (of the total population).

### **Conclusion**

- Accurate reason could not be calculated for the increase in divorce rates over time.
- It is such because the 2001 census data looks at divorce and separation together, while the 2011 census presents them separately.
- Nevertheless, marriages have become less important and sacred and divorce has started being widely accepted in the Indian society.

## 2. Disaster Management Support Programme in India

### Relevancy

- GS Prelims, GS Mains paper III
- Geography, Environment, Disaster management
- DMS Programme in India

### India's vulnerability to disasters

- India has been traditionally vulnerable to natural disasters on account of its geo-climatic conditions.
- Floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena.
  - About 60% of the landmass is prone to earthquakes of various intensities.
  - Over 40 million hectares is prone to floods.
  - Close to 5,700 km long coastline out of the 7,516 km, is prone to cyclones.
  - About 68% of the cultivable area is susceptible to drought.
  - The Andaman & Nicobar Islands, the East and part of West coast are vulnerable to Tsunami.
  - The deciduous/ dry-deciduous forests in different parts of the country experience forest fires.
  - The Himalayan region and the Western Ghats are prone to landslides.

### Disaster Management Support Programme

- Under this programme the services of aerospace infrastructure set up by ISRO are optimally synthesized to provide data and information required for efficient management of natural disasters in the country.
- Core elements of the observation Systems for disaster management are:
  - The Geostationary satellites (Communication and Meteorological)
  - Low Earth Orbiting Earth Observation satellites
  - Aerial survey systems together with ground infrastructure

- The Decision Support Centre established at National Remote Sensing Centre (NRSC) of ISRO is set for monitoring natural disasters such as flood, cyclone, agricultural drought, landslides, earthquakes and forest fires at operational level.
- The information generated from aero-space systems are disseminated to the concerned in near real time for aiding in decision making.
- The value added products generated using satellite imagery helps in addressing the information needs covering all the phases of disaster management such as:
  - preparedness
  - early warning
  - response
  - relief
  - rehabilitation
  - recovery
  - mitigation

## **Flood**

- India is one of the most flood prone countries in the world as floods occur in almost all river basins in India.
- Twenty-three of all states and union territories in the country are subject to floods.
- 40 million hectares of land which is roughly one-eighth of the country's geographical area, is prone to floods.
- Assessment of the extent of flood affected areas and the damage to the infrastructure will enable the decision makers to plan for relief operations.
- Satellite based imageries are the best tool to assess the extent of flood affected areas.
- Both optical and microwave satellites data is being used.
- The inundation maps with flooded and non-flooded areas marked in different colours along with the affected villages and the transport network are disseminated to the concerned Central / State agencies.

- Using historical data of floods affecting flood hazard zonation is being carried out and district level hazard atlases have been prepared for Assam and Bihar States.

## **CYCLONE**

- India has a coastline of about 7516 kms and it is exposed to nearly 10% of the world's tropical cyclones.
- About 71% of this area falls in ten states (Gujarat, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Puducherry, Andhra Pradesh, Orissa and West Bengal).
- The islands of Andaman, Nicobar and Lakshadweep are also prone to cyclones.
- On an average five or six tropical cyclones form in the Bay of Bengal and Arabian sea and hit the coast every year.
- When a cyclone approaches to coast, a risk of serious loss or damage arises from severe winds, heavy rainfall, storm surges and river floods.
- Using appropriate satellite data ISRO is supporting the efforts of India Meteorological Department to predict the tropical cyclone track, intensity and landfall.
- After the formation of cyclone its future tracks are monitored and predicted on an experimental basis at ISRO.
- Using the wind pattern generated by the Oceansat-2 Scatterometer data models have been developed for predicting the formation of a cyclone even before the depression turns into a cyclone.
- Such predictions are being carried out for all the global cyclones and uploaded to the portal.

## **Agricultural Drought**

- Around 68% of the country is prone to drought in varying degrees.
- Of the entire area 35% receives rainfall between 750 mm and 1125 mm which is considered as drought prone.

- 33%, receives rainfall less than 750 mm, which is considered to be chronically drought prone.
- Satellite data covering larger areas is used to monitor the prevalence, severity, persistence of agricultural drought at state/ district/ sub district level during kharif season (June to November).
- The methodology developed by ISRO is institutionalized by setting up Mahalanobis National Crop Forecasting Centre (MNCFC) under the Ministry of Agriculture.

### **Forest fire**

- Nearly 55% of the total forest cover in India is prone to fires every year.
- An estimated annual economic loss of Rs.440 crores is reported on account of forest fires over the country.
- These have environmental significance in terms of tropical biomass burning.
- It produces large amounts of trace gases, aerosol particles, and play a pivotal role in tropospheric chemistry and climate.
- Active forest fires are detected from the satellite images and the information is uploaded daily to the Indian Forest Fire Response and Assessment System (INFFRAS) website.
- The forest fire season is from February to June.

### **Landslide**

- Remote sensing data helps in landslide inventory mapping both at local and regional level.
- It is also used for generating maps such as lithology, geological structure, geomorphology, land use / land cover, drainage, landslide scarp, etc.
- These maps are combined with other terrain maps like slope, slope aspect, slope morphology, rock weathering and slope-bedding dip relationship in GIS environment to map the vulnerable areas for landslides.
- Department of Space has prepared Landslide Hazard Zonation maps (LHZ) along tourist and pilgrim routes of Uttaranchal and Himachal Pradesh, Himalayas and in Shillong-Silchar-Aizwal sector.



- All the major landslides are being monitored for damage estimation under DMS programme.

### **Earthquakes**

- Remote Sensing and GIS provide a database to form a hazard map.
- The area affected by earthquakes are generally large but they are restricted to certain regions (Plate contacts).
- Satellite data gives overview of the area affected by the disaster.
- These data is made use to create a very large scale base information of the terrain for carrying out the disaster assessment and for relief measures.

### 3. What is a poverty line?

#### Relevancy

- GS Prelims, GS Mains paper II, III
- Poverty line, Economy
- Ragarajan, Tendulkar panel

#### What is a poverty line?

- Poverty line indicates the level of income to meet the minimum living conditions.
- It is the amount of money needed for a person to meet his everyday basic needs.
- It is defined as the money value of the goods and services needed to provide basic welfare to an individual and his family.
- Poverty line differs from country to country depending upon their idea of poverty that is poverty is a 'relative' term.
- In developed countries, there is advanced standard of living and welfare concepts therefore poverty line is high as basic standard to live include higher consumption requirements and accessibility to many goods and services.
- Whereas in many less developed countries the basic requirements are low and contain mostly essential consumption items needed to sustain life.
- Which means that poverty line is set by the welfare standard in a particular society or their economy.

#### History of poverty line construction

- The poverty estimation methodology was revised many times with new expert group/task force appointed by the Planning Commission.
- Each expert group/task force devised certain methodology in determining the poverty line according to the parameters of the time.
- For measuring poverty usually a poverty line is set based on different parameters.

- The poverty line is the level of income needed to meet the minimum standard of living.
- People who have income less than this are considered as 'Below poverty line' (BPL) and people above it are called 'Above poverty line' (APL).

### **Poverty line in India**

- India is having a well-designed poverty measurement mechanism.
- The concept about minimum consumption standards and consumption levels changed based upon recommendations of the various expert groups/task force.
- These expert groups used the NSS (National Sample Survey) to estimate the consumption pattern of households from time to time.
- The NSS periodically makes extensive household surveys on expenditure.
- From the consumption basket of the people, the expert groups pick up the most essential commodities and place them under a poverty line basket (PLB).
- Minimum standard of living is thus expressed as the basket of goods and services commonly used by the people.
- Based on this consumption pattern, the Expert Groups estimate the minimum consumption levels (and the income needed to buy these).
- Also they make an attempt to calculate the income needed to obtain these goods and services in both rural and urban areas.
- Hence, this income level acts as the poverty line.
- The Planning Commission was the nodal agency for estimation of poverty in India.
- Now NITI Aayog has come to replace the Planning commission.
- For setting poverty line and method of its construction, the Planning Commission appointed Expert Groups from time to time.
- The Rangarajan Committee is the latest among those Expert groups.

### **Poverty line methodology**

- Extending from the first attempt to set a poverty line which is the Working Group of 1962 to the Rangarajan Task Force (2014) the poverty estimation methodology has undergone an evolution in India.
- Poverty is measured in terms of the Head Count Poverty Ratio (HCPR) as in several other countries.
- The HCPR is the percentage of the population living under the poverty line.
- Hence it is the absolute poverty that is estimated in India.
- Poverty ratio is measured in terms of per capita consumption expenditure over a month.

### Earlier poverty lines of India

- **Suresh Tendulkar panel:**
  - According to this panel, those spending at least Rs 27 in rural and Rs 33 in urban areas daily in 2011-12 were identified as being above the poverty line.
  - It led to a public outcry as these numbers were considered unrealistic and too low.
- **C Rangarajan panel:**
  - It was set up to review the Tendulkar line.
  - The Rangarajan expert group separates the baskets for rural and urban areas, unlike the Tendulkar Committee.
  - It contains a food component that satisfies certain minimum nutrition requirements, and normative level of consumption expenditure for essential non-food item groups (education, clothing, conveyance and house rent) besides a residual set of behaviourally determined non-food expenditure.
  - In the absence of any other normative criteria, the median fractile class expenditures were treated as the norm.
  - Based on the analysis presented in the expert group report, monthly per capita consumption expenditure of Rs 972 in rural areas and Rs 1,407 in urban areas is treated as the poverty line at the all-India level.

- Assuming five members for a family, this will imply a monthly per household expenditure of Rs 4,860 in rural areas and Rs 7,035 in urban areas.
- The expert group estimates that 30.9 per cent of the rural population and 26.4 per cent of the urban population were below the poverty line in 2011-12.
- The all-India ratio was 29.5 per cent.

### **Upcoming Poverty line of India**

- The government may soon come out with a new definition of poverty, with the Niti Aayog likely to set up a panel of experts to formulate a new poverty line.
- The new line, which will be different from the existing Tendulkar line and Rangarajan line, will also be based on the latest consumption expenditure survey.
- **Reasons:**
  - To set a target for poverty reduction while preparing its first 15-year vision document and 7-year strategy paper, which have replaced the 5-year plan.
  - Also, to measure the impact of the government's anti-poverty schemes and other welfare initiatives.

## Impact of climate change on agriculture

### Relevancy

- GS Mains paper III
- Agriculture and climate change
- Water availability, global warming
- Causes, alternatives

### Introduction

- Crops like rice, wheat, maize and sorghum are the badly hit by extreme weather events.
- Crops like soybean and gram are likely to benefit from higher level of CO<sub>2</sub> in atmosphere which helps in CO<sub>2</sub> fertilisation.
- India is surviving with around 1700-1800 cubic metres of water per capita per year.
- It is about to become a water-stressed region with this water capacity.
- Rising temperature affects flowering in crops and lead to pest and disease buildup.
- Flood and excess rain due to change in climate over a short duration of time cause extensive damage to crops.
- Extreme weather events have become quite frequent and agrarian experts and scientists are focusing on natural farming to arrest the impacts of climate change.

### Impact of climate change on agriculture

- Climate change affects the major three aspects of food security:
  - Availability
  - Access
  - Absorption

- As and when production decreases the availability of food decreases.
- Climate change hits poor the most and as they don't have income to buy the food, so their access to it is affected.
- Therefore it has an impact on health and affects absorption.
- According to the scientists, climate change has about 4-9 per cent impact on agriculture each year.
- As agriculture contributes 15 per cent to India's GDP, climate change causes about 1.5 per cent loss in GDP.

### **How different crops react to climate change**

- **Effect on yields:**
  - Rice, wheat, maize and sorghum are the worst hit by climatic change phenomenon.
  - According to various studies, by 2030 rice and wheat are likely to see about 6-10 per cent decrease in yields.
  - Climate change will have a neutral or positive impact on crops like potatoes, soybean, chickpea and mustard.
  - But this positive impact is "conditional and short-term" because such are to benefit from higher level of CO<sub>2</sub> in atmosphere, which helps in CO<sub>2</sub> fertilisation.
  - But the positive effects are unlikely to last more than 10-15 years.
- **Geographical effects:**
  - Also, much depends on the net sown area and the geographical location of a region where a particular crop is sown.
  - For example mustard will experience a neutral-to-positive impact in northern India, especially in Punjab and Haryana, where winter temperature is very low.
  - A 1°C rise in temperature won't have much impact on production but a similar rise in temperature in eastern and central India will have a negative impact.
- **High level CO<sub>2</sub> impacts:**

- Potato production will be positively impacted by elevated CO<sub>2</sub> concentration.
- Scientists say that potato yield will increase by 11.12 per cent at elevated CO<sub>2</sub> of 550 PPM and 1°C rise in temperature.
- However, further increase in CO<sub>2</sub> with a likely rise in temperature by 3°C will result in decline in production by 13.72 per cent in the year 2050.
- **Seasonal changes:**
  - Kharif crops will be affected more by rainfall variability while Rabi crops by minimum temperature.
  - Wheat is negatively impacted in Rabi season due to terminal heat stress with 1°C rise in temperature and results in loss of 4 metric tonnes (MT) of wheat.
  - Similarly, legumes might benefit because of elevated level of atmospheric CO<sub>2</sub>.

### **Change in water availability and demand**

- Though the total rainfall or average rainfall has not changed significantly but there is an issue of increased water use.
- Increased demand-supply gap has led to the perception that rainfall is decreasing.
- An area is said to be water-stressed when annual water supplies drop below 1,700 cubic metres per person per year.
- We are surviving with around 1,700-1,800 cubic metres per year as of now and soon there will be extreme shortage of water.
- Much of the prosperity in the last two decades in India and globally is because of groundwater exploitation.
- Demand for water has increased drastically over the years but per capita water availability has hit a low.
- Change in food habits is also responsible for exploitation of water as more water is required to produce the kind of food we prefer nowadays.



- Until a few years ago we used local foods like wheat but now half of urban India is depending on packaged Atta or wheat.
- This packaged good quality wheat is produced in Madhya Pradesh, transported to Bengaluru, packed there and sold in Jammu.
- In the process, thousands of miles of transportation consume lot of fuel and energy which adds up to cost as well.

### India and global warming

- Despite our lifestyle India is doing better in causing global warming.
- Americans produce 17.8 tonnes carbon per capita per year, whereas India is far behind at about 1.78 tonnes per capita per year.
- But due to high population the overall emissions in India are very high.

### Alternatives and mitigation strategy

- India can produce enough food using natural farming, like using climate-tolerant crop varieties like the '**Swarna rice**':
  - This variety of rice is considered tolerant to water logging and was used to be grown in India in the past.
- **Others:**
  - Efficient water and nutrient management options to enhance use efficiency
  - Evaluation of carbon sequestration potential of different land use systems
  - Understanding opportunities offered by conservation agriculture and agro-forestry
  - Identifying cost-effective methane emission reduction practices in ruminants and in rice paddy

