



## Celebrating Earth Day, 2024

This editorial is based on [“Preparing India for water stress, climate resilience”](#) which was published in The Hindu on 22/04/2024. The article discusses the celebration of Earth Day 2024 and highlights efforts to address the water crisis, advancements in the Andaman and Nicobar Islands, and the necessity of a policy framework encompassing gender, climate, nutrition, and food value chains.

**For Prelims:** [Indian Meteorological Department \(IMD\)](#), [Earth Day](#), Council on Energy, Environment and Water (CEEW), [UN World Water Development Report 2020](#), International Water Management Institute (IWMI), [Atal Mission on Rejuvenation and Urban Transformation \(AMRUT\) 2.0](#), [Corporate Social Responsibility](#), [Andaman and Nicobar archipelago](#).

**For Mains:** Significance of The Earth Day, 2024 in conservation of Biodiversity and Environment.

As the [India Meteorological Department \(IMD\)](#) predicts a hotter summer and longer heat waves in 2024, India must also prepare for water stress. The challenge is that citizens are programmed to consider acute stresses (heat, water, or extreme weather) as temporary, to be handled often as disaster relief. There is a need to move from panic reactions when disaster strikes (like the water crisis in Bengaluru), to understand and respond to the chronic nature of risks we face. Moreover, climate action cannot be left to a few sectors or businesses. Nor can environmental sustainability be reduced to sapling plantation drives over a few days.

It also involves the preservation of tribal strongholds such as [Andaman and Nicobar Islands](#). For millennia, these historically isolated indigenes have relied on these islands as resource reservoirs for sustenance and protected them. This [Earth Day](#) (April 22) should be a wake-up call. The climate is the economy now, and the economic production frontier will expand or shrink depending on how we understand the intersections between land, food, energy and water.

Although India aims to achieve [Net Zero GHG emissions by 2070](#), mainly led by a massive transition to large-scale renewable energy, the implications of such a transition on developmental or sustainability outcomes are unclear at the local and national levels.

### What is Earth Day?

#### ▪ Background:

- Earth Day was first observed in 1970 when around 20 million took to the streets to protest environmental degradation on the call of US Senator Gaylord Nelson.
- The event was triggered by the 1969 Santa Barbara oil spill, as well as other issues such as smog and polluted rivers.
- In 2009, the [United Nations](#) designated 22nd April as 'International Mother Earth Day.'

#### ▪ About:

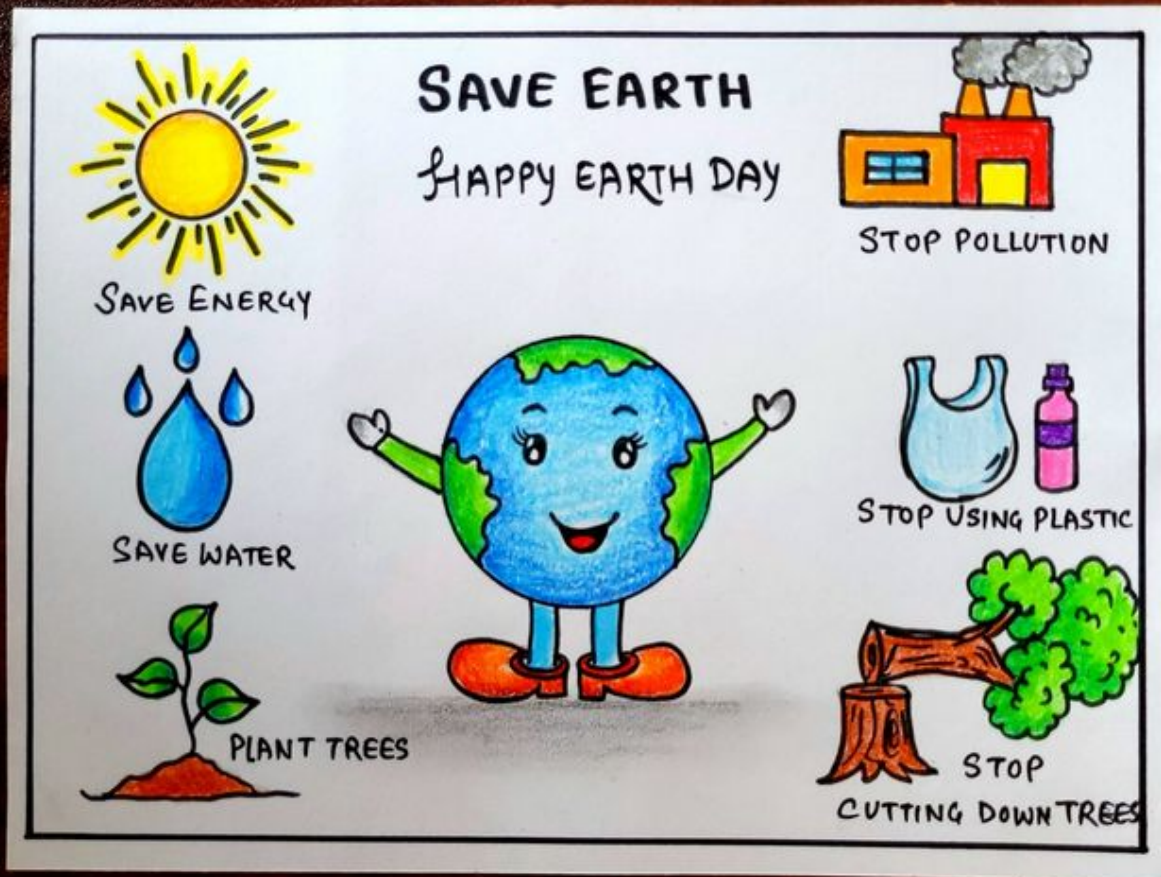
- Earth Day is now globally coordinated by EARTHDAY.ORG, which is a non-profit

organization. It was formerly known as Earth Day Network.

- It aims to “build the world’s largest environmental movement to drive transformative change for people and the planet”.
- The landmark [Paris Agreement](#), which brings almost 200 countries together in setting a common target to reduce global greenhouse emissions, was also signed on Earth Day 2016.

▪ **Significance:**

- It recognizes a collective responsibility, as called for in the [1992 Rio Declaration \(Earth Summit\)](#), to promote harmony with nature and the Earth to achieve a just balance among the economic, social and environmental needs of present and future generations of humanity.



**Note:**

▪ **Other Important Days:**

- 22<sup>nd</sup> March: [World Water Day](#)
- 22<sup>nd</sup> May: [World Biodiversity Day](#)
- 5<sup>th</sup> June: [World Environment Day](#)
- **2nd August, 2023:** [Earth Overshoot Day](#) (This day Varies across the years)

▪ **Earth Hour:**

- [Earth Hour](#) is the [World Wildlife Fund for Nature \(WWF\)](#)'s annual initiative that began in 2007. It is held every year on the last Saturday of March.
- It encourages people from more than 180 countries to switch off the lights from 8.30 pm to 9.30 pm as per their local time.
- It seeks to raise awareness about [climate change](#) and the need to save the environment.

## What are the Various Facets of Water Crisis Witnessed in India?

### ▪ **Water Flowing Through the Economy:**

- Precipitation is the primary source of soil moisture and water stored in vegetation (green water) and the water available in rivers and aquifers (blue water). Both blue and green water impact the food we grow — irrigating crops, influencing harvests, and being critical to the economy.
- The India Employment Report 2024 shows that agriculture still employs around 45% of the population and absorbs most of the country's labour force. At the same time, a Council on Energy, Environment and Water (CEEW) study showed that monsoon rainfall is changing patterns in India, with 55% of 'tehsils' or sub-districts seeing a significant increase of more than 10% in southwest monsoon rainfall in the last decade, compared to the previous three.
  - But this increased rainfall is frequently coming from short-duration, heavy rain, affecting crop sowing, irrigation and harvesting. Making the agricultural sector more resilient to climatic and water stresses matters for jobs, growth and sustainability.

### ▪ **Climate Crisis and its Impact on Hydrometeorological Disasters:**

- According to the [UN World Water Development Report 2020](#), almost 75% of natural disasters in the last two decades were related to water. According to CEEW analysis, between 1970 and 2019, the number of flood associated events (such as landslides, thunderstorms and cloud bursts) increased by up to 20 times in India. Freshwater, one of the nine planetary boundaries, has been transgressed.

### ▪ **Multidimensional Connotation of Water Crisis:**

- The water crisis can be classified as either physical or economic, stemming from a variety of factors including rapid urbanization, industrialization, unsustainable agricultural methods, climate change, unpredictable rainfall patterns, excessive water consumption.
- Apart from those, inefficient water management, pollution, insufficient infrastructure, a lack of stakeholder engagement, and runoff exacerbated by heavy rainfall, soil erosion, and sediment buildup also play significant role.

### ▪ **Issues of Water Stress:**

- According to the World Resources Institute, 17 countries face 'extremely high' levels of water stress which is threatening to result in conflict, unrest and peace among people. India is not an exception to these problems.
- In India, water availability is already low enough to be categorised as water stressed, and is expected to reduce further to 1341m<sup>3</sup> by 2025 and 1140m<sup>3</sup> by 2050. Also, 72% of all water withdrawals are for use in agriculture, 16% by municipalities for households and services, and 12% by industries.

### ▪ **Groundwater Table Depletion:**

- In almost every State and in the main cities of India, there is groundwater table depletion. The example of Bengaluru is one prominent example. In Punjab, Rajasthan, Delhi and Haryana, the ratio of groundwater consumption to availability is 172%, 137%, 137% and 133%, respectively, which is cause for alarm.
  - In contrast, in Tamil Nadu, Uttar Pradesh, Gujarat, Madhya Pradesh and Maharashtra, it is 77%, 74%, 67%, 57%, and 53%, respectively. Most perennial rivers/streams now have intermittent flows or have run dry. In most areas after April-May, there is Less water availability even for drinking and other uses.

### ▪ **Lack of Streamlined Approach Across Domestic and Agricultural Domains:**

- The government's emphasis on '[Per Drop More Crop](#)', 'Gaon ka pani gaon mein', 'Khet ka pani khet mein', 'Har Medh per ped' under various programmes such as the [Pradhan Mantri Krishi Sinchayee Yojana \(PMKSY\)](#), watershed management, [Mission Amrit Sarovar](#) and the [Jal Shakti Abhiyan](#), etc adopts a siloed approach vis-a-vis domestic and agricultural uses.
  - In this scenario, it is mandated to adopt a comprehensive and synchronized localist interventions tailored to the needs of different regions and States that provides equal emphasis on all aspects of water usage and conservation.

### ▪ **Continuous Encroachment on Catchment Areas:**

- Small water bodies such as lakes, ponds, and streams are under constant threat due to encroachment on their catchment areas. As urbanization expands, people are building houses, commercial buildings, and other infrastructure in and around the catchment areas



of these water bodies.

- The urban agglomeration witnessed from the 1990s has severely impacted SWBs, turning many of them into dumping grounds. The Standing Committee on Water Resources (2012-13) underlined in its 16th report that most of the water bodies in the country were encroached upon by State agencies themselves.

## What are the Different Steps Required for Mitigating the Water Crisis?

### ▪ **Effective Water Governance:**

- Effective water governance needs policies that recognise its interactions with food and energy systems. However, CEEW and International Water Management Institute (IWMI) analysis shows that although India has adopted several policies, most do not recognise this nexus while planning or at the implementation stage.
  - For instance, while the scaling up of [green hydrogen](#) is desirable, the link with water availability is not always considered. Similarly, the impact of scaling up [solar irrigation pumps](#) on groundwater levels must be analysed to deploy the technology where there is an optimal mix of solar resource and higher groundwater levels. Policies should incorporate the food-land-water nexus through localised evidence and community engagement.

### ▪ **Sustainable Use of Blue and Green Water:**

- India needs to focus on the judicious use of blue and green water through water accounting and efficient reuse. The [National Water Mission](#) targets increasing water use efficiency by 20% by 2025. Similarly, the [Atal Mission on Rejuvenation and Urban Transformation \(AMRUT\) 2.0](#) calls for reducing non-revenue water, which is lost before it reaches the end user, to less than 20% in urban local bodies.

### ▪ **Leveraging Financial Tools for Climate Adaptation:**

- Leverage financial tools to raise money for climate adaptation in the water sector. Following global trends, India's climate action has been largely focused on mitigation in the industrial, energy, and transport sectors.
- Financial commitments for climate change adaptation in the water and agriculture sectors are still relatively small. In 2019-20, for which aggregate estimates are available, the per capita annual spending on climate change mitigation was about Rs 2,200, whereas for adaptation, it was only Rs 260.

### ▪ **Adopting Judicious Mix of Traditional and New Technologies:**

- A large amount of India's food grains is from the rainfed region. The Government lays stress on having a judicious mix of 'traditional indigenous and new technologies to improve soil health and conserve water' and pitched for the efficient use of every drop of water. Hence, paying attention to these points is important.

### ▪ **Emphasizing Both, Quality and Quantity:**

- Enhancing water availability with respect to quantity and quality and blue and green water is vital since water is more than just a basic human right. Water is also an instrument of peace-building and enhances the overall quality of life. Promoting sustainable agricultural production, ensuring water security and maintaining environmental integrity are increasingly becoming important issues.

### ▪ **Adopting Different Resource Conservation Measures:**

- Water Crisis mitigation can be made possible by adopting different resource conservation measures in general and rainwater harvesting (in-situ and ex-situ) and ensuring roof top rainwater harvesting in particular.
- Rain water harvesting (RWH) enables resilience against water scarcity and drought by augmenting recharge and aiding irrigation. The optimum use of surface water by large-scale RWH structures, conjunctive use with groundwater And safe reuse of waste water are the only viable solutions to boost and maintain the current level of food grain production.

### ▪ **Need for a Protocol for Revival of Water Bodies:**

- There is the need for a protocol of the revival of ponds/waterbodies. To tackle all these problems there is a great need to study the condition of every waterbody, its water availability, water quality and the state of ecosystem services it supports. There is a need also to create more waterbodies and their revival in every village by looking into the catchment-storage-command area of each waterbody.

# What Does the Earth Day, 2024 Signify for the Tribal Population in Andaman & Nicobar Islands (ANI)?

## ▪ Concerns:

### ◦ **Disregard of Indigenous Land Ownership and Management Systems:**

- In May 2022, in complete disregard of the indigenous land ownership and management systems, the [Andaman and Nicobar \(A&N\)](#) administration issued three public notices, announcing its intention to create three wildlife sanctuaries: a coral sanctuary at Meroë Island, a megapode sanctuary at Menchal Island, and a leatherback turtle sanctuary on Little Nicobar Island.

### ◦ **Lack of Consultation and Coordination:**

- Approximately 1,200 southern Nicobarese inhabit Patai Takaru (Great Nicobar Island), and Patai t-bhi (Little Nicobar Island), holding traditional rights over both inhabited and ostensibly “uninhabited” islands. Yet, the A&N administration neither consulted nor informed the southern Nicobarese of its plans.

### ◦ **Usurpation of Tribal Rights:**

- In mid-July, 2022, the A&N administration issued an order asserting that it did not receive any claims or objections from any individual regarding the land and marine areas within the three proposed sanctuaries; that no individual enjoys any rights within the boundaries of the proposed sanctuaries. And, that there will be “restriction on the people of neighbouring area to enter into these islands... in the national interest.”

### ◦ **Denotification of the Galathea Bay Wildlife Sanctuary:**

- The announcement of wildlife sanctuaries coincided with growing scrutiny and criticism from experts over the denotification of the Galathea Bay Wildlife Sanctuary for a ₹72,000-crore mega project on Great Nicobar, a [UNESCO Biosphere Reserve](#).
  - Establishing exclusionary conservation areas in a region, which is already a paradise for biodiversity, stems from the fact that the champions of the mega project are aware of the extensive environmental and social damage that the project will entail.
  - It will devastate about eight to 10 lakh evergreen forest trees, smother and gouge out scores of coral reefs found along Galathea Bay, destroy the nesting site for the globally endangered [Leatherback sea turtle species](#), devastate hundreds of nesting mounds of Nicobar Megapodes, and kill as many crocodiles.

## ▪ Suggestions:

- **Balanced Development:** Militarising ANI and infrastructure and developmental projects will not doubt aid India’s strategic and maritime capabilities, but such development should not come at the cost of the ruthless exploitation of Biodiversity hotspot i.e ANI.
- **Sustainably Developing ANI:** Given its economic, ecological & environmental constraints and the laws to protect the indigenous tribes, the Andaman and Nicobar Islands will have to be first developed sustainably in order to maximise its economic and military potential.
  - **A sustainable island development framework is not only important for the ANI but will also be applicable and of interest to other island nations across the Indian Ocean.**
- **Sister Islands:** Reunion is the most developed island territory among the above-mentioned four island territories, with a framework that supports both the island’s economic needs as well as France’s military priorities in the Indian Ocean.
  - Taking from the idea of “sister cities”, the framework of “sister islands” can be formed.
  - India and France should lead an effort, utilising their island territories of Andaman and Reunion in developing a concept of sister islands aimed at creating a foundation for a sustainable model for island development across the Indian Ocean.
  - Similar to sister cities, a sister island concept would allow India and France to co-develop a sustainable framework for island development.
- **India’s Development Plans in Indo-Pacific:** If India is to invest in capacity building initiatives and maritime projects in the [Indian Ocean](#), there is a need to research and create an island model for development. Such an approach also creates a new avenue for

Indian-led initiatives in the [Indo-Pacific](#).

- As India and its partners compete for access and influence across the Indo-Pacific toward achieving common interests, there is a need to engage with and address regional concerns and challenges of strategically located island nations.
- **Role of IOC:** [Indian Ocean Commission \(IOC\)](#) is the only island driven organisation in the Indian Ocean. It plays an important role in voicing the concerns and challenges of the islands of the western Indian Ocean.
  - France recently took over as the Chair of the IOC. India in 2020, formally joined the group as an Observer.
  - It provides an opportunity for both the countries to lead an island-focused development model.
  - India could also borrow lessons from France's island experiences in both the Indian Ocean as well as in the Pacific.

## Note:

### Andaman and Nicobar Islands:

#### History:

- India's association with Andaman and Nicobar Island dates back to the aftermath of the 1857 War of Independence when the British established a penal colony for Indian revolutionaries.
- The islands were occupied by the Japanese in 1942 and later became the first part of India to be liberated from British rule in 1943 when [Netaji Subhas Chandra Bose](#) visited Port Blair.
- After the Japanese surrender in 1945, the British reoccupied the islands. On the eve of Independence islands were given to India.
- In 1962, a naval garrison was established due to concerns about a Chinese submarine. In 2001, the Andaman Nicobar Command (ANC) was established in Port Blair after the post-Kargil War security review, marking India's first joint and Unified operational command.
- The ANC is India's first joint/unified operational command, placing forces from all three services and the [Coast Guard](#) under a single commander-in-chief.

#### Key Facts:

- The **Ten Degree Channel** is a narrow strait that separates the Andaman Islands from the Nicobar Islands. It is located approximately at the 10-degree latitude mark.
- Indira Point is the southernmost tip of the Nicobar Islands. It is situated on Great Nicobar Island and marks the southernmost point of India.
- The ANI is home to 5 [Particularly Vulnerable Tribal Groups](#): Great Andamanese, Jarwas, Onges, Shompens and North Sentinelese.





## Why Does the Earth Day,2024 Mandate Developing a Policy Framework as Paramount Solution?

- **Policy Framework at Intersection of Gender, Climate and Nutrition:**

- Developing a policy framework at the intersection of gender, climate, nutrition, and food value chains is essential for addressing complex issues related to sustainable development and social equity. This framework recognizes the interconnectedness of these factors and aims to integrate gender perspectives into policies and programs that address climate change, promote nutrition, and ensure food security.

- **Redressing Challenges Facing Food Systems:**

- The Rome Declaration on Nutrition underscores the challenges existing food systems face in providing sufficient, safe, diverse, and nutrient-rich food for everyone. Approximately 800 million people worldwide don't have reliable access to food.
  - Two billion people suffer from iron and zinc deficiencies. Food systems today are also responsible for a third of the world's greenhouse gas emissions. The declaration calls for adopting multi-dimensional approaches to addressing these challenges through adherence to the targets of [Sustainable Development Goals](#).

### ▪ **Promoting a Sustainable Diet:**

- India itself suffers from many forms of malnutrition: 32% of children under five are underweight and 74% of the population can't afford a healthy diet. Unhealthy diets are leading to a surge in the prevalence of non-communicable diseases.
  - However, it is also true that over the years, India has made notable progress in understanding the sustainability and nutritional contents of diets.
  - It is now important for India to reflect on whether healthy diets can help mitigate climate change as well. A sustainable diet needs to serve health and nutrition demands, meet cultural expectations, submit to economic necessities, and be just.

### ▪ **Developing Gender-Just Food Value Systems:**

- Women are especially disproportionately affected by climate change and poor nutrition, despite being important food-system stakeholders. In Chhattisgarh, some communities have more gender-just food systems – which are systems that recognise women as equal contributors to both productive and reproductive economies – with equal rights and entitlements, less drudgery, ability to access infrastructure and technologies, and with an even distribution of responsibilities.
  - Communities in the State with a more gender-just food system were also seen to be more resilient against shocks like droughts. When women's collectives are involved in decision-making about their livelihoods, they get better access to financial assets, natural resources, and knowledge. Not surprisingly, then, they are more productive and have better health and nutritional outcomes.

### ▪ **Adopting Indigenous Systems:**

- Indigenous food systems across India have sustained communities for thousands of generations. They are derived mainly from the surrounding natural environment with minimum human intervention. Many people live in forests and consume edible greens, fleshy fruits, root vegetables, mushrooms, grains, various forest produce, and wild meat.
  - Working with local communities on their diets based on locally available food has been able to improve their nutrition status and inflict minimum harm to the environment.

### ▪ **Reducing Emissions:**

- A diet higher in plant-based foods is also more environmentally sustainable than one with more animal foods. The latter can be substituted with plant-based meats and dairy alternatives. There is also a need to shift to plants that consume less energy, land, and water, resulting in lower emissions.
- Researchers have found that the concentrations of protein, iron, and zinc could be 3-17% lower in crops grown in environments where the atmospheric carbon dioxide (CO<sub>2</sub>) concentration is 550 ppm versus when the CO<sub>2</sub> concentration is just above 400 ppm.
  - Given this warning, we need to adopt a value-chain approach to improve the benefits that accrue to communities, such as lowering emissions together with optimising for their dietary choices/needs from the household level.

### ▪ **Scaling Up and Decentralising Food Production Systems:**

- There is an urgent need for scaling up (as well as decentralising) diversified food production systems, promoting underutilised indigenous foods, and developing an analytical framework at the intersection of gender, climate, nutrition, and food value chains.
  - Focusing on nutritious food alone will not help reduce the impact of food systems on the environment. Focus must be to continuously and extensively monitor emissions linked to the production and distribution of food, and ensure the corresponding assessment tools are also more accessible to local communities.

## **Conclusion**

Expectations that systemic change will occur overnight are unrealistic. But it is possible to make a start by pursuing more coherence in water, energy and climate policies, creating data-driven baselines to increase water savings, and enabling new financial instruments and markets for adaptation investments. A water-secure economy is the first step towards a climate-resilient one.

Similarly, Indigenous peoples are the original guardians of our earth. The world must learn from their wisdom. Reason and justice dictate that in southern Nicobar, there is a need to support and empower the



islanders to continue to steward their ancestral territories, rather than robbing them of their lands, resources, lifeways, and worldviews.

Accordingly, there is strong evidence that diverse food consumption can have a strong impact on nutrition and on per capita emissions. Focusing on nutritious diets alone will not help assess and reduce impact on the environment; it must be supported by linking diets to emissions as well. This in turn could force production systems to become more diverse, nutrition-sensitive, and emissions-sensitive.

**Drishti Mains Question:**

Discuss the significance of Earth Day in promoting environmental awareness and sustainable practices. How can individuals contribute to Earth's conservation?

**UPSC Civil Services Examination, Previous Year Questions (PYQs)**

**Prelims:**

**Q. Consider the following statements regarding 'Earth Hour': (2014)**

1. It is an initiative of UNEP and UNESCO.
2. It is a movement in which the participants switch off the lights for one hour on a certain day every year.
3. It is a movement to raise the awareness about the climate change and the need to save the planet.

**Which of the statements given above is/are correct?**

- (a) 1 and 3 only  
(b) 2 only  
(c) 2 and 3 only  
(d) 1, 2 and 3

**Ans: (c)**

**Q. With reference to 'Water Credit', consider the following statements: (2021)**

1. It puts microfinance tools to work in the water and sanitation sector.
2. It is a global initiative launched under the aegis of the World Health Organisation and the World Bank.
3. It aims to enable the poor people to meet their water needs without depending on subsidies.

**Which of the statements given above are correct?**

- (a) 1 and 2 only  
(b) 2 and 3 only  
(c) 1 and 3 only  
(d) 1, 2 and 3

**Ans: (c)**

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