PLUTUS IAS

CURRENT AFFAIRS

Argasia Education PVT. Ltd. (GST NO.-09AAPCAI478E1ZH)
Address: Basement C59 Noida, opposite to Priyagold Building gate, Sector 02,
Pocket I, Noida, Uttar Pradesh, 201301, CONTACT NO:-8448440231

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NATIONAL MULTIDIMENSIONAL POVERTY INDEX

This article covers "Daily Current Affairs" and the topic details "National Multidimensional Poverty Index". The topic "National Multidimensional Poverty Index" has relevance in the "Economic and Social Development" section of the UPSC CSE exam.

For Prelims:
What is the National Multidimensional Poverty Index? Who releases the index? What are its dimensions and indicators?

For Mains:
GS2: Issues related to Poverty and Hunger
GS3: Inclusive Development

Why in the News?
The NITI Aayog has released the second edition of the Multidimensional Poverty Index report named 'National Multidimensional Poverty Index: A Progress Review 2023'.

What is Multidimensional Poverty?
- Most countries define poverty as a lack of money, but the poor themselves view poverty in a broader context.
- They experience multiple disadvantages simultaneously, including poor health, malnutrition, lack of clean water or electricity, low-quality work, and limited education. Focusing solely on income fails to capture the full reality of poverty.
- Multidimensional poverty measures offer a more comprehensive understanding by depicting who is poor and the various disadvantages they face.
- These measures not only provide an overall poverty indicator but also allow for analyzing poverty levels in different regions and among different sub-groups.

National Multidimensional Poverty Index
o   The Government of India has acknowledged the significance of the global MPI.
- **NITI Aayog has been responsible for constructing an indigenized index for monitoring the performance of States and Union Territories in addressing multidimensional poverty.**
- **The national MPI model keeps the ten indicators of the global MPI model, remaining closely aligned with the global methodology.**
- It also includes two new indicators, namely Maternal Health and Bank Accounts, which are in line with national priorities.

Sub-indices of the National MPI

- As per the Alkire-Foster (AF) methodology, an individual is considered multidimensionally poor or MPI poor if they experience deprivation in at least one-third of the weighted MPI indicators. Simply put, a person is deemed MPI poor if their weighted deprivation score reaches or exceeds the poverty threshold of 33.33%.
- **Headcount ratio (H): How many are poor?**
  - Proportion of multidimensionally poor in the population, which is arrived at by dividing the number of multidimensionally poor persons by total population.
- **Intensity of poverty (A): How poor are the poor?**
  - The average level of deprivations experienced by individuals living in multidimensional poverty is determined by calculating the intensity. This involves adding up the weighted deprivation scores of all poor individuals and dividing the sum by the total number of poor individuals.
- MPI value is arrived at by multiplying the headcount ratio (H) and the intensity of poverty (A), reflecting both the share of people in poverty and the degree to which they are deprived.

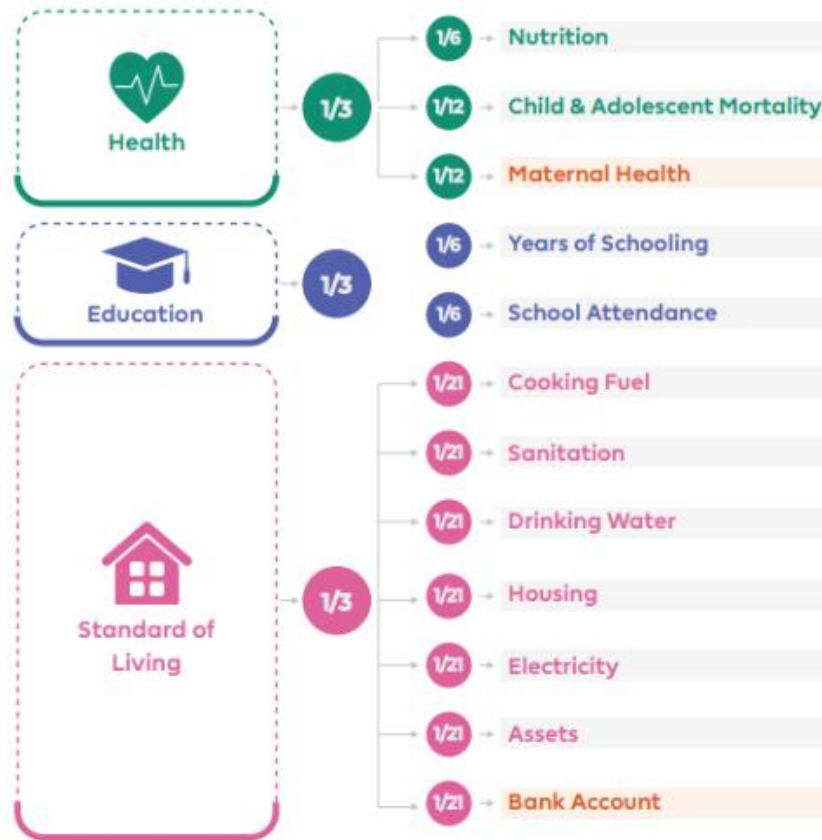$$MPI = H \times A$$

National MPI 2023

- **The National Multidimensional Poverty Index: A Progress Review 2023** is the second edition of the national MPI and follows up on the Baseline Report published in November 2021. It provides an update on the progress made in reducing multidimensional poverty in the country.
- It provides multidimensional poverty estimates for India's 36 States & Union Territories, along with 707 administrative districts across 12 indicators of the national MPI.
- These estimates were calculated using data from the 5th round of the National Family Health Survey (**NFHS-5**), which was conducted in 2019-21, using the same methodology as the baseline report.
- This edition also presents the changes in multidimensional poverty between the survey periods of NFHS-4 (2015-16) and NFHS-5 (2019-21).

National MPI 2023 – Key findings

- Key findings from the National MPI 2023 Report reveal that India has made significant progress in reducing multidimensional poverty. The percentage of multidimensionally poor individuals in India has decreased from 24.85% in 2015-16 to 14.96% in 2019-2021, marking a remarkable decline of 9.89 percentage points.
- The rural areas of the country experienced the most rapid reduction in poverty, with the poverty rate dropping from 32.59% to 19.28%. Similarly, urban areas witnessed a decrease in poverty from 8.65% to 5.27% during the same period.
- Uttar Pradesh witnessed the most significant decrease in the count of impoverished individuals, as 3.43 crore people successfully lifted themselves out of multidimensional poverty.
- Uttar Pradesh, Bihar, Madhya Pradesh, Odisha, and Rajasthan demonstrated the swiftest reduction in the percentage of people living in multidimensional poverty.
- Additionally, the MPI value has nearly halved from 0.117 to 0.066 between 2015-16 and 2019-21, indicating significant progress.
- The intensity of poverty, which measures the average deprivation among the poor, also declined from 47.14% to 44.39%.
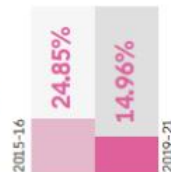
These positive trends demonstrate that India is on track to achieve SDG Target 1.2, which aims to reduce multidimensional poverty by at least half, well ahead of the set timeline of 2030.

Indicators and their weights

Health — 1/3
- 1/6 → Nutrition
- 1/12 → Child & Adolescent Mortality
- 1/12 → Maternal Health

Education — 1/3
- 1/6 → Years of Schooling
- 1/6 → School Attendance

Standard of Living — 1/3
- 1/21 → Cooking Fuel
- 1/21 → Sanitation
- 1/21 → Drinking Water
- 1/21 → Housing
- 1/21 → Electricity
- 1/21 → Assets
- 1/21 → Bank Account

Highlights: MPI Progress Report 2023

Steep decline in Poverty Headcount Ratio
- 2015-16: 24.85%
- 2019-21: 14.96%

**135 million (13.5 crore)** people exited multidimensional poverty between 2015-16 and 2019-21

India on track to achieve SDG Target 1.2 (reducing multi-dimensional poverty by at least half) much ahead of 2030
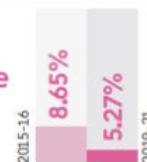
All 12 indicators have shown improvement suggesting that impact of Government interventions is increasingly visible on ground
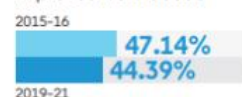
Fastest decline in percentage of multidimensional poor in rural areas from
- 32.59% — 2015-16
- 19.28% — 2019-21
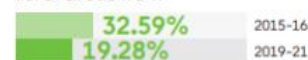
Reduction in the incidence of poverty in urban areas
- 2015-16: 8.65%
- 2019-21: 5.27%

The **Intensity of poverty,** which measures the average deprivation among the people living in multidimensional poverty improved from about
- 2015-16: 47.14%
- 2019-21: 44.39%

UP, Bihar, MP, Odisha and Rajasthan recorded steepest decline in number of **MPI poor**

Improvement in **nutrition, years of schooling, sanitation, and cooking fuel** played a significant role in reducing the MPI value

Government Schemes related to MPI Indicators:
- Prominent initiatives such as the Poshan Abhiyan and Anaemia Mukt Bharat have made notable contributions to diminishing health-related deprivations.
- The Swachh Bharat Mission (SBM) and Jal Jeevan Mission (JJM) have successfully enhanced sanitation levels throughout the nation, as evidenced by a substantial improvement of 21.8 percentage points in sanitation deprivations.
- The implementation of the Pradhan Mantri Ujjwala Yojana (PMUY), which offers subsidized cooking fuel, has had a significant positive impact on people's lives. This initiative has resulted in an impressive improvement of 14.6 percentage points in addressing cooking fuel deprivations.
- Furthermore, initiatives like Saubhagya, Pradhan Mantri Awas Yojana (PMAY), Pradhan Mantri Jan Dhan Yojana (PMJDY), and Samagra Shiksha have played crucial roles in significantly reducing multidimensional poverty across the country.

Other Indices and Reports of NITI Ayog include:
- SDG India Index
- Export Preparedness Index
- India Innovation Index
- Healthy States, Progressive India: Health Index
- SDG Urban Index
- Data Governance Quality Index
- State Energy and Climate Index
- Composite Water Management Index
- India's Booming Gig and Platform Economy
- School Education Quality Index (SEQI)

Sources:
Niti Aayog report claims decrease in multidimensional poverty

Q1. According to the National Multidimensional Poverty Index (MPI) methodology, which of the following accurately represents the determination of multidimensional poverty in India?
(a) An individual is considered multidimensionally poor if they experience deprivation in at least one-third of the weighted MPI indicators.
(b) An individual is considered multidimensionally poor if they experience deprivation in all of the weighted MPI indicators.
(c) An individual is considered multidimensionally poor if they experience deprivation in at least two - third of the weighted MPI indicators
(d) An individual is considered multidimensionally poor based on their educational attainment alone.
Answer: (a)

Q2. Consider the following:
1. SDG India Index
2. Export Preparedness Index
3. India Innovation Index
4. Energy Performance Index
5. Data Governance Quality Index
6. Performance Grading Index for Districts (PGI-D)
How many of the abovementioned reports and indices are released by NITI Aayog?
(a) Only three
(b) Only four

(c) Only five
(d) All Six
Answer: (b)

Q3. Discuss India's recent success in addressing multidimensional poverty and outline the roadmap for further progress.

Gaurav Nikumbh

IMPACT OF CLIMATE CHANGE ON OCEAN COLOUR

This article covers "Daily Current Affairs" and the topic details "Impact of Climate Change on Ocean Colour". The topic "Impact of Climate Change on Ocean Colour" has relevance in the Environment section of the UPSC CSE exam.
For Prelims:
Key Highlights of the Study?
For Mains:
GS 3: Environment
India's Climate Change Mitigation Initiatives?
About MODIS?

Why in the news?
A recent study has suggested that climate change is causing the world's oceans to turn "green," as indicated by the analysis of ocean water. Researchers have attributed this phenomenon to anthropogenic human activities, emphasizing that it is one of the many impacts of climate change. The greening of ocean waters is particularly prominent in areas near the equator and in low latitudes.

Key Highlights of the Study:
Long-Term Trends and Data Analysis:
- Researchers analyzed data from the Aqua satellite's MODIS instrument, monitoring ocean color for two decades (2002-2022).
- MODIS measures visible light in seven wavelengths, detecting subtle color changes in the oceans, which human eyes cannot perceive.
- Green-colored water indicates the presence of phytoplankton, crucial microscopic plant-like organisms forming the base of the marine food web.
- The color of the ocean affects carbon dioxide absorption, with oceans currently absorbing 25% of global CO_2 emissions.

Role of Climate Change:
- The study identifies climate change as the primary driver behind observed changes in ocean color over the two decades.
- Researchers simulated scenarios considering greenhouse gas emissions, predicting significant color changes in 50% of the world's surface oceans, in line with observed shifts to green or blue waters.

Implications for Marine Life and Conservation:
- Changes in phytoplankton population will impact organisms dependent on them for food.

- Different plankton types' ability to absorb carbon influences the ocean's capacity for carbon sequestration.

Regional Variability and the Need for Further Study:
- The southern Indian Ocean exhibits significant color changes, while waters near India may show different trends due to natural variability.
- Ongoing monitoring and research are essential to understand regional variations and climate change's full impact on ocean color.
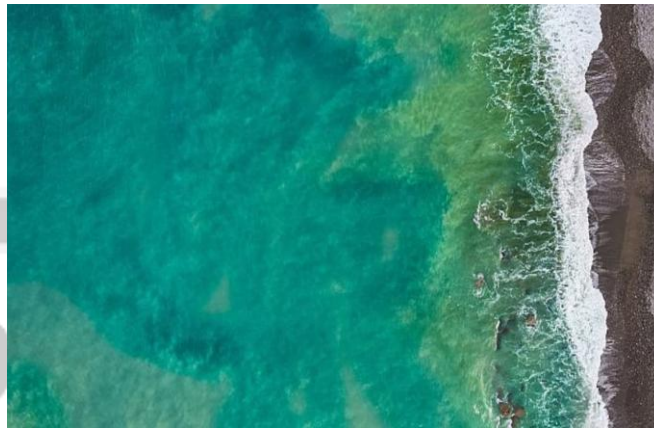
India's Climate Change Mitigation Initiatives:
National Action Plan on Climate Change (NAPCC):
- Launched in 2008 to address climate change challenges in India.
- Comprises 8 national missions focusing on various aspects of climate change, such as renewable energy, energy efficiency, sustainable habitat, water, Himalayan ecosystem, forestry, agriculture, and strategic knowledge for climate change.

Nationally Determined Contributions (NDC):
- India's commitments to reduce greenhouse gas emissions and adapt to climate change.
- Aims to reduce emissions intensity of GDP by 45% by 2030 from 2005 levels, generate 50% of electricity from non-fossil fuel sources by 2030, and achieve net-zero emissions by 2070.

National Adaptation Fund on Climate Change (NAFCC): Established in 2015 to provide financial assistance to state governments for implementing adaptation projects in various sectors.

State Action Plan on Climate Change (SAPCC):
- Encourages all states and union territories to prepare their own SAPCCs based on their specific needs and priorities.
- Aligned with the objectives of the NAPCC and the NDC.

About MODIS
MODIS stands for the Moderate Resolution Imaging Spectroradiometer. It is an instrument aboard two Earth-observing satellites operated by NASA, namely Aqua and Terra. The MODIS instruments were designed to provide valuable data for studying the Earth's land, ocean, and atmosphere. MODIS is one of the key instruments used in remote sensing, providing detailed and high-quality observations of the planet's surface and atmosphere.

Some key features and capabilities of MODIS include:

- **Multispectral Imaging:** MODIS measures reflected solar radiation in multiple spectral bands, allowing it to capture data in various wavelengths of light. This capability enables researchers to observe different features and phenomena on Earth's surface with high precision.
- **High Spatial Resolution:** MODIS provides moderate to high spatial resolution imagery, allowing researchers to discern features as small as 250 meters on the Earth's surface.
- Global Coverage: Both Aqua and Terra satellites carrying MODIS orbit the Earth pole-to-pole, providing complete coverage of the planet every 1 to 2 days. This frequent revisit time is essential for tracking dynamic environmental processes and changes over time.
- **Applications:** MODIS data is used for a wide range of applications, including monitoring vegetation health, land use and land cover changes, wildfire detection, sea surface temperature measurement, monitoring ocean color and phytoplankton distribution, and studying atmospheric aerosols and clouds, among others.
- **Climate and Environmental Studies:** MODIS data plays a crucial role in climate research, allowing scientists to study long-term trends, climate change impacts, and variations in Earth's ecosystems.

Q.1 What is the primary driver behind observed changes in ocean color over the two decades?
(a) Phytoplankton population fluctuations
(b) Subtle changes in ocean salinity
(c) Greenhouse gas emissions and climate change
(d) Solar radiation variations
ANSWER: A

Q.2 Which satellite instrument was used to monitor ocean color and phytoplankton distribution in the study's long-term data analysis?
(a) LIDAR
(b) RADAR
(c) MODIS
(d) SONAR
ANSWER: C

Q.3 Elaborate on the role of climate change in driving observed changes and its potential impact on marine life and carbon sequestration.

Rishabh