

HEALTH

❖ **Acute Malnutrition**

➤ **In Context: Recently the World Health Organization (WHO) in its press brief stated that acute malnutrition is risking 30 million children's lives.**

- According to WHO, Currently, more than 30 million children in the 15 worst-affected countries suffer from wasting — or acute malnutrition.
- 8 million of these children are severely wasted, the deadliest form of undernutrition.
- **Causes:** Conflict, climate shocks, the ongoing impacts of COVID-19 and rising living costs are leaving increasing numbers of children acutely malnourished. Meanwhile, critical health, nutrition and other life-saving services are becoming less accessible.
- **Impacts:** The global food crisis is also a health crisis, and a vicious cycle: malnutrition leads to disease, and disease leads to malnutrition. Acute malnutrition is a major threat to children's lives and their long-term health and development, the impacts of which are felt by individuals, their communities and their countries, the WHO added.

➤ **Global Action Plan on Child Wasting**

- In response to the WHO's report, five UN agencies subsuming WHO are calling for accelerated progress on the Global Action Plan on Child Wasting. These agencies are Food and Agriculture Organization (FAO), UN Refugee Agency (UNHCR), United Nations Children's Fund (UNICEF), World Food Programme (WFP) and World Health Organization (WHO).
- **Aim:** The action plan aims to prevent, detect and treat acute malnutrition among children in the worst-affected countries: Afghanistan, Burkina Faso, Chad, the Democratic Republic of the Congo, Ethiopia, Haiti, Kenya, Madagascar, Mali, the Niger, Nigeria, Somalia, South Sudan, Sudan and Yemen.
- **Need of support, action & investment:** The agencies have called for decisive and timely action to prevent this crisis from becoming a tragedy for the world's most vulnerable children. All agencies urged greater investment in support of a coordinated UN response that will meet the unprecedented needs of this growing crisis before it is too late.

➤ **Malnutrition**

- It refers to deficiencies, excesses or imbalances in a person's intake of energy and/or nutrients.
- It is a chronic problem and a longstanding challenge for the public administration of India.
- The term malnutrition addresses 3 broad groups of conditions:
 - ✓ Undernutrition: It includes wasting (low weight-for-height), stunting (low height-for-age) and underweight (low weight-for-age).
 - ✓ Together, the stunted and wasted children are considered to be underweight, indicating a lack of proper nutritional intake and inadequate care post-childbirth.
 - ✓ Micronutrient-related malnutrition includes micronutrient deficiencies (a lack of important vitamins and minerals) or micronutrient excess; and
 - ✓ Overweight includes obesity and diet-related noncommunicable diseases (such as heart disease, stroke, diabetes and some cancers).

➤ **Government initiatives to address Malnutrition**

- **Poshan Abhiyan:** It is a multi-ministerial convergence mission with the vision to ensure the attainment of malnutrition free India by 2022. The Ministry of Women and Child Development (MWCD) is implementing POSHAN Abhiyaan.
- **Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) 2.0 scheme:** It now includes the Integrated Child Development Services (ICDS) scheme, which seeks to work with adolescent girls, pregnant women, nursing mothers and children below three.
- **Integrated Child Development Services (ICDS):** It represents one of the world's largest and unique programmes for early childhood care and development.
 - ✓ The beneficiaries under the Scheme are children in the age group of 0-6 years, pregnant women and lactating mothers
 - ✓ The Ministry of Women and Child Development is the implementing agency.
- **Mid-Day Meal Scheme:** The Mid-day Meal Scheme is a school meal programme in India designed to better the nutritional standing of school-age children
 - ✓ It covers all school students studying in Classes 1 to 8 of government schools, government-aided schools, special training centres, including madrasas supported under Samagra Shiksha Abhiyan.
- **National Food Security Mission:** It was launched in 2007-08 by the Ministry of Agriculture and Farmers' Welfare as a Centrally Sponsored Scheme.
 - ✓ It focuses on the sustainable increase in the production of targeted crops through area expansion and productivity enhancement.

- National Nutrition Mission: It is the government's flagship programme to improve nutritional outcomes for children, pregnant women and lactating mothers.
 - ✓ It aim to reduce stunting and wasting by 2 percent per year (total 6 per cent until 2022) among children and anemia by 3 percent per year (total 9 per cent until 2022) among children, adolescent girls and pregnant women and lactating mothers. The Ministry of Women and Child Development is the nodal ministry for implementation.
- **Way ahead**
 - It is being speculated that this situation is likely to deteriorate even further in 2023.
 - Urgent support is needed now in the hardest-hit countries to protect children's lives and health, including ensuring critical access to healthy foods and nutrition services, especially for women and children.
 - Improving the efficiency and effectiveness of existing nutrition investments can increase the impact of available resources on malnutrition.
 - Policy initiatives are urgently needed to transform food systems, increase intake of health-promoting foods, and reduce animal-based foods, to ensure diets are healthy and sustainable for people and the planet.

PRELIMS

1. World's oceans warmest on record in 2022: study

➤ **CONTEXT: For the fourth year in a row, the world's oceans recorded extreme heating in 2022 on account of anthropological activities like greenhouse gas emissions. The worrying trend continues even as the time to reverse climate crisis is running out.**

- More than 90% of the excess heat accumulated in the earth's climate is deposited in the oceans.
- A study conducted by researchers from 16 institutes worldwide and published in the Journal of Atmospheric Sciences analyses factors that drive heating trends in the world's oceans. The study uses in situ data obtained from the World Ocean Database.

➤ **How does rising ocean heat content cause a climate crisis?**

- Ocean heat content (OHC) is the amount of energy absorbed by and stored in the oceans. It is measured in joules, the unit of energy.
 - When sunlight reaches the earth, oceans absorb this energy and store it as heat. While the heat is first absorbed at the surface of the water body, some of it is eventually disbursed throughout. Water also has a higher heat capacity than air, which means that it can store much larger amounts of heat. This also means that water heats up slower than air.
- OHC is an important indicator of climate change. An increase in greenhouse gas emissions traps more energy from the sun in the atmosphere, not allowing it to escape. Rising ocean temperatures strengthen the exchange of energy from oceans to the atmosphere by increasing the evaporation of water and thus the quantity of atmospheric moisture. This leads to changes in global precipitation patterns as well as temperatures.



➤ **Salinity**

- Salinity is a particularly important characteristic of sea and ocean water.
- In 2022, the salinity-contrast index, defined as the difference between the salinity averaged over climatologically high-salinity and low-salinity regions, also reached its highest level on record in 2022.
- Salinity determines water density, which drives the circulation of water in oceans. When evaporation occurs, liquid water that is high in salinity is left behind. Similarly, during precipitation, freshwater is added to saline water.
- Over time, changes in salinity of oceans include large areas and act as an indicator of a change in the water cycle. The salinity-contrast index, a measure of "salty gets saltier–fresh gets fresher" pattern, is a powerful tool to observe salinity pattern changes.

➤ **Vertical stratification**

- Together, temperature and salinity changes in oceans change the density of water and lead to vertical stratification. This stratification hinders water mixing and consequently the exchange of heat, carbon, oxygen and so on between layers. As a result, stratification, along with OHC and salinity-contrast index, becomes an important element in quantifying climate change.

➤ **Findings of the study**

- Spatial maps of ocean heating in 2022, relative to the mean 1981-2010 conditions, show significant warming in most ocean areas. Atlantic and southern oceans are heating at a faster rate than other ocean basins. The increasing occurrences of heatwaves and droughts in the northern hemisphere are consistent with the intensive ocean warming in the mid-latitude Pacific and Atlantic oceans.
- The data shows that heat has increased in equatorial regions over the past year— both through advection in the ocean and anomalous surface exchanges (advection refers to the exchange of energy, moisture, microbes or solutes carried by the bulk motion of water.)
- Salinity trends for 2022 show that most of the Pacific and East Indian Oceans are currently undergoing a freshening, while mid-latitude Atlantic, the Mediterranean Sea and West Indian oceans are becoming more saline.
- The rise in ocean temperatures is a result of the earth's energy imbalance, primarily associated with an increase in greenhouse gas emissions. These gases trap heat in a blanket around the earth, not allowing it to escape, thus raising the temperature of the earth's surface and leading to global warming. The study also noted that the global long-term warming trend is so steady that annual records continue to be set with each new year, as noted in the last four years.

2. **Noise pollution affects dolphins' ability to communicate: Study**

➤ **CONTEXT: A new study has found that noise generated by human activity makes it harder for dolphins to communicate and coordinate with each other. As the levels of underwater noise increase, these mammals have to "shout" to each other.**

- The latest study, 'Anthropogenic noise impairs cooperation in bottlenose dolphins', has been authored by researchers Pernille M Sørensen (University of Bristol, UK), Abby Haddock (Dolphin Research Center, Florida) and others.
- Dolphins are social mammals that communicate through squeaks, whistles and clicks.
- They also use echolocation in order to locate food and other objects. Therefore, anthropogenic noise coming from large commercial ships, military sonars or offshore drilling can severely impact their well-being.

➤ **How was the study done?**

- To make their observations, researchers placed two dolphins, named Delta and Reese, at an experimental lagoon and trained them to press their underwater buttons located at either end of the enclosure within one second of each other. Both dolphins were also made to wear recording tags that documented their sound and motion.
- Delta and Reese were released from a starting point during each trial, and in some trials, one was held back for five to 10 seconds while the other was released immediately. In case of delayed-release trials, the dolphins had to depend on just vocal communication to coordinate the button press.
- Researchers conducted around 200 such trials and used underwater speakers to create different sound environments within the experimental lagoon.

➤ **What are the findings of the study?**

- It was found that as it got noisier underwater, both dolphins changed their behaviour to communicate and work together.
- Apart from raising the volume and increasing the length of their calls, they also changed their body language — they turned their bodies towards each other and swam across the lagoon to be closer to each other.
- Researchers noted despite these attempts to compensate for the noisy background, the dolphins had less success with the task.
- According to the study, "cooperative task success decreased in the presence of noise, dropping from 85 per cent during ambient noise control trials to 62.5 per cent during the highest noise exposure."
- Previous studies have demonstrated that dolphins change their behaviour when they come across boats but, before the latest research, no one observed how anthropogenic noise can impact the coordination among these aquatic creatures.

➤ **What are the consequences of noisy oceans?**

- Marine animals are known to use sound to navigate, find food and protect themselves. As sound travels faster in water than air, it makes for an important mode of communication because it can convey a lot of information quickly and over long distances. Scientists believe that fish species rely on sounds during reproductive activities, including mate attraction, courtship and mate choice.
- However, several studies and incidents have shown that sounds made by drilling, commercial ships and military operations lead to disruption of marine life.

- In 2020, Australia witnessed one of its worst mass stranding of whales when around 200 of them died on Tasmania's west coast. Researchers suggest that mass strandings are linked to noise pollution in oceans.
- A 2018 study by researchers at the University of Maryland found "that when there was more ambient sound, mostly from passing boats and ships, the dolphins switched to higher frequencies and streamlined their whistles.
- Recently, The Guardian reported that the newly launched MV Ganga Vilas cruise, which will "make stops at about 50 tourist and heritage sites along the Ganga and Brahmaputra river systems", could severely damage the habitat of the Ganges river dolphin, which already face a number of threats, including water pollution and poaching.
 - ✓ Environmentalists and conservationists pointed out that Ganga river dolphins are "almost blind" and an increase in cruise tourism might result in their extinction.

3. **'VARUNA' – 2023**

➤ **Context: The 21st Edition of the Bilateral Naval Exercise between India and France – Exercise Varuna commenced on the Western Seaboard, from 16 Jan to 23 Jan.**

- While the bilateral exercise between the two navies were initiated in 1993, it was christened as 'VARUNA' in 2001 and has become a hallmark of India – France strategic bilateral relationship.
- This edition will witness participation of indigenous guided missile stealth destroyer INS Chennai, guided missile frigate INS Teg, maritime patrol aircraft P-8I and Dornier, integral helicopters and MiG29K fighter aircraft.
- The French Navy will be represented by the aircraft carrier Charles De Gaulle, frigates FS Forbin and Provence, support vessel FS Marne and maritime patrol aircraft Atlantique.
- The exercise will be conducted over five days from 16 to 20 January 2023 and will witness advanced air defence exercises, tactical manoeuvres, surface firings, underway replenishment and other maritime operations.
- Units of both navies will endeavour to hone their war-fighting skills in maritime theatre, enhance their inter-operability to undertake multi-discipline operations in the maritime domain and demonstrate their ability as an integrated force to promote peace, security and stability in the region.
- This exercise provides an opportunity to learn from each other's best practices. The exercise facilitates operational level interaction between the two navies to foster mutual cooperation for good order at sea, underscoring the shared commitment of both nations to security, safety and freedom of the global maritime commons.

4. **Thiruvalluvar Day**

➤ **CONTEXT: The Prime Minister, Shri Narendra Modi has paid homage to Thiruvalluvar on Thiruvalluvar Day and recalled his noble thoughts. PM also urged the youth to read the Kural.**

- Thiruvalluvar Day was first celebrated on May 17 and 18 in 1935.
- In the present time, it is usually observed either on January 15 or 16 in Tamil Nadu and is a part of Pongal celebrations.

➤ **About Thiruvalluvar**

- He is a poet, and philosopher
- He is regarded as a cultural icon by Tamils.
- Very little is known about his family background, religious affiliation, or birthplace.
- It is believed that he used to live in the town of Mylapore, which in today's time is a neighborhood in Chennai.
- Some accounts say that he lived from the 8th to the 9th century.
- Tamil orator and writer and father of the Pure Tamil movement, Maraimalai Adigal deduced 31 BC as the birth year of Valluvar, while Czech scholar in Indian literature and linguistics, Kamil Zvelebil inferred that Thiruvalluvar lived around 500 AD.

➤ **His works and significance**

- Thiruvalluvar's primary work Thirukkural contains 1330 couplets (kurals) that are divided into 133 sections of 10 couplets each.
- The text is divided into three parts with teachings on dharma, artha, and kama (virtue, wealth and love).
- In the early 16th century, a temple was built within the Ekambareswarar temple complex in Mylapore and it was dedicated to Thiruvalluvar.
- In 1976, a temple memorial called Valluvar Kotam was built in Chennai and houses one of the largest auditoriums in Asia.
- Another statue of the legendary Tamil poet was unveiled in Ulsoor, near Bengaluru, in 2009.
- A statue of Valluvar was also erected outside the School of Oriental and African Studies in Russell Square, London.

ANSWER WRITING

Q: Discuss the main features of the Very Short-Range Air Defence System (VSHORAD) and its strategic importance for India.

VSHORADS is a Man-Portable Air Defence System (MANPAD) designed and developed indigenously by DRDO. The missile is meant to kill low-altitude aerial threats at short ranges. This new missile equipped with modern technologies will give a further technological boost to the Indian armed forces.

Main features of the VSHORAD system:

- VSHORADS are short-range, lightweight and portable surface-to-air missiles that can be fired by individuals or small groups to destroy aircraft or helicopters.
- They are having a maximum range of 8 kilometres and can engage targets at altitudes of 4.5 km.
- The missile incorporates various novel technologies such as a miniaturized Reaction Control System (RCS) to increase mid-air manoeuvrability and integrated avionics.
- The reaction control system is capable of providing small amounts of thrust in any desired direction or combination of directions. The missile is propelled by a dual-thrust solid motor.

The strategic importance of the VSHORAD system:

- Safeguarding strategic areas: These Very Short-Range Air Defence Missiles are considered extremely vital for the defence of any major city or any strategically important location.
- The obsolete stock of armouries: There was a critical gap in the Army's inventory, especially for the eastern and northern borders. The present stock with the Indian Army like the Air Defence Guns L-70 and the ZU-23 is over four decades old and hence obsolete. Therefore, the procurement of VSHORAD, as a robust and quickly deployable system, will strengthen armed forces capabilities.
- Useful for rugged Terrains: VSHORAD system is man-portable and lightweight compared to the other missile systems in the Army's armoury hence it can be deployed in the mountains close to the LAC at a short notice. This becomes important due to the ongoing military standoff with China at the LAC in eastern Ladakh.
- Strengthening India's defence capabilities: As the system is indigenously developed it will provide impetus to India's vision of Atma Nirbhar Bharat and the goal of indigenisation of the Defence Sector by decreasing the import bill.

The induction of Indigenously built VSHORAD system will be a step forward in the right direction towards self-sufficiency in defence sector. Self-sufficiency in defence will fundamentally lead towards strategic Independence.

MCQs

1. With reference to Gangetic dolphins, consider the following statements.
 1. They are the only surviving freshwater dolphin in India
 2. It's the only species of freshwater dolphin in the world.
 3. It is classified under Schedule 1, Wildlife (Protection) Act, 1972.
 4. Vikramshila Gangetic Dolphin Sanctuary (VGDS) in Bihar's Bhagalpur district is India's only sanctuary for Gangetic Dolphins.

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

- a) 1, 2 and 4 only
 - b) 1 and 3 only
 - c) **3 and 4 only**
 - d) 1, 2, 3 and 4
2. With reference to Exercise 'VARUNA' 2023 consider the following
 1. This is the 21st edition of the bilateral naval exercise between India and France
 2. The exercise will witness the participation of the Indian Navy's guided-missile stealth destroyer INS Kolkata, guided-missile frigates INS Tarkash and INS Talwar.
 3. The French Navy will be represented by the Aircraft Carrier Charles-de-Gaulle with Rafale-M fighter, E2C Hawkeye aircraft and helicopters Caïman M.

Which of the above statement/s is/are incorrect?

- a) 1 and 2 only
 - b) 1 only
 - c) **2 and 3 only**
 - d) 3 only
3. With reference to Ocean Mean Temperature (OMT), which of the following statements is/are correct?
 1. OMT is measured up to a depth of 26°C isotherm which is 129 meters in the south-western Indian Ocean during January-March.
 2. OMT collected during January-March can be used in assessing whether the amount of rainfall in monsoon will be less or more than a certain long-term mean.

Select the correct answer using the code given below:

- a) 1 only

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- b) **2 only**
c) Both 1 and 2
d) Neither 1 nor 2
4. Which of the following initiative /s initiated by Government of India to address Malnutrition in India
1. Poshan Abhiyan
 2. Project Bachpan
 3. Food Security Mission
 4. Mid Day Meal Scheme
- Choose the correct answer using the codes given below
- a) 1,2 and 3 only
 - b) 2 ,3 and 4 only
 - c) 3 and 4 only
 - d) **1,3 and 4 only**
5. With reference to the National Food and Nutrition Campaign, consider the following statements
1. It was organized by the Government of India in the year 2021.
 2. Under the campaign for the first time India declared 2023 as the year of Millet.
- Which of the above given statement/s is/are correct?
- a) 1 only
 - b) 2 only
 - c) Both 1 and 2
 - d) **Neither 1 nor 2**
6. Which of the following recently decided to introduce Annual Transparency Report by Audit Firm?
- a) **National Financial Reporting Authority**
 - b) Comptroller and Audit General of India
 - c) Niti Ayog
 - d) Security Exchange Board of India
7. With reference to Indian Council of World Affairs (ICWA) consider the following
1. Indian Council of World Affairs has been declared an institution of national importance.
 2. It was registered as a non-profit organisation under the Registration of Societies Act 1860.
 3. Foreign Minister is the ex-officio President of ICWA
- Which of the above statement/s is/are correct?
- a) **1 and 2 only**
 - b) 1 and 3 only
 - c) 2 and 3 only
 - d) 1,2 and 3
8. Consider the following reports
1. Global Competitiveness Report.
 2. Global Gender Gap Report.
 3. Global Risk Report.
 4. Global Travel and Tourism Report
- Which of the above reports is/are published by World Economic Forum?
- a) 1 and 3 only
 - b) 1 and 4 only
 - c) 2 and 3 only
 - d) **1,2,3 and 4**
9. Which of the following became the first state in India to implement a policy to control blindness?
- a) **Rajasthan**
 - b) Maharashtra
 - c) Odisha
 - d) Andhra Pradesh
10. With reference to Fiscal Deficit consider the following statements:
1. When the government income is higher than its total expenditure, it is known as a fiscal deficit.
 2. An increase in the capital expenditure can cause fiscal deficit.
 3. Printing new money is one of the ways to finance the fiscal deficit..
- Which of the statements given above is/are correct?
- a) 1 and 2 only
 - b) **2 and 3 only**
 - c) 1 and 3 only
 - d) 1, 2 and 3