

15<sup>th</sup> July, 2024

## 1. Wolbachia

### GS 3 (Science and Tech)

- **Why in News:** Researchers from Shenyang Agricultural University (SAU) China, published a paper in the journal *Current Biology* showing that Wolbachia bacteria had manipulated the wasp *Encarsia formosa* to entirely get rid of its males.
- **About Wolbachia:**
  - It is a common **type of bacteria** found in insects.
  - Approximately 6 in 10 of all insects, including butterflies, bees, and beetles, around the world have Wolbachia.
  - Wolbachia bacteria **cannot make people or animals** (for example, fish, birds, pets)
- **Key facts about *Encarsia formosa***
  - These are of interest to agricultural scientists because they provide an efficient way to control
    - ◆ Whiteflies feed on the sap of plant leaves, causing productivity losses, and are thus a major agricultural pest.
    - ◆ Whiteflies belong to the insect order Hemiptera whereas wasps belong to the insect order Hymenoptera.
  - The wasp seeks out the nymphs (or larvae) of whiteflies and lays its eggs on them. When the eggs hatch, the larvae that emerge penetrate the nymph, feed on its tissues, grow to adulthood, and in the process kill the nymph.
  - The progeny wasps emerge from the nymph's carcass. As a parasitoid of whiteflies, the female wasp is in effect a search-and-destroy weapon. The male wasps are superfluous to this role.

## Scientists find that a bacteria tricked a wasp to get rid of its males

Shenyang Agricultural University researchers noticed that in the wild *Encarsia formosa* wasps almost never produced males. In the laboratory, however, they found that if the female wasp was mated with a male, 20% of the progeny were male.



## 2. Indian flapshell Turtle

### GS 3 (Environment)

- **Why in News:** The scientists at the Indian Veterinary Research Institute (IVRI) on a mission to save an Indian flapshell turtle, whose shell cracked after an accident.
- **About Indian flapshell Turtle:**
  - It is a freshwater species of turtle found in South Asia.
  - The "flap-shelled" name stems from the presence of **femoral flaps** located on the plastron. These flaps of skin cover the limbs when they retract into the shell.
  - It is morphologically an evolutionary link between the softshell and hardshell aquatic turtles.
  - **Habitat:** They live in the shallow, quiet, often **stagnant waters of rivers, streams, marshes, ponds, lakes and irrigation canals, and tanks.**
  - These turtles **prefer waters with sand or mud bottoms** because of their tendency to burrow.
  - **Distribution:** They are mainly found in Pakistan, India, Sri Lanka, Nepal, Bangladesh (Indus and Ganges drainages) and Myanmar (Irrawaddy and Salween Rivers).
  - **Lifestyle:**
    - ◆ They are
    - ◆ They are generally **solitary and active during the day**. They are very well **adapted**, both morphologically and behaviorally, **to drought conditions**.
  - **Conservation status**
    - ◆ IUCN Red list: Vulnerable
    - ◆ CITES: Appendix I
    - ◆ Wildlife (Protection) Act, 1972: Schedule I

## A highway rescue act, a turtle with patched-up shell — and now a wait

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ANCHOR

UPASIKA SINGHAL  
NEW DELHI, JULY 14

"LOOK, SHE'S burrowing deeper into the mud... she's preparing to lay eggs soon. Turtles bury their eggs deep in the mud," says Vikendra Sharma in a high-pitched whisper, barely able to conceal his excitement.

For the last few days, the turtle, lying in a large green tub in Sharma's foyer, has been recuperating from a recent accident that left it shattered. As Sharma gently moves the foliage, letting in a stream of light, the turtle pulls back into its shell.

Around 12:30 pm on July 8, Sharma, a former physics teacher, was on his way home to



Former physics teacher Vikendra Sharma who rescued the turtle; and (right) a post-surgery X-ray of the turtle that shows its eggs. *India Today*, Express

Budaun from a gau raksha samelan in Moradabad when he got a call about a turtle in distress on the highway between Budaun and Bareilly. The caller had found an Indian Flapshell

turtle (*Lissemys punctata*), a species that categorised as vulnerable by the International Union for Conservation of Nature's (IUCN) red list of wildlife species.

The turtle's shell had cracked open, leaving a gaping wound in the area right around its neck—it didn't look like it would make it alive. What followed were a

CONTINUED ON PAGE 2



### 3. Bihar seeks MSP for Makhana GS 3 (Agriculture)

- **Why in News:** The Bihar government has urged the Centre to declare **Minimum Support Price (MSP)** for **makhana**, an aquatic crop cultivated across 10 districts in the state.
- **About Makhana:**
  - Makhana (**Euryale ferox**) is an aquatic crop grown for its edible seeds.
  - This cash crop belongs to the family **Nymphaeaceae** and is native to India and Southeast Asia.
  - Makhana seeds develop within the flower of the plant, which grows underwater in stagnant or slow-moving water bodies like ponds, lakes, and shallow marshes.
  - **Climatic Conditions:** Makhana cultivation requires warm temperatures for optimal growth. It thrives in regions with a tropical climate, characterized by hot summers and adequate rainfall.
  - **Soil Requirements:** Makhana plants prefer loamy or clayey soils that are rich in organic matter.
  - **Nutritional Value:** Makhana seeds are nutritious and low in calories. They are rich in protein, carbohydrates, fiber, calcium, potassium, magnesium, and phosphorus.
  - Bihar is the leading producer of makhana in India, with about **85% of India's production originating from the state.**
  - Makhana cultivation is difficult and intense.
- **Government's Demands:**
  - **Minimum Support Price (MSP):** Bihar seeks MSP recognition for makhana to ensure fair prices for farmers and sustainable cultivation.
  - **Improving ICAR-NRC for Makhana:** The ICAR-National Research Centre (NRC) for Makhana in Darbhanga requires urgent attention. It currently faces challenges such as inadequate staffing (only 10 employees against a sanctioned 42) and administrative deficiencies

### Bihar govt seeks MSP for makhana, flags 'bad shape' of research centre

Centre in Darbhanga has only 10 staff against 42 posts, no full-time director

HARIKISHAN SHARMA  
NEW DELHI, JULY 14

THE BIHAR government has urged the Centre to declare the Minimum Support Price (MSP) for makhana, an aquatic crop cultivated across 10 districts in the state. The Indian Express has learnt. The state has also flagged "lack" of manpower at the Darbhanga-based Indian Council of Agricultural Research – National Research Centre (ICAR-NRC) for Makhana and told the Centre it was in "bad shape".

Bihar Agriculture Minister Mangal Pandey raised the issue during his meeting with Union Agriculture Minister Shivraj Singh Chouhan in New Delhi on July 11, it is learnt.

Chouhan is learnt to have assured Pandey that he would "look into" the MSP demand. He also directed officials to ensure the Makhana Centre in Darbhanga is made "fully functional" and the shifting of its administrative headquarters from Ludhiana to Patna be "expedited urgently".

About 85 per cent of the country's makhana production comes from Bihar, where about 10 lakh people are directly or indirectly involved in its cultivation and production process. Most of the farmers who cultivate the G-tagged makhana – in Darbhanga, Saharsa, Madhepura, Supaul, Purnia, Katihar, Araria, Kishanganj, Madhubani and Sitamarhi districts of the state – come from poor backgrounds.

Bihar's MSP demand is significant as it comes as state Assembly polls are due next year in the recent Lok Sabha elections. In Bihar, the NDA, of which Chief Minister Nitish Kumar's JDU is a part, won 31 of the 40 seats but its vote share dipped significantly.

With 12 MPs, the JDU's significance in the NDA has grown after the BJP fell short of a majority of its own in the recent Lok Sabha polls.

On the ICAR-NRC for Makhana in Darbhanga, Pandey is learnt to have told the Union Agriculture Minister that it needed to be "upgraded" and its "administrative headquarters" changed to Patna. He particularly raised the issue of lack of manpower.

According to sources, the Darbhanga-based ICAR-NRC for Makhana has only 10 employees against a sanctioned strength of 42. There's no administrative staff and a full-time director was never appointed, they added.

According to the Agriculture Ministry, the ICAR-NRC for Makhana, Darbhanga, was sanctioned by the Department of Agricultural Research & Education, Government of India, as a new scheme during the IX Five Year Plan period (1997-2002) for Conservation, Research & Development of the makhana crop.

It started functioning from February 2002. However, in 2005, the NRC for Makhana was merged and brought under the administrative control of ICAR-Research Complex for Eastern Region (ICAR-REC), Patna. With this move, the "national" tag of the NRC for Makhana was revoked.

In May 2023, the Central government restored the status of Research Centre for Makhana, Darbhanga to "National Research Centre for Makhana, Darbhanga" and attached to the Ludhiana-based ICAR-Central Institute of Post Harvest Engineering & Technology.

### 4. Falcon 9 Rocket Grounded After Satellite Mishap GS 3 (Science and Tech)

- **Why in News:** The US Federal Aviation Administration (FAA) has grounded **SpaceX's Falcon 9 rocket** following a recent failure (first since 2015). The incident involved the **rocket's upper stage engine malfunction**, which left 20 Starlink internet satellites in an unusable low orbit.
- **What is Falcon 9?**
  - Falcon 9 is a **reusable rocket** developed by SpaceX, powered by **liquid oxygen and rocket grade kerosene (RP-1)**.
  - **It consists of two stages:**
    - ◆ the reusable first stage with nine Merlin engines
    - ◆ the second stage with a single Merlin engine
  - The rocket's first stage is powered by nine Merlin engines, while the second stage uses a single Merlin Vacuum engine optimized for use in the vacuum of space.
  - It is capable of transporting payloads and crew to low Earth orbit and beyond. Falcon 9 is the only U.S. rocket capable of sending NASA crews to the International Space Station.

### What caused the rare failure of SpaceX's Falcon 9 rocket?

ALIND CHAUHAN  
NEW DELHI, JULY 14

THE US Federal Aviation Administration (FAA) last week grounded SpaceX's Falcon 9 – one of the world's most active rockets – after the failure of its upper stage engine that stranded 20 Starlink Internet satellites in a low, non-survivable orbit. The failed mission ended a remarkable streak of more than 300 successful Falcon 9 flights in the last nine years.

#### What is Falcon 9?

Falcon 9 is a partially reusable rocket designed and manufactured by Elon Musk's SpaceX company. It can transport crew and payloads to low Earth orbit (an altitude of 2000 km or less) and beyond. The rocket has two stages. The first stage or booster stage comprises nine Merlin engines (a family of rocket engines developed by SpaceX), and aluminium-lithium alloy tanks containing liquid oxygen and rocket-grade kerosene propellant. The second stage consists of a single Merlin engine. The first stage, which is reusable, is capable of re-entering the atmosphere and landing vertically after separating from the second stage.

#### What went wrong with Falcon 9?

The problem occurred about 30 minutes after the Falcon 9 launch from California's Vandenberg Space Force Base on July 11. The rocket's second stage experienced a liquid oxygen leak, and failed to complete a second, short engine burn needed to put 20 Starlink satellites in the correct orbit, SpaceX said on its website. "After a planned reignition of the upper stage engine to raise perigee – or lowest point of orbit – the Merlin Vacuum engine experienced an anomaly and was unable



Falcon 9 in 2021. Wikimedia Commons

to complete its second burn," SpaceX said. "Although the stage survived and still deployed the satellites, it did not successfully circularise its orbit. This left the satellites in an eccentric orbit with a very low perigee of 135 kilometres, which is less than half the expected perigee altitude." SpaceX claimed that the stranded satellites pose no threat to other satellites or public safety as they are expected to entirely burn up in the Earth's atmosphere.

#### What happens next?

The rare failure is expected to impede Falcon 9's launch pace. The rocket saw 96 launches in 2023, and exceeded the annual launch total in any country, according to a report by Reuters.

The grounding of Falcon 9 is also likely to postpone upcoming missions taking astronauts to orbit. The private Polaris Dawn mission spearheaded by the entrepreneur Jared Isaacman is slated for the end of July. The rocket is also scheduled to take four astronauts to the International Space Station (ISS) for NASA in mid-August – Falcon 9 is the only US rocket capable of taking NASA astronauts to ISS. The rocket will remain grounded until the time SpaceX investigates the cause of failure, fixes the issue, and gets approval from the FAA.



- **Payload Capacity:** Falcon 9 can transport payloads weighing up to 22,800 kilograms (50,300 pounds) to low Earth orbit (LEO) and up to 8,300 kilograms (18,300 pounds) to geostationary transfer orbit (GTO).
- **Versatility:** It is used for a variety of missions including satellite deployment, cargo resupply to the International Space Station (ISS), and crewed missions under **NASA's Commercial Crew Program**.
- The workhorse rocket has launched more than 350 times since its debut in June 2010.

## 5. India Could Soon Allow Weight-Loss Drug Tirzepatide

### GS 2 (Health)

#### ● Why in News:

- In a first, an expert committee of India's drug regulator (CDSCO, which is under DCGI) gave the green light to the weight loss drug tirzepatide.
- The drug will receive final regulatory approval after this recommendation is reviewed, enabling its maker (US based Eli Lilly) to introduce the product to the Indian market.

#### ● The Development of Various Weight Loss Drugs:

- The development of various weight loss drugs has been a game changer for obesity treatment in recent years, especially in the **US and Europe**.
- The US Food and Drug Administration (FDA) has approved **Wegovy (semaglutide)** and **Zepbound (tirzepatide)** for chronic weight management in adults.
- These drugs can be prescribed to those who are
  - ◆ **Obese** (with a body mass index [BMI] of over 30), or
  - ◆ **Overweight** (with a BMI between 27 and 30), and
  - ◆ **Have at least one other health condition** related to their weight (such as high blood pressure, high cholesterol, or type 2 diabetes).

#### ● About Semaglutide and Tirzepatide Drugs:

- Semaglutide and tirzepatide (both are administered as injections under-the-skin) are **polypeptides** - small proteins that boost the levels of naturally-occurring hormones in the body.
  - ◆ These hormones include glucagon-like-peptide 1 (GLP-1), which **control weight through the brain and digestive tract**.
  - ◆ Higher GLP-1 levels (released in the gut) trigger the sensation of satiety - the feeling of being satisfied and having had enough to eat, in the brain.
- **These drugs also help manage glucose levels**, making them an effective treatment for diabetes.
- While semaglutide only targets GLP-1 receptors, **tirzepatide also boosts a second hormone: glucose-dependent insulinotropic polypeptide (GIP)**.
  - ◆ The GIP also regulates weight through receptors in brain and fat cells, and the combined action of GLP-1 and GIP enhance each other's effects.
- **Global trials for Zepbound** (in which Indians took part as well) have yielded promising results.
- Based on data from these trials, **Zepbound got regulatory clearance in India**, with a crucial rider to conduct a phase IV (post-marketing surveillance) trial **to scrutinise side effects**.

#### ● What are Some of the Side Effects/ Limitations of the Zepbound Drug?

- **Zepbound is a prescription medicine** and cannot be used for cosmetic weight loss.
- According to Eli Lilly, **Zepbound's most common side effects** include nausea, diarrhoea, vomiting, constipation, abdominal pain, indigestion, injection-site reactions, fatigue, allergic reactions, belching, hair loss, and heartburn.
- Eli Lilly specifically highlights the risk of thyroid tumours, including **thyroid cancer**.
- Obesity drugs are **not one-time miraculous treatments** for weight loss and need to be used regularly for their weight loss and other effects to last.
  - ◆ This is because obesity is a complex, chronic and progressive disease which has to be managed throughout one's life.

## How weight-loss drugs work

Weight loss drug tirzepatide, marketed by US pharma giant Eli Lilly as Zepbound, is on the cusp of getting regulatory approval in India. The development of obesity drugs has been game changing in recent years

KALAIN SHERIFF M

NEWS/ELI, JULY 14

THE DEVELOPMENT of various weight loss drugs has been a game changer for obesity treatment in recent years, especially in the US and Europe. But these drugs are yet to be commercially available in India, with pending regulatory clearances and high demand also delaying their arrival in the country. For this might soon change. Last week, in a first, an expert committee of India's drug regulator gave the green light to the drug tirzepatide. Following a review of this recommendation, the drug will be given final approval by the regulator, allowing its manufacture. Eli Lilly is launching the product in the Indian market.

**Diabetes drug for weight loss**

In 2017, the US Food and Drug Administration (FDA) approved Danish pharma giant Novo Nordisk's Ozempic, with the active ingredient semaglutide, to manage type 2 diabetes. Soon, doctors in the US saw an interesting side effect - weight loss. They started prescribing Ozempic off-label (the practice of prescribing a drug for a different purpose than what has been approved) to treat obesity. A social media frenzy followed, with influencers flooding TikTok and Instagram with posts about their dramatic weight loss transformations, all courtesy Ozempic.

This made Novo Nordisk explore semaglutide as a weight loss drug for people without diabetes. In 2021, the company released Wegovy, a semaglutide injection, as an FDA-approved obesity treatment. The key difference between Ozempic and Wegovy, the maximum approved dose of semaglutide is slightly higher with Wegovy than Ozempic. Currently, there is a global shortage of both drugs and soaring demand. In November 2023, Eli Lilly, another US pharma major, got FDA approval for the drug Zepbound, which was launched. Like Ozempic, Zepbound too led to weight loss among users, and began to see rampant off-label use. Zepbound and Wegovy contain tirzepatide

**IF PRESCRIBED ZEPBOUND, TELL YOUR DOCTOR...**

- Other medical conditions, specifically with respect to your kidneys, pancreas, and stomach
- History of diabetic retinopathy, a diabetes-related complication which impacts the eyes
- Other diabetes medications you are taking, including insulin or sulfonylureas
- If you are pregnant, planning to become pregnant, breastfeeding, or planning to breastfeed
- Other prescription medicines, over-the-counter drugs, vitamins, or herbal supplements you have been taking, or were taking in the recent past



become pregnant, breastfeeding, or planning to breastfeed

as the active ingredient. Both face shortages in the global market.

**Semaglutide vs tirzepatide**

The FDA has approved Wegovy (semaglutide) and Zepbound (tirzepatide) for chronic weight management in adults. These drugs can be prescribed to those who are obese (with a body mass index of over 30), or overweight (with a BMI between 27 and 30), and have at least one other health condition related to their weight (such as high blood pressure, high cholesterol, or type 2 diabetes).

Both are administered as under-the-skin injections, and are intended to be used alongside a reduced-calorie diet and increased physical activity. The dosage is increased gradually, reaching a maximum dosage of 2.4 mg for semaglutide and 15 mg for tirzepatide. This does not, however, mean that the latter is 'stronger' than the former. Semaglutide and tirzepatide are polypeptides, small proteins that boost the levels of naturally-occurring hormones in the body, including that of glucagon-like-peptide 1 (GLP-1), which control weight through the brain and digestive tract.

Higher GLP-1 levels, released in the gut, trigger the sensation of satiety - the feeling of being satisfied and having had enough to eat, in the brain. They also help manage glucose levels, making them an effective treatment for diabetes. Semaglutide only targets GLP-1 receptors. On the other hand, tirzepatide also boosts a second hormone: glucose-dependent insulinotropic polypeptide (GIP). The GIP also regulates weight through receptors in brain and fat cells. Eli Lilly claims that the combined action of GLP-1 and GIP enhances each other's effects.

**Promising global trials**

Global trials for Zepbound have yielded promising results. The phase three trials involved 2,539 participants, each randomised to receive either a placebo or one of three doses of tirzepatide: 5 mg, 10 mg, or 15 mg. Over the course of 72 weeks, those on the 5 mg dose lost 15% of their body weight on average, while the 15 mg group shed 23.5%. The 15 mg group achieved a remarkable 20.9% weight reduction - this translates to someone weighing 75 kg shedding more than 15 kg. About 91% of individuals on the 15 mg dose achieved a weight loss of at least 5%.

In stark contrast, the placebo group had an average weight reduction of only 2.1%. This sustained weight reduction was accompanied by improvements in all specified cardiovascular measures. Zepbound got regulatory clearance in India based on data from these trials, in which Indians took part as well. But the

aforementioned expert committee has imposed a crucial rider - the company will have to conduct a phase IV, post-marketing surveillance trial to scrutinise side effects that might have been missed in previous trials, and the drug's efficacy among India's diverse population.

**Some side effects of the drug**

According to the company, Zepbound's most common side effects include nausea, diarrhoea, vomiting, constipation, abdominal pain, indigestion, injection-site reactions, fatigue, allergic reactions, belching, hair loss, and heartburn.

Eli Lilly specifically highlights the risk of thyroid tumours, including thyroid cancer. "Watch for possible symptoms, such as a lump or swelling in the neck, hoarseness, trouble swallowing, or shortness of breath," the manufacturer says. Individuals cannot use Zepbound if they, or any family members, have ever had medullary thyroid carcinoma (MTC, a type of thyroid cancer), or Multiple Endocrine Neoplasia syndrome type 2 (MEN2), a rare, inherited disorder that affects the endocrine glands.

Zepbound is a prescription medicine. It cannot - and should not - be used for cosmetic weight loss.

**Weight back if drug is stopped**

Obesity drugs are also not one-time miracles for weight loss - data from trials also indicate that these drugs need to continue to be taken for their weight loss and other effects to last.

In Wegovy's STEP 1 extension trial with 327 participants, those using Wegovy for 68 weeks achieved a remarkable average weight loss of 12.5%, compared to just 2.5% for those on a placebo. But after stopping the medication, by week 120, Wegovy users had regained most of their weight - effectively seeing an average weight loss of only 5.5% compared to 0.1% for the placebo group. Improvements in heart and metabolic health seen during the treatment period also tended to revert to baseline levels once the treatment was stopped.

At the end of the day, obesity is a complex, chronic, and progressive disease which has to be managed throughout one's life.

## 6. SIM Swapping Scam

### GS 3 (Science and Tech)

- **Why in News:** Google Fi wireless has introduced a security feature called 'Number Lock'. This new feature empowers users to take control and prevent a growing cybersecurity threat – SIM swapping.
- **About SIM Swapping Scam:**
  - It occurs when a **malicious actor convinces** your carrier to transfer your phone number to a new SIM card in their possession.
  - This can grant them **access to your calls, texts, two-factor authentication** codes, and potentially even financial accounts linked to your number.
  - **Modus Operandi:** In the SIM swap scam, fraudsters first take personal details such as phone numbers, bank account details, and addresses with the **help of phishing or vishing**.
  - After receiving the personal information, fraudsters visit the mobile operator's retail outlet, posing as the victim with forged ID proof, and report a fake theft of the victim's SIM card and/or mobile phone.
  - By doing this, they attain a duplicate SIM.
  - Notably, scamsters can get a duplicate SIM even when the original is working, as they reported a **theft of the original SIM card**.
  - Unlike other scams, where scamsters trick people into giving OTPs and private information on a phone call, the SIM swap scam **doesn't require direct communication** with the victims.
  - However, fraudsters do give missed calls to their victims so that the latter leave their phones and ignore the lost network connectivity.
  - When the SIM is swapped, the accused gains control of the entire SIM. All calls and messages go through their SIM only.
  - Once in control of the SIM card, they are able to obtain passwords and OTPs that allow them to access their targets' bank accounts

## 7. e-FAST India Initiative

### GS 2 (Governance)

- **Why in News:** Recently, NITI Aayog has announced the launch of the 'NITI GearShift Challenge' as part of the e-FAST India initiative.
- **About e-FAST India Initiative:**
  - e-FAST was born from the recognition of the urgent **need to decarbonize road-based freight** transportation in India to realize its 2070 net zero commitments.
  - It was launched in September 2022.
  - It aims to galvanize the transition towards **cleaner and greener freight transportation**.
  - The platform facilitates active collaborations at both the national and international levels, supports ideation and development of pilot programs on a scalable basis, and explores technology integration and associated research.
  - It is a platform that **facilitates deliberation, debates and collaboration** between different stakeholders including the government, Original Equipment Manufacturers, Logistics Service Providers, Shippers, and industry experts to enable the development and adoption of electric technology in the freight sector at scale.
  - It is supported by the collaborative efforts of 12 knowledge partners.
- **What is NITI GearShift Challenge?**
  - It was launched by NITI in collaboration with IIM Bangalore, Smart Freight Centre India, CALSTART/Drive to Zero, and **WRI India**.
  - This pioneering hackathon aims to foster innovative business models for the **adoption of zero-emission trucks (ZETs) in India**, addressing the nation's pressing economic and environmental challenges.
  - The NITI GearShift Challenge invites students, transport service practitioners, academics, and researchers to develop innovative business models that address financial, technical, and operational challenges in the adoption of electric trucks.
  - The program has garnered participation from e-FAST India knowledge partners, financial institutions, and industry forums.



**MCQ Current Affairs**  
**15<sup>th</sup> July, 2024**

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**1. The Asur Community lives primarily in which one of the following State?**

- a) Uttar Pradesh
- b) Jharkhand
- c) Assam
- d) Madhya Pradesh

**2. Upper Siang Hydropower Project, is a proposed hydropower project, located in which one of the following states?**

- a) Assam
- b) Sikkim
- c) Arunachal Pradesh
- d) Nagaland

**3. What is the primary purpose of NASA's CHAPEA Project, recently seen in the news?**

- a) To improve communication systems for deep space missions
- b) To simulate year-long stays on the surface of Mars
- c) To explore the Moon's surface
- d) To develop new propulsion systems

**4. Changthang Wildlife Sanctuary, is located in:**

- a) Uttarakhand
- b) Ladakh
- c) Arunachal Pradesh
- d) Punjab

**5. Kharchi Puja, is celebrated in which one of the following states?**

- a) Karnataka
- b) Bihar
- c) Jharkhand
- d) Tripura

**Answers Current Affairs**  
**15<sup>th</sup> July, 2024**

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1. b
2. c
3. b
4. b
5. d

