

AUGUST CURRENT AFFAIRS SHEET

EDITORIAL

Solar energy: For Amrit Kaal in agriculture

Source: Indian Express

- The famous slogan of late Lal Bahadur Shastri, “Jai Jawan, Jai Kisan,” was extended by Atal Bihari Vajpayee to include “Jai Vigyan”. Now, Prime Minister Narendra Modi has extended it to, “Jai Anusandhan”.
- The innovations (anusandhan) needed to be made in the agri-food space by 2047 to have a well-fed India, with zero hunger, almost no malnutrition, climate resilience, and high incomes for our farmers.

India has set a target to increase the country’s share of non-fossil-based installed electric capacity to 40% by 2030.

Solar power is one of the most versatile forms of energy, with boundless potential, if tapped wisely. Solar Energy can be a game changer for the Agricultural Sector in India, saving precious water resources, reducing dependency on the grid, and even becoming an additional revenue stream for farmers.

Off Grid and On Grid Solar Energy

- **On-grid** means the solar system that is tied to the local utility’s grid or utility company.
 - Utility system acts as the battery space for Solar Energy Users. It means that the surplus energy that is produced by the solar panels is sent to the grid’s power company, and in exchange a credit is generated that one can cash out at the end of the year.
 - Being grid-tied is beneficial because there is no requirement of an expensive battery back-up system to store any excess energy.
 - **Off-grid** means there is no connection to the grid’s power system or utility company.
 - This is appealing because of 100% self-sustaining energy use.
- However, there are disadvantages because off-grid systems require a back-up battery which can be expensive, bulky, and not very environmentally friendly which defeats the purpose of going solar (save money and live greener).

Potential of Solar Energy in Agriculture

Solar energy can easily fulfil energy provision and supply at agriculture farms. Various solar energy absorbing devices and systems have been developed and are in the works for agricultural applications. This includes:

- **Solar Pumping System:** It is quite helpful to operate the already burdened irrigation system in India. Specifically, solar pumps can be useful as water lifting devices in irrigation canals and also to evenly distribute water in those areas where traditional water systems could not have access, such as in the elevated hilly lands.
- **Solar Crop Drying:** Different types of solar dryers are available for various applications, which can be used for drying of agricultural products like potatoes, grains, carrots and mushrooms.
- **Solar Spraying:** The solar pesticides sprayer machine can improve their productivity for small farmers. Most pesticide spraying activity is done in the daytime, so these spray machines could be used by directly capturing solar energy, which prevents the installation of batteries in these machines.
- **Solar Powered Tractors:** Tractor converted agriculture farming into agro-industry by performing a lot of functions with the help of a variety of tools and equipment. Usually, tractors consume oil to run and work, which increases the budget

of farming and also causes the **pollution** in the atmosphere by producing **carbon dioxide** during combustion.

Solar powered tractors became a good option which could work directly under the sun by consuming **solar energy** in daytime and also could continue working in night time with the help of energy stored in batteries.

Challenges of Integrating Solar Energy with India's Agriculture Sector

- **Land Scarcity:** Per capita land availability is very low in India. **Land is already a scarce resource in India**, with its demand ranging from **farmers, industries, commercial and service institutions and the Government**.
- **Export Driven Market:** Manufacturers are mostly focused on export markets that buy Solar cells and **modules at higher prices** thereby increasing their profits.
- **Grid Integration:** The biggest challenge for the solar sector is **grid integration to the length and breadth of the country** followed by poor financial condition of **Distribution Companies (DISCOMs)**.
- **Absence of Solar Waste Management Policy:** India does not have a solar waste management policy to complement ambitious solar power installation targets.
- **Commercial Viability and Utility:** The solar energy production technique is yet to be improvised in to make it commercially viable in India.

Related Government Schemes to Enhance Solar Energy Production in India

- International Solar Alliance
- National Solar Mission
- Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM)

- One Sun, One World, One Grid (OSOWOG)

Way Forward

- **Solar as the third crop:** A few out-of-the-box innovations can almost double farmers' incomes quickly.
 - And one such innovation is to have "solar as a third crop" on fields.
 - On one acre of cultivated land, which grows two crops a year, one can have **more than 400 solar panels (trees) of 10 to 12 feet in height, with due spacing for regular cultivation to continue.**
- **Najafgarh KVK area as model:** A pilot programme in the Najafgarh KVK area revealed that farmers could earn additional **income of up to Rs one lakh/acre**, when the capital cost is being incurred by another entrepreneur.
 - This concept needs wider validation in different states with good sunshine.
 - This is the "**inclusive growth, green growth**" model that needs to supplement the solar parks model being developed by big entrepreneurs.
- **Environmental consequences:** In the **mid-1960s to emerging as the largest exporter of rice in the world (21mmt in FY22)**, we have neglected the environmental consequences that have ensued.
 - It is time to wake up now and promote climate-resilient agriculture.
- **Double farmers income:** In 2016, the Prime Minister had given a clarion call to **double farmers' incomes by 2022-23**.
 - That can be done through a **single innovation, provided he makes it a campaign and mobilizes investors, farmers, renewable power companies, and discoms** in that direction.
- **"Har Khet Main Saur Urja"(solar power in every farmer's field):** On the lines of "Har Ghar Tiranga" campaign can be beneficial on a wider scale.

**NEWS IN BREIF WITH
STATIC GK**

News- Studies on the global level suggest that 65% of humanity is lactose intolerant.

Static –

- Lactose intolerance means, the individual lacks the gene to break down lactose into adulthood.
- Beyond the age of five, lactose, a sugar present in milk, cannot be naturally broken down in the stomach and this remains in the gut causing flatulence, acidity and diarrhoea.

News- Goa and Dadra & Nagar Haveli and Daman & Diu (D&NH and D&D) became the first 'Har Ghar Jal' certified State and UT in the country respectively.

Static –

- Jal Jeevan Mission is a flagship programme of Government of India.
- launched in 2019.
- Aim - To make provision of potable tap water supply in adequate quantity, of prescribed quality and on regular & long-term basis to every rural household of the country by 2024.

News- The government has awarded Geographical Indication (GI) tag to Mithila Makhana, a move which is expected to help growers get the maximum price for their premium produce. Mithila Makhana or Makhan is a special variety of aquatic fox nut cultivated in Mithila region of Bihar and Nepal.

Static –

- A GI is primarily given to an **agricultural, natural or a manufactured product** (handicrafts and industrial goods) originating from a definite geographical territory.
- GI tag in India is **governed by Geographical Indications of Goods (Registration & Protection) Act, 1999**. It is issued by the Geographical Indications Registry (Chennai).

- This tag is valid for a period of 10 years following which it can be renewed.

News- A recent study published in Environment Science and Technology has found that rainwater from many places across the globe is contaminated with "**per- and polyfluoroalkyl substances,**" (PFAs).

Static –

- **Per- and polyfluoroalkyl substances** are called "forever chemicals" because of their tendency to stick around in the atmosphere, rainwater and soil for long periods of time.
- They are man-made chemicals used to make nonstick cookware, water-repellent clothing, stain resistant fabrics, cosmetics, firefighting forms and many other products that resist grease, water and oil.
- Since most PFAs do not break down, they remain in the environment for long periods of time

News- Lok Sabha Speaker will be travelling to Mexico where he will unveil statues of Swami Vivekananda and Pandurang Khankhoje .

Static –

Maharashtra-born freedom fighter and agriculturalist Pandurang Khankhoje (1884 – 1967) was one of the founding members of the Ghadar Party, established by Indians living abroad in 1914. In Mexico, he was appointed as a professor at the National School of Agriculture. He researched corn, wheat, pulses and rubber, developing frost and drought-resistant varieties and was part of efforts to bring in the Green Revolution in Mexico

News- India has nominated the dance form Garba to be inscribed on UNESCO's intangible cultural heritage list. If approved, it will become the first intangible cultural heritage of Gujarat to be listed by UNESCO.

Garba is a form of dance which originates from the state of Gujarat in India. Traditionally, it is performed during the nine-day Hindu festival Navarātrī. The word garba comes from the Sanskrit word for womb and so implies gestation or pregnancy — life.

News- Swiggy has launched a Moonlighting Policy allowing its employees to work on their passion projects outside of their work (calling it a step towards a “remote-first organization”).

Static –

Moonlighting is the act of working at an extra job beyond regular working hours, usually without the knowledge of the employer.

News- Bhitarkanika National Park have reached a saturation point in the population of crocodile which could lead to more human-Crocodile conflict.

Static –

It is located in Orissa. It is the second largest Mangrove ecosystems of India. The National Park is essentially a network of creeks and canals which are inundated with waters from rivers Brahmani, Baitarani, Dhamra and Patasala forming a unique ecosystem.

ONE LINER NEWS

- India's first situational awareness observatory to monitor space activity is going to be set up in Uttarakhand by Digantara. It will assist in tracking any activity in space including that of space debris and military satellites hovering over the region. The observatory will give India indigenous capabilities to monitor space activity over the subcontinent providing a strategic advantage
- External Affairs Minister Dr S Jaishankar has unveiled a bust of Mahatma Gandhi in Asuncion, Paraguay. The Minister also visited the historic Casa de la Independencia, from where Paraguay's Independence movement started more than two centuries ago.
- The appointment of **Dr N Kalaiselvi as the first woman director general of India's largest research and development organisation, the 80-year-old Council of Scientific and Industrial Research (CSIR)**, underlined a significant trend — official data show the participation of women in science research has been generally increasing over the past two decades in the country.
- Kerala has soft launched ‘Kerala Savari’, the country's first online taxi service owned by a State government.
- **Prime Minister Narendra Modi** inaugurated the 300-bed **Homi Bhabha Cancer Hospital and Research Centre** at Mullanpur, Mohali in Chandigarh.
- In Mali, the military has appointed **Colonel Abdoulaye Maiga** as **interim Prime Minister** after the country's civilian PM **Choguel Kokalla Maiga** was admitted to hospital.
- The Reserve Bank of India (**RBI**) will very likely introduce its digital rupee, the **Central Bank Digital Currency (CBDC)**, in this fiscal year itself. Talks of a **digital rupee** in the country have been swirling since Finance Minister **Nirmala Sitharaman** announced it during her **Budget 2022** speech back in February. At the time, she had said that the digital rupee would be launched in 2022-2023.
- Bangladesh-born **Fahmida Azim** working for the Insider online magazine of the US has been selected for the **Pulitzer Prize 2022** (an award for achievements in newspaper, magazine, online journalism, literature, and musical composition). She will be awarded under the category of Illustrated Reporting and Commentary.
- Assam Chief Minister, Himanta Biswa Sarma has launched the ‘Vidya Rath - School on Wheels’ project
- **World Water Week 2022** takes place from **23 August to 1 September**. The World Water Week is an annual event organized by **Stockholm International Water Institute (SIWI)** since 1991 to address the global water issues and related concerns of international development. The theme of the 2022 World Water Week is: “**Seeing the unseen: The value of water**”, which helps us view water in new and fascinating ways.