OECD-FAO Agricultural Outlook 2025-2034

For Prelims: Organisation for Economic Co-operation and Development, Food and Agriculture Organization, Biofuels, Ethanol

For Mains: Food Security vs. Biofuel Production, Impact of biofuel policies on food systems, Agricultural productivity

Source: DTE

Why in News?

The **Organisation for Economic Co-operation and Development (OECD)** and the **Food and Agriculture Organization (FAO)** ***Agricultural Outlook 2025-2034*** report, offers a 10-year outlook on global agricultural and fish markets to guide evidence-based policymaking.

What are the Global Market Trends According to OECD-FAO Agricultural Outlook 2025-2034?

- **Cereal Production and Biofuel Demand**: **Global cereal production** is expected to grow at **1.1% annually**, driven largely by **yield increases** (0.9% per year). However, the expansion of harvested area will slow to **0.14%** annually through 2034.
    - By 2034, **40% of cereal production** will be consumed directly by humans, while **33%** will be used for **animal feed** and **27%** will be diverted to **biofuels and industrial uses**.
        - By 2034, **India and Southeast Asia will drive 39% of global cereal consumption growth**, while China's share will fall to 13% from 32%, reflecting changing consumption trends.
    - **Biofuel demand** is projected to grow at **0.9% annually**, primarily due to increases in countries like **Brazil, India, and Indonesia**.
- **Agricultural and Fish Commodity Growth**: Global agricultural and fish production is projected to grow by **14%** through 2034, primarily driven by **productivity gains in middle-income nations**.
    - However, this growth will also lead to a **6% increase in agricultural greenhouse gas emissions**.
- **Rise in Animal Product Consumption**: Global **per capita calorie intake** from **livestock and fish products** is expected to increase by **6%** over the next decade, driven by growth in **lower-middle-income countries**, where intake is anticipated to rise by **24%** nearly four times the global average.
    - This increase will raise daily intake in lower-middle-income countries to **364 kcal**, but **low-income countries** will remain far behind, with an intake of just **143 kcal**, well below the **300 kcal/day** target for a healthy diet.

How does the Rising Demand for Biofuels Impact Global Food

Security?

- **Land Use:** Growing **biofuel crops can reduce land available for food production**. To meet the **E20 target**, India would need 7.1 million hectares (around 3% of its total cropped area), raising serious concerns about land use and food security.
- **Pressure on Water and Resources:** Biofuel crops require significant water (ethanol production uses **8-12 liters of water per liter of ethanol)** and fertilizers, straining resources needed for food farming.
- **Food Inflation:** Biofuels raise food prices by increasing demand for feedstock crops. India's ethanol shift to **maize and rice may divert food supplies,** with rice prices **rising 14.5% in 2023,** hitting poor households hardest.
    - Poorer nations face greater risks of food insecurity due to reduced **access and affordability.**
- **Environmental Trade-offs:** Expansion of biofuel crops can lead to deforestation and biodiversity loss, indirectly affecting food systems.

How Can Sustainable Biofuel and Food Security Policies Be Ensured?

- **Feedstock Diversification**: Promoting **3G ethanol** (from microalgae using wastewater/sewage/seawater) offers a sustainable alternative to 1G (sugarcane, wheat, rice) and 2G (crop residues) biofuels, avoiding food and water stress.
    - India can also invest in developing **genetically modified (GM) crops** specifically tailored for biofuel production to boost yields and reduce pressure on food crops.
- **Zoning and Land Use Planning:** Implement a biofuel zoning policy that prevents diversion of fertile agricultural land.
    - Use marginal and wastelands for biofuel crops under strict ecological safeguards to avoid deforestation or biodiversity loss.
- **Crop Diversification Incentives:** Strengthen **Minimum Support Prices (MSP)** and procurement for diverse food grains to counter biofuel-driven monocultures.
    - Align ethanol procurement policies with food surplus seasons to avoid market distortion.
- **Improving Productivity and Sustainability**: Increased agricultural productivity is critical to reduce **undernourishment** and curb **GHG emissions**.
    - The report suggests that global undernourishment could be eradicated and emissions reduced by **7%** with **15% productivity improvements** and investments in **emissions-reduction technologies** (e.g., precision farming, livestock feed enhancements, and low-cost practices like crop rotations).

Organization for Economic Co-operation and Development (OECD)

- OECD is an intergovernmental body established in 1961 to promote economic growth and global trade. **Headquartered in Paris, France** it has 38 member countries, mostly high-income nations with high **Human Development Index (HDI).**
    - While **India is not a member, it is a key economic partner**.
    - The OECD releases several important reports and indices, including **Government at a Glance and the Better Life Index.**

Food and Agriculture Organization (FAO)

- The **FAO is the UN's oldest specialized agency,** founded in 1945, with headquarters in Rome. Its mandate is to **fight hunger, improve nutrition, and promote sustainable agriculture.**
    - With 194 member states and the EU, FAO supports countries through research, technical aid, education, and data services.
    - It focuses on agriculture, forestry, fisheries, and resource management, but food relief is handled by the **World Food Programme**.
    - Key reports include **State of World Fisheries and Aquaculture (SOFIA), State of the World's Forests (SOFO), State of Food Security and Nutrition in the World (SOFI),**

and State of Food and Agriculture (SOFA).

Drishti Mains Question:

Discuss how the rising global demand for biofuels is creating trade-offs between food security.

UPSC Civil Services Examination, Previous Year Questions (PYQ)

Prelims

Q. Given below are the names of four energy crops. Which one of them can be cultivated for ethanol? (2010)

(a) Jatropha

(b) Maize

(c) Pongamia

(d) Sunflower

Ans: (b)

Q. According to India's National Policy on Biofuels, which of the following can be used as raw materials for the production of biofuels? (2020)

1. Cassava
2. Damaged wheat grains
3. Groundnut seeds
4. Horse gram
5. Rotten potatoes
6. Sugar beet

Select the correct answer using the code given below:

(a) 1, 2, 5 and 6 only

(b) 1, 3, 4 and 6 only

(c) 2, 3, 4 and 5 only

(d) 1, 2, 3, 4, 5 and 6

Ans: (a)