Weather-Proofing Food Security

This editorial is based on **How to weather-proof food security** which was published in The Indian Express on 15/05/2023. It discusses Food Security and the impact of weather on it and suggests some way forward for weather proofing of food security.

For Prelims: Issues of Buffer Stocks and Food Security, Inflation, Ocean Acidification, G20, El Nino, Public Distribution System (PDS)

For Mains: Issues of Buffer Stocks and Food Security, Food security and its significance, Impact of weather on it and Way Forward

Weather patterns, including temperature, precipitation, and extreme weather events, are critical factors in determining agricultural productivity and food security.

Changes in weather patterns can lead to crop failures, food shortages, and price hikes, which can have far-reaching impacts on the livelihoods of millions of people around the world.

For example, droughts and floods can destroy crops, leading to food shortages and price spikes, while extreme temperatures can reduce crop yields and quality. These impacts are particularly acute in developing countries, where many people depend on agriculture for their livelihoods and may lack access to alternative sources of food or income.

What is Food Security?

- Food security, as defined by the United Nations' Committee on World Food Security, means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life.
- Food security is the combination of the following three elements:
    - **Food availability** i.e., food must be available in sufficient quantities and on a consistent basis. It considers stock and production in a given area and the capacity to bring in food from elsewhere, through trade or aid.
    - **Food access** i.e., people must be able to regularly acquire adequate quantities of food, through purchase, home production, barter, gifts, borrowing or food aid.
    - **Food utilization** i.e., Consumed food must have a positive nutritional impact on people. It entails cooking, storage and hygiene practices, individuals' health, water and sanitations, feeding and sharing practices within the household.
- Food security is closely related to household resources, disposable income and socioeconomic status. It is also strongly interlinked with other issues, such as food prices, global environment change, water, energy and agriculture growth.
- **Importance of Food Security for a Nation:**

- For boosting the agricultural sector.
- For having control on food prices.
- For economic growth and job creation leading to poverty reduction
- For trade opportunities
- For increased global security and stability
- For improved health and healthcare

Why there is a Need of weather proofing Food Security?

- **Climate Change** is a crisis aggravator and threat multiplier for the most vulnerable amongst us. Its impact on food production, livelihoods and health is expected to push an additional 600 million people into food insecurity by 2080 and increase child malnutrition.
- About 80% of the global population most at risk from crop failures and hunger from climate change are in Sub-Saharan Africa, South Asia, and Southeast Asia, where farming families are disproportionally poor and vulnerable.
- A severe drought caused by an **El Nino** weather pattern or climate change can push millions more people into poverty.

What are the impacts of Weather on Food Security?

- **Crop Yield and Production:**
  - Rising temperatures, changing precipitation patterns, and extreme weather events such as **droughts**, **floods**, and storms can have detrimental effects on crop yields.
  - **Heatwaves** and **droughts** can reduce productivity and lead to crop failures, while excessive rainfall and floods can destroy crops and infrastructure.
  - These disruptions in agricultural production can result in decreased food availability and increased prices.
- **Changing Growing Conditions:**
  - **Climate Change** alters the suitability of certain regions for specific crops.
  - Shifts in temperature and rainfall patterns may require farmers to adapt their practices or even switch to different crops.
  - This can lead to disruptions in food production and regional food imbalances.
- **Livestock and Fisheries:**
  - Rising temperatures, changing precipitation patterns, and **ocean acidification** affect livestock and fish production.
  - Heat stress can reduce livestock productivity and increase mortality rates, while changes in water temperature and acidity can impact marine ecosystems and reduce fish populations.
- **Food Distribution and Access:**
  - Climate change can disrupt transportation and infrastructure, making it challenging to transport food from production areas to markets.
  - Extreme weather events can damage roads, bridges, and ports, leading to delays and higher transportation costs.
  - These disruptions can limit people's access to food, particularly in vulnerable regions or those heavily dependent on imported food.
- **Price Volatility:**
  - Climate change-related disruptions in agricultural production can lead to increased price volatility for food commodities.
  - Crop failures, reduced yields, and decreased supply can cause food prices to spike, making it difficult for vulnerable populations to afford an adequate diet.
- **Land Degradation and Water Scarcity:**
  - Climate change contributes to soil erosion, **desertification**, and degradation of arable land.
  - Extreme weather events, such as heavy rainfall and floods, can wash away topsoil, essential for agriculture, and degrade soil fertility.

Why is containing Food Inflation Crucial?

- **Significance:**

    - The food and beverages component in the Indian CPI has a weightage of 45.86 %, the highest amongst G20 countries.
    - Managing this component to around 4 % is critical to taming overall inflation.
- **Challenges:**
    - **Monetary and Fiscal Policy Challenges:** This component of inflation cannot be managed only through monetary policy, nor even by fiscal policy.
        - The simple reason is that it is often triggered by external shocks, such as droughts and breakdown of supply chains — for instance, during the Covid pandemic and the Russia-Ukraine conflict.
    - **El Nino:** The brewing El Nino is a looming danger and it's feared that it could cause below normal rainfall, even a drought.
    - **Cereal Inflation:** The overall cereal and products inflation is still at a very uncomfortable level, 13.7 %.
        - **Rice Inflation:** The biggest crop of the kharif season is rice. And rice inflation (non-PDS) for April was 11.4%.
        - **Wheat inflation:** Wheat is the most important rabi crop — is still very high at 15.5%.
    - **Milk Inflation:** Inflation in this category in April was more than 8%. But since it has the highest weight amongst 299 commodities that comprise the CPI basket, its contribution to CPI inflation in April was almost 12%, the highest amongst all commodities.
    - **Fodder Price Inflation:** The fodder price inflation has been very high, between 20 and 30 %, in recent months. It has further exaggerated the Milk Inflation.

El Nino

- El Nino is a naturally occurring climate pattern associated with warming of the ocean surface temperatures in the central and eastern tropical Pacific Ocean. It occurs on average every two to seven years, and episodes usually last nine to 12 months.
- El Nino affects the sea surface temperature in the Pacific Ocean, which can weaken the monsoon or trade winds, and decrease rainfall over India. But a positive **Indian Ocean Dipole (IOD)** can offset this effect.

What should be the Way forward?

- **Use the Buffer Stocking Policy (unloading excess stocks in open market operations) more proactively:**
    - The rice stocks with the **Food Corporation of India (FCI)** are more than three times the buffer stock norms for rice. If the government wants to tame rice price inflation, it can unload rice from the Central Pool in open market operations, and easily bring down the rice inflation to around 4%.
    - The wheat procurement has been sufficiently good to meet the requirements of the **public distribution system (PDS)** and give some room for open market operations.
- **Lower Import duties on Fat:** The policy instrument to use is to lower import duties on fat, which are currently at 40% and skimmed milk powder (SMP), which is at 60%.
    - Indian prices of SMP and fat (butter) are much higher than the global prices, and therefore, by reducing import duties to say 10 to 15%, there would be some imports of fat and SMP.
    - That could help in reining milk and milk product prices.
- **Address the Challenge of Fodder Price Inflation:** Cultivation of Fodder crops must be promoted through subsidy or incentive programs. It can also be addressed through initiatives like adopting suitable crop combinations and developing fodder banks.
- **Be Prepared for Drought:** Though IMD is yet to forecast about the Impact of El Nino, but prevention is always better than cure. Policy interventions like introducing drought-tolerant crop varieties, expanding irrigation, restricting rice exports, storing and distributing grains, expanding social protection coverage can help reduce the impact of climate.

Drishti Mains Question:

As the year 2023 is supposed to be an El Nino Year, discuss the impact of weather on food security and suggest some measures to maintain the Food Security in India.