

**1. Differentiate between direct and indirect farm subsidies. Examine the distortionary effects of some of these subsidies.**

**Introduction**

An agricultural subsidy is a government incentive paid to agribusiness, agricultural organizations and farms to supplement their income manage the supply of agricultural commodities and influence the cost and supply of such commodities.

**Body**

**The issue of farm subsidies:**

- India and china have jointly submitted a proposal to the World Trade Organization (WTO) for rich countries to reduce high agricultural subsidies.
- The reduction process should begin in 2019 to “remove asymmetry” in the WTO’s agreement on agriculture and eliminate distortions in global trade.
- India’s agricultural subsidy is less than 10 per cent of the market value of total agricultural production. It is far less compared to the developed countries.
- The WTO has allowed them higher amounts beyond ceiling levels. Any meaningful attempt at reforms in agriculture subsidies must address the asymmetry between the developed members and developing members.

Direct subsidies	Indirect subsidies
<ul style="list-style-type: none"> <li>• The beneficiary purchases the good at market price and the subsidy is transferred to him in the form of cash transfer.</li> <li>• Mostly in developed countries.</li> <li>• Have direct impact on farmers’ expenditure and their life.</li> <li>• More efficient system, because free hands to use money.</li> <li>• Individual targets to reach the benefits</li> </ul>	<ul style="list-style-type: none"> <li>• The goods are made available at a lower/subsidized price, credit facilities, loan waiver, reduction in bills etc.</li> <li>• Mostly in developing countries.</li> <li>• Have implicit impacts, as some part of money paid at required end.</li> <li>• Less efficient system, because of less coordination.</li> <li>• Mass target of the people to reach the benefits.</li> </ul>

Though it is a good measure to address the plight of the farmers, it can also have an adverse effect in the free markets, which can be highlighted as follows:

- Subsidies directed by the United States government, particularly to corn farmers, can have a spill over affect in developing countries like India. Subsidies granted to the farmers of developed countries are way higher than

that given to Indian farmers, thus it can cause distortion to the domestic market of domestic markets as well.

- Fertilizers subsidy, especially UREA when made available cheaply has resulted in overuse, which degraded soil quality, and in return affected the output productivity. Low productivity of Punjab in wheat can be attributed to above cause.
- Also subsidise acts as a barrier for entry to the developed market like European Union who held that India's agricultural products are not up to the mark of WTO's phytosanitary measures.
- Farm related equipment production units are running inefficient in countries like India owing to lack profits and efficient managements due to irrational subsidies, which drain up their capital reserves in long run thus affecting investment in cleaner technologies. These give rise to environmental damages.
- While the developing countries like India and China are not in an affordable position to breach the de-minimus level of Aggregate measures of support(AMS), developed countries like US provides subsidies exceeding 50% in some products such as Canola, cotton, sugar and more than 200% for wool.
- Most benefits of subsidies are allotted to big farmers while in India, 2/3<sup>rd</sup> farmers are marginal farmers which can't utilize the benefit of subsidy properly. Thus the value of produce of such farmer's decrease.
- It leads to overproduction of one crop over other like fruit, pulses). Thus sometimes grains are piled up for rotting in warehouse.
- Also in market, the trade of such cereals take place on the expanse of other non- subsidised products.

Example: The recent trade war between United and China is also the political consequences of the ill effects of subsidies, provided by a particular nation haphazardly. Therefore, complete compliances with the WTO mandated de-minimus level for both developed and developing countries have to committed by all parties.

### Way forward

- India and China have demanded the developed nations at WTO to cut down the farm subsidies under the agreed multilateral trade rules. In WTO parlance, the subsidies are called Aggregate Measurement of Support (AMS) or Amber Box support.
- India and China believe that elimination of AMS should be the starting point of reforms rather than seeking reduction of subsidies by developing countries.

**2. How far the Minimum Support Price (MSP) scheme has addressed agrarian distress in India? What other measures need immediate rollout for effective mitigation of agrarian distress? Suggest.**

**Introduction:**

Minimum Support Price (MSP) is a form of market intervention by the Government of India to insure agricultural producers against any sharp fall in farm prices. The Government of India announces them at the beginning of the sowing season for certain crops on the basis of the recommendations of the Commission for Agricultural Costs and Prices (CACP) for 23 crops.

**Body:****Success of Minimum Support Price:**

- From a situation of massive shortages, India has emerged as a grain surplus country.
- Food security has been achieved at national level.
- There has been an increase in production of grains especially in cereals.
- Food prices have remained stable.
- Increase in agricultural income of farmers.
- Economic transformation in well irrigated regions of Punjab, Haryana, Maharashtra, etc.,

However, there have been certain issues which have hampered the success of MSP such as:

- **Poor Awareness:** NITI Aayog found that only a low proportion of farmers (10%) was aware of MSPs before the sowing season. 62% of the farmers were informed of MSPs after sowing their crops.
- **Non remunerative Price:** It was found in many States that farmers were unable to get cost of cultivation from MSP announced by the government.
- **Distorted Cropping Pattern:** MSP has put excessive focus on Wheat, Rice and Sugarcane in the procurement at the expense of pulses, oilseeds, coarse grains etc., which has resulted in depletion of water resources, soil degradation and deterioration in water quality in some states, especially in the north-western region.
- **Regional Discrimination:** It has discriminated against eastern states where procurement at the MSP is minimal or non-existent.

- Fiscal Cost: Subsidy burden of MSP has substantial bearing on Fiscal health and inflationary trend in economy. A recent hike in MSP has also raised question about India subsidy limit defined by WTO.

**Other measures which need immediate roll out for effective mitigation of agrarian distress:**

The Swaminathan commission had recommended several path-breaking measures to resolve agrarian distress in India. These recommendations are of a more vital nature and in all likelihood will provide a long-term solution to the agrarian crisis and farmers distress.

Some of the recommendation are:

- Effective implementation of land reforms
- Proper irrigation facilities in rain fed areas.
- Increasing productivity of farms
- Technological advancement
- Improve opportunities for assured and remunerative marketing.
- Manufacturing sector must absorb excess labour force from the agriculture sector
- Public investment in agriculture infrastructure
- Promotion of rural nonfarm sectors

**Conclusion:**

The most important goal of any long-term agriculture development policy in India should be to promote agriculture growth along with regional equity and natural resource sustainability. The regional equity and resource sustainability is a precondition for achieving nutritional security and balanced production. The Government must therefore look into the issues of MSP for their appropriate redressal.

**3. What are the essential components of food security? What measures has the government taken to ensure food security in our country? Are they enough?**

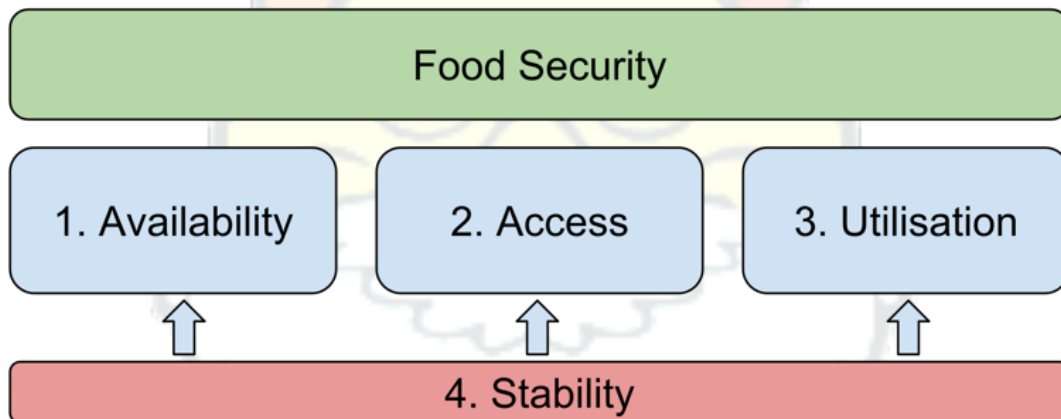
**Introduction**

As per World Food Summit, Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.

**Body**

The components of food security are:

- Availability- Food availability addresses the “supply side” of food security and is determined by the level of food production, stock levels and net trade.
- Access- Having adequate income or other resources to access food. It incorporates affordability, allocation and preference for food.
- Utilization/consumption- Having adequate dietary intake and the ability to absorb and use nutrients in the body. It includes nutrition, safety and social value regarding food.
- Stability- Stability of the above three components on periodic basis. Adverse weather conditions, political instability, or economic factors (unemployment, rising food prices) may have an impact on food security status.



Measures by government-

Availability:

- Green revolution- Use of hybrid seeds, irrigation, subsidies to increase agricultural yield.
- Operation flood- Increase in production of milk, which is considered a complete food.
- Minimum Support Price- The MSP helps to incentivize the framers and thus ensures adequate food grains production in the country.

Access:

- National Food Security Act- The Targeted Public Distribution System (PDS) ensures ‘Right to food’ for the population.
- MGNREGA- To make rural people self-sufficient to buy food for themselves.
- Mid-day meal scheme- To provide sufficient calories intake in children.

Utilization:

- Integrated Child Development Services (ICDS)- To ensure holistic development of children up to six years of age
- FSSAI- It ensures quality of food products being supplied in the market.

Stability:

- Operation greens- To ensure price stability of potato, tomato and onion.
- Focus on Employment generation to ensure affordability of food.
- Pradhan Mantri Krishi Sinchai Yojana- To ensure adequate food production in rainfed areas.

India has taken care of the availability of food and is now a food surplus country from being food deficit once. The affordability of food has also been ensured to a large extent by public distribution system and the 'right to food'.

However, the utilization and stability parts are not yet implemented properly:

- Huge under nourishment- Malnourishment stands at 38.4% as per NFHS-4. Recent outbreak of encephalitis is also attributed to malnutrition to some extent.
- Hidden hunger- Having a cereal centric diet has resulted in lack of micronutrients in people.
- Rainfall failure- During drought conditions, we suffer from food availability due to improper water management and lack of proper irrigation.
- Fluctuations in food prices- Due to faulty agricultural policies and distribution systems, there is often fluctuations in prices in food commodities, with one season seeing a spike in prices and another seeing a price crash.

Measures that can be taken:

- Implementing universal PDS (As per Swaminathan committee recommendations). Focusing on diversification of food basket.
- Integrated nutrient management through precision farming- Attention needs to be given to balanced use of nutrients.
- Use of biotechnology- Bio fortification of food, like rice with Vitamin A will enhance the nutritional value of food.
- Improving the distribution systems and storage capacity of FCI.
- Agricultural research education needs to be improved- Agricultural colleges and universities need to disseminate scientific knowledge and skills to the farming community and to train them to use such skills for better output.

## Conclusion

Achieving the goal of zero hunger under SDG Goal 2 by 2030 can be achieved if we focus not only on availability of food but also on the quality and affordability as well as ensuring a stable price regime.

**4. Suggest a roadmap to tap India's real potential in the livestock sector. Identify key focus areas to achieve the same.**

**Introduction:**

Livestock plays an important role in the Indian economy. About 20.5 million people depend upon livestock for their livelihood. Livestock provides a livelihood to two-thirds of the rural community. It also provides employment to about 8.8 % of the population in India, largely to rural women. The livestock sector contributes 4.11% GDP and 25.6% of total Agriculture GDP.

**Body:**

Animal husbandry is an integral component of Indian agriculture. Livestock provides nutrient-rich food products, draught power, dung as organic manure and domestic fuel, hides & skin, and are a regular source of cash income for rural households. They are a natural capital, which can be easily reproduced to act as a living bank with offspring as interest, and insurance against income shocks of crop failure and natural calamities.

According to the 19th Livestock Census, Livestock resources of India are as follows:

- World's highest livestock owner at about 512.05 million.
- First in the total buffalo population in the world - 105.3 million buffaloes.
- Second in the population of cattle and goats - 140.5 million goats.
- First in milk production in the world.
- Second largest poultry market in the world - production of 63 billion eggs and 649 million poultry meat.
- Third in the population of sheep (72 million).
- Fifth in the population of ducks and chicken.
- Tenth in camel population in the world.

Still, there remains a huge gap between the potential and the realized yields in Indian livestock. Only 50-60% of the livestock potential is realized in different regions of the country because of constraints related to feeding, breeding, health and management.

**Areas which need to be focused to realize the true potential of Livestock:**

In order to harness the full potential of livestock following areas need attention.

**Feeding:**

- Livestock derives a major part of their energy requirement from agricultural byproducts and residues. Hardly 5% of the cropped area is utilized to grow

fodder. India has a deficit in dry fodder by 11%, green fodder by 35% and concentrates feed by 28%. The common grazing lands too have been deteriorating quantitatively and qualitatively.

**Scientific Advancement:**

- Improving productivity in a huge population of low-producing animals is one of the major challenges. The average annual milk yield of Indian cattle is 1172 kg which is only about 50% of the global average. Likewise, the meat yield of most species is 20-60% lower than the world average.
- Crossbreeding of indigenous species with exotic stocks to enhance the genetic potential of different species has been successful only to a limited extent owing to a deficiency in the quality germplasm, infrastructure and technical manpower.

**Health Services:**

- Frequent outbreaks of diseases continue to affect livestock health and productivity. India has about 55000 veterinary institutions including polyclinics, hospitals, dispensaries and stockman centres. Veterinary and animal health services are largely in the public sector domain and remain poor.

**Trade and Market mechanism:**

- Globalization will create avenues for increased participation in international trade, stringent food safety and quality norms would be required. The global market for animal products is expanding fast and is an opportunity for India to improve its participation in the global market.
- Access to markets is critical to speed up the commercialization of livestock production. Except for poultry products and to some extent for milk, markets for livestock and livestock products are underdeveloped, irregular and lack transparency. Further, these are often dominated by informal market intermediaries who exploit the producers. Moreover, marketing and transaction costs of livestock products are high taking 15-20% of the sale price.

**Finance:**

- The sector received only about 12% of the total public expenditure on agriculture and allied sectors, which is disproportionately lesser than its contribution to agricultural GDP. The sector has been neglected by financial institutions.



**Institutional Support:**

- The institutional mechanisms to protect animals against risk are not strong enough. Currently, only 6% of the animal heads (excluding poultry) are provided insurance cover.
- Only about 5% of the farm households in India access information on livestock technology. These indicate an apathetic outreach of the information delivery systems.

**Supporting Facilities:**

- Slaughtering facilities are too inadequate. About half of the total meat production comes from un-registered, make-shift slaughterhouses.
- Develop Forward linkages for wool, fibre, meat and milk such as cold storage, food processing industries and textile industries for the consumption of livestock produced.

**Schemes/Policies Launched for the Livestock Sector by the Government:**

- Rashtriya Gokul Mission
- National Programme for Bovine Breeding and Dairy Development (NPBBD)
- National Livestock Mission: Which has 4 sub-missions in it,
  - Sub-Mission on Fodder and Feed Development
  - Sub-Mission on Livestock Development
  - Sub-Mission on Pig Development in North-Eastern Region
  - Sub-Mission on Skill Development, Technology Transfer and Extension

**Conclusion:**

The growth in the livestock sector is demand-driven, inclusive and pro-poor. The extent to which the potential of livestock can be harnessed would depend on how technology, institutions, policies and financial support address the constraints of the sector. The growth of the livestock sector would have more effect on poverty reduction and will contribute to Doubling farmer income by 2022.

**5. Use of ICT in agriculture can achieve the troika of empowerment, enablement and expansion. Elucidate.**

**Introduction:**

The relevance of ICT for Agricultural Development in general and for Agricultural empowerment and enablement in particular is extremely high for a country like India. E-agriculture involves the conceptualization, design, development, evaluation and application of innovative ways to use information and

communication technologies in the rural domain, with a primary focus on agriculture.

**Body:**

**Empowerment:**

- **Strengthen and empower farming community:** ICT technologies can help for strengthening farming communities through wide networking and collaborations with various institutes, NGO's and private sectors. Further, farmers may enhance their own capacities through updated information and wide exposure to scientific, farming and trade community.
- **Empowerment of women:** In rural India, the percentage of women who depend on agriculture for their livelihood is as high as 84%. Women make up about 33% of cultivators and about 47% of agricultural labourers, making them an important client for ICT. It is recommended that appropriate digital strategies designed where Women Self Help Groups (like Jeevika in Bihar) can take advantage to enhance their competencies for its utilization.
- **Rural development:** Safe rural life with equivalent services to those within the urban areas, like provision of distance education, telemedicine, remote public services etc.
- **Digitization of Land Records:** Maintenance of land records and the availability of easily accessible land information. Some of the initiatives in various states include, Rajasthan: Apna Khata; Chhattisgarh: Bhuiyan; Haryana : Jamabandi; Himachal Pradesh : HimBhoomi; Karnataka: Bhoomi; Kerala; Madhya Pradesh; Odisha: Bhulekh; Uttar Pradesh; Uttarakhand: Dev Bhoomi and West Bengal: Banglar Bhumi

**Enablement:**

- **The timely availability of right information:** The timely information and practical solutions of the agricultural problems allows the farmers to adopt good agricultural practices, make better choices of inputs and to plan the cultivation properly. Its proper utilisation is indispensable for agriculture. Ex: Kisan Call Centres, M-Kisan etc.
- **Improve farm management and farming technologies:** Help farmers carry out economical farm management, risk management considering off-farm factors like environmental impacts, market access, and trade standards with IT based call web support analysis on optimum farm production, disaster management, agro environmental resource management etc., through tools like geographic Information systems (GIS), remote sensing for soil quality assessment.

- **Allows detection of animal disease:** Management and recovery choices of animal diseases enables the farmers to make quick decisions and safeguard their livestock from further health problems. Ex: National Animal Disease Referral Expert System (NADRES) which is a forewarning animal disease system.

**Expansion:**

- **Facilitate the outreach of agricultural extension system in the country:** ICT based initiatives can be taken for propagation of information, transfer of technology, procurement of inputs and selling of outputs in a way so that farmers can be benefitted.
- **Widen Market Access:** One of the major drawbacks in Indian agriculture is complex distribution channels for marketing of agricultural produce. Farmers do not get acquainted with the updated prices of commodities, proper place for selling their inputs and consumer trends also. ICT has the great potential to widen marketing horizon of farmers directly to the customers or other appropriate users for maximum benefit. This can improve a farmer's source of revenue; empower farmers for making good decisions about appropriate future crops and commodities and marketing channels to sell their produce as well as to get inputs
- **Initiate new agricultural and rural business:** like e-commerce (Ex: E-choupal, AGMARKNET) realty business for satellite offices, rural business, and virtual corporation of small-scale farms, Agricultural Commodity Trading through NCDEX, NMCE etc.
- NIC, apex body for digital India has a dedicated department for agriculture, which can be used to promote ICT in agriculture by providing cloud services and etc. Further, channelizing things through one gateway will also avoid duplicity of efforts.

**Conclusion:**

Technological empowerment is essential for evergreen revolution and E-agriculture has the potential to put India on the higher pedestal of 'Second Green Revolution' by making Indian agricultural sector self-sufficient. However, digital agricultural interventions need to be pro-poor i.e. technology should be economical and affordable in adoption and implementation.