1. While economic liberalisation has done well to untie the manufacturing and service sectors, the agricultural sector hasn't yet been liberalised in the true sense. Do you agree? Critically examine.

Approach:

It expects student to write about - in first part write impact of economic liberalisation on manufacturing and service sectors - in second part its impact on agriculture sector (both positive and negative) - in third part write way forward

Introduction:

In the recent past, India has seen a rapid transformation in her economy yielding a different perspective altogether for the country from rest of the world. The economic reforms of 1991 (liberalization, privatization and globalization) not only affected our economy but also affected the way we live dramatically.

Body:

Impact of economic liberalisation on manufacturing and service sectors:

- Positive impact:
    - The industrial sector of India was passing through a period of recession prior to the policy of liberalisation. The foreign and private investment has checked the recession trend. This happened because of the massive investment in modernisation, expansion, and setting up of many new projects.
    - Industries like automobiles, auto-components, coal-mining, consumer electronics, chemicals, food-processing, metal, petrochemicals, software, sport-goods, and textiles have undergone a growth rate of about 25 per cent. In addition to these, other industries, like crude-oil, construction, fertilisers, and power generation have shown an increase of about 15 per cent.
    - The heavy investments in industries and infrastructure by the Indian and foreign investors have generated great employment opportunities for the professionals, and skilled and unskilled workers.
    - There is a phenomenal increase in export after liberalisation. Simultaneously India is importing raw materials, machinery, and finished products. Despite heavy imports, there has been a tangible improvement in the balance of payment. In this case globalization has been boon for developing countries and bane for developed ones.
    - Due to historic economic disparity between two groups, human resources have been much cheaper in developing economies. This was further facilitated by IT revolution and this all culminated in exodus of numerous jobs from developed countries to developing countries.
    - Software, BPO, KPO, LPO industry boom in India has helped India to absorb a big chunk of demographic dividend, which otherwise could have wasted. Best part is that export of services result in export of high value. There is almost no material exported which consume some natural resource. Only

thing exported is labour of Professionals, which doesn't deplete, instead grows with time. Now India is better placed to become a truly Knowledge Economy.

- Exports of these services constitute big part of India's foreign Exchange earnings. In fact, the only three years India had Current Account surplus, I.e. 2000-2002, was on back of this export only.
- Further, in banking too India has been a gainer. Since reforms, there have been three rounds of License Grants for private banks. Private Banks such as ICICI, HDFC, Yes Bank and also foreign banks, raised standards of Indian Banking Industry. Now there is cut through competition in the banking industry, and public sector banks are more responsive to customers.

- Negative impact:
  - Liberalisation in a country like India has adversely affected the traditional cottage and small scale industries which are unable to compete with the large-scale industries established by the multinationals.
  - The cottage and small scale industries need protection in the form of subsidies, technology, technical access, funds, and network to export their products, Indian traditional workers such as silk workers of Bihar are threatened by the imported synthetic silk.
  - The latest technology, being sophisticated, replaces labour and thus results in unemployment. This may be counterproductive and detrimental to our industrial structure.

Impact of economic liberalisation on agricultural sectors:

- Positive impact:

  Raising the Production of Food grains: Total production of food grains has increased from 176.4 million tonnes in 1990-91 to 211.9 million tonnes in 2001-02. It is felt that if the country maintains 4 per cent growth rate in agricultural production, then after meeting its domestic demand, the country can export the surplus amount of food grains to the foreign countries.

  - Increasing Trend in Horticultural Output: With the increase in the production of fruits, vegetables and other horticultural products, the value of exports of these products has continuously been increasing. Total value of exports of fruits, vegetables and pulses was recorded to be Rs. 1,029 crores in 1998-99 against Rs. 216 crores in 1990-91. The value of exports of fruits and vegetables alone stand at 414 crores in 1997-98. Thus horticultural exports of the country contribute nearly 25 per cent of the total agricultural exports.
  - Diversification of Agriculture: Agriculture is not only meeting the demand for food-grains but also other needs of development. In recent years, agricultural sector has been diversified to produce commercial crops and horticultural crops viz., fruits, vegetables, spices, cashew, arecanut, coconut and floricultural products like flowers, orchards etc. dairy and other animal husbandry products. The demand for these products has been increasing considerably. Thus, there is an ample scope for the

development of agricultural sector both in terms of increased production and trade.

- Agricultural Exports: Another important emerging trend of agriculture is the increasing volume of agricultural exports. Agricultural exports are playing an important role in expanding economic activities along with generating employment opportunities. Accordingly, the total value of agricultural and allied exports of India has increased from Rs. 6295.2 crore in 1991-92 to Rs. 23,691 crores in 1999-2000 i.e. 18.8 per cent of country's total exports as compared to that of only 10.59 per cent in 1992-93.
- Rising Productivity of Agricultural Resources: Another impact of liberalisation has been felt that it boosted the productivity of agricultural resources. Improvement in the productivity of resources is being done through better allocation of resources and latest technology between different areas under present circumstances. Stress is laid on export oriented policies, applying new improved technologies in food processing and marketing and giving stress on planting crops as per geographical suitability.

- Negative impact:
  - Competition from global brands due to opening of sector
  - Forum like WTO pressurizing to tone down security net for agriculture sector
  - Input cost for agriculture is also effected by global events. Tension in Eurasian region can cause fluctuation in price of P fertilizers.
  - Prices in global markets able to impact local prices e.g.- sugar industry
  - Patenting of local products by multinational brands e.g.- Jamun, Neem, Turmeric
  - Cash crop demand increase farmer focus on these crops. But demand and price of these crops may fluctuate. This has major implication when farmer deviate from food crops. This have issues for countries food security.
  - More importantly, economic liberalisation has shifted the public discourse from agriculture to industry. Globalisation has indirectly led to industrial growth. This needs land and resultantly increase in displacement of farmers.

Conclusion:

The 1991 reforms focused too much on market and hence balance needs to be restored by the state intervention. There has to be a holistic change. Individual and unconnected changes in agriculture will not help as the resources are limited. And hence, the resources have to be allocated in such a way that all the sectors have something to gain. More emphasis on agriculture and employment generation through investment pattern and choice of technology pattern changes. Thus, the future course of action should be focused on greater concern for agriculture and an Industrial policy.

2. What measures would you suggest to address the regional imbalance with respect to land under irrigation? What role can technology play in this regard? Explain.

Approach:

The question expects that the candidate needs to provide the solution regarding regional imbalance of land under irrigation. For introduction, one can mention a report or facts regarding regional imbalance wrt land under irrigation or one can explain land irrigation and then mention need of balanced regional development of land under irrigation. In the first half of answer, one can show how there is a regional imbalance, for value addition add a map and tag the regions. Then in the next half suggest the measure. Also emphasise more on how technology will play role in this regard. Giving success stories across the world to yield more marks.

Introduction:

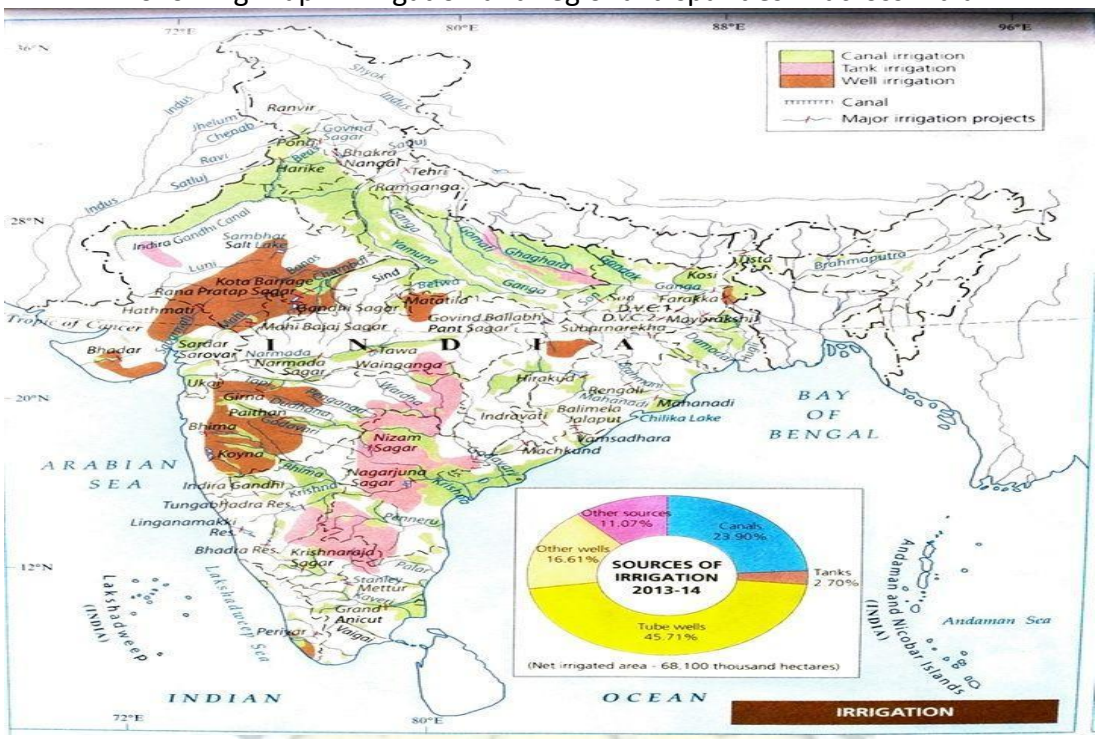
Out of about 141 m.Ha of net area sown in the country, about 65 million hectare (or 45%) is presently covered under irrigation. Substantial dependency on rainfall makes cultivation in un-irrigated areas a high risk, less productive profession. Empirical evidences suggest that assured or protective irrigation encourages farmers to invest more in farming technology and inputs leading to productivity enhancement and increased farm income. Hence, it becomes of critical importance to balance the regional irrigation development.

Body:

The key challenge facing the irrigation sector in India is the growing gap between Irrigation Potential Created (IPC) and Irrigation Potential Utilised (IPU), and uneven distribution of water over the length of the canal system. Following are the reasons for the regional imbalance of land under irrigation.

- Less accessibility of irrigation facilities and less expansion of cultivable range under guaranteed irrigation areas. For instance, in the hilly regions of North east despite the region comes under the high rainfall region, regional imbalance of land under irrigation is stark visible.
- Energy crisis due to power outages and unscheduled interruptions across rural and urban India is one of the main factors behind less expansion of irrigation in different regions.
- With an increased variability of monsoons and rapidly depleting groundwater tables, large parts of India are reeling under water stress. Hence, the traditional methods of irrigation are also facing problem. Which leads to regional imbalance despite it is possible to irrigate the land.
- For instance, A number of peninsular regions like Bundelkhand, Vidarbha and Marathwada have been facing recurring drought-like situations. Only 18% of Maharashtra's complete cultivable land is irrigated whereas the national average is over 35%.

- The regional imbalance regarding land under irrigation can be clearly observed in following Map 1: Irrigation and regional disparities in across India.



Map 1: Irrigation and regional disparities in across India.

- Hence, it is observed that land under irrigation is mostly concentrated in Central and western part of India. Whereas the north east and hilly regions are almost devoid of land under irrigation.
- It is also to be noted that Well irrigation and Tank irrigation are the prominent irrigation facilities used by farmers in western and central part of India . However, other irrigation facilities are scarcely distributed across India.
- Hence, regional imbalance in terms of use of different irrigation facilities is also observed.

Measures to address regional imbalance with respect to land under irrigation:

- Awareness generation with respect to different irrigation facilities is necessary. For instance, farmers in central and western part of India tend to focus more on wells and tank irrigation. However, if they come to know about use, efficiency and advantages of other irrigation types then it will be easy to penetrate more irrigation across different regions.
- Access to credit is one of the biggest hurdle which needs to be addressed. For instance, small holder farmers in India are nearly 78%. As this much population holds very less land, consequently their income sources are minimal. It leads to less availability of Capital to invest for improvement in agriculture.
- Hence, provision of access to affordable credit to farmers needs to be done to ensure wide regional spread of irrigation. For instance, The Micro irrigation fund has been set up under NABARD, which will provide this amount to states on concessional rate of interest to promote micro-irrigation.
- Customization of methods of irrigation is necessary. For instance, drip irrigation practise is generally practised in the plain regions, however, it

becomes less or of no use when it needs to implemented in regions like North-east which are topographically different than other regions.

- Integration of traditional irrigation practises with that of current one needs to be done to ensure conservation of traditional practises and increasing their efficiency. For instance, The International Commission on Irrigation and Drainage (ICID) has accepted Telangana's nomination of Sadarmatt anicut across river Godavari in Nirmal district and Pedda Cheruvu in Kamareddy district in the ICID Register of Heritage Irrigation Structures (HIS). This will not only to conserve the heritage, but it will increase its reach across the region.
- Integration and adoption of emerging technologies with that of other technologies is also the need to the hour. As the emerging technologies address the disadvantages of earlier irrigation technologies. For instance, Maharashtra govt. launched Atal Solar Krishi Pump scheme for farmers to provide subsidy of upto 95% on solar agriculture pumpsets. Which will complement traditional well irrigation techniques with that of renewable energy.
- Integration of state specific agricultural policies with respect to irrigation in to one national level policy will help to address the problem of resource utilization. For instance, in 2015 Pradhamantri Krishi Sichai Yojana is launched by GoI with one of its objectives being Integration of water source, distribution and its efficient use, to make best use of water through appropriate technologies and practices.

Use of technology to address the regional imbalance with respect to land under irrigation:

- Water Measurement: In irrigation systems, water used to irrigate land is carried under pressure to its destination via pipes. However, excessive water use, overexploitation makes the water scarcity and regional imbalance problem more worse. Hence, water measuring through water metering technology becomes of critical importance.
- For instance, Most flow measurement devices measure flow, or discharge, indirectly. These devices are commonly classified into 2 types – those that measure velocity and those that measure pressure. Use of these devices will help to have judicious use of water for irrigation thereby ensuring sustainable use of water resources across the region. There by addressing the problem of regional imbalance of irrigation.
- Flood irrigation practise must be replaced with precise application systems like drip and hose reel for 50-70 per cent water-saving. It ensures judicious use of water.
- Use of data analytics: Using predictive analytics through satellites be developed which gives the farmers guidelines regarding which technological tool can be used to irrigate their land neatly.
- Seamless Communication: The Government could create a unified, reliable data base of farmers with complete details of every cultivatable area. Which will help the farmer to make informed choices regarding which irrigation technique to be use. For instance, implementing a scheme like Soil health card

scheme, which will ensure dissemination of data to farmers for apt use of irrigation techniques.

- Use of more advanced and powerful version of technology in irrigation will be of utmost importance. For instance, The Kaleshwaram project is an off-shoot of the original Pranahitha-Chevella Lift Irrigation Scheme taken up by the government in 2007 when Andhra Pradesh was not divided. It is aimed to make Telangana drought proof by harnessing the flood waters of the Godavari. It is claimed as the world's largest multi-stage and multi-purpose lift irrigation scheme.
- These kind of comprehensive schemes will ensure more utilization of state machinery with that of concerted efforts in ensuring improvement of one technology.
- Irrigation methods like canal, tube well, drip irrigation etc. needs to be complemented/integrated with other emerging technologies. For Instance, Maharashtra governments scheme of Solar pumps.
- Use of emerging technologies like Artificial intelligence or Internet of things will ensure widespread use of irrigation techniques. For instance, a person can start the motor from long distance using IoT technology. Which in turn is useful for people who are living at distant places from their farms and fail to do farming due to distance. It will ensure that the farmer can have more than one source of income too.
- For instance, a person residing in city can use this technology, thereby increasing her income and subsequently ensuring spread of irrigation in the distant and hilly areas like North East.

One of the success stories of use of technology to improve irrigation is observed in Maharashtra:

- "Phule Irrigation Scheduler" mobile and web based applications estimate the reference evapotranspiration (ETr) by the different standardized methods for the specific form by fetching the required input weather data (maximum temperature, minimum temperature, maximum relative humidity, minimum relative humidity, wind speed, sunshine hours, etc.
- In these mobile and web based applications, farmer initially need to register the farm by providing information on location of farm, crop, soil and irrigation system that he/she easily has. Then farmer has to access the mobile application/web based application at least once in 3-4 days so that the current weather information is registered in the farm. By entering the previous date of irrigation and the desired date of irrigation, farmer can know the irrigation requirement and time of application immediately and accordingly can operate the irrigation system to provide irrigation water precisely to the farms. It thereby ensured wide reaching spread of Irrigation techniques across water deficient regions of Maharashtra.
- Also, SOLAR POWERED COMMUNITY LIFT-MICRO IRRIGATION PROJECT of Punjab benefitted nearly 8500 beneficiaries.

Conclusion:

India is experiencing a very significant water challenge, due to changing climate. When it comes to agriculture the problem is more worse as water demand of agriculture is more. Hence, it becomes of crucial importance to ensure 'HAR KHET KO PANI', wide scale penetration of irrigation practise is done. Also to ensure 'per drop more crop', integration of technology in to irrigation methods is done. This cumulatively will help to tackle the problem of regional imbalance of land under irrigation in turn assuring 'Samrudh Kisan, Samrudh Bharat'.

3. In India, organic farming has got huge export potential. Do you agree? Comment. In this regard, examine the challenges that need to be overcome.

Approach – A straightforward question where in the first part you need mention your views regarding export potential of organic farming from India and then in the second part, you need to examine the challenges to be overcome towards realising this export potential.

Introduction

India is a country that is bestowed with indigenous skills and potentiality for growth in organic agriculture where presently it has achieved rapid growth in organic agriculture and now is home to 30 per cent of the total organic producers in the world (according to the World of Organic Agriculture 2018 report).

Body

- Organic products are grown under a system of agriculture without the use of chemical fertilizers and pesticides with an environmentally and socially responsible approach.
- The Agricultural & Processed Food Products Export Development Authority (APEDA), an autonomous organisation under the administrative control of Department of Commerce, has been mandated with the export promotion of organic products.
- APEDA provides assistance to the exporters of organic products under various components of its export promotion scheme. Consequently, Organic farming can be seen to have a huge export potential in India, which can be seen from the following points:

1. India is bestowed with lot of potential to produce all varieties of organic products due to its various agro climatic conditions. As per the available statistics, India's rank 8th in terms of World's Organic Agricultural land and 1st in terms of total number of producers as per 2020 data.
2. In several parts of the country, the inherited tradition of organic farming is an added advantage. In 2015, the export and domestic market of the Indian organic industry grew by 30% and 40% respectively. Organic farming has seen a drastic overall development in almost every crop type due to increase in awareness in food security and environmental safety.
3. Due to climate changes, organic farming has made an important place around the globe. The Government is promoting organic farming through various schemes under National Mission Sustainable Agriculture (NMSA). The Government has introduced Paramparagat Krishi Vikas Yojna (PKVY) scheme under the NMSA to promote organic farming in the country which will help the overall export potential of the sector.
4. India has good potential for the export of organic fruits and vegetables, as three major importing markets are the U.S., EU, and Japan which are high income countries with higher demand. For example, India can target EU,

especially the UK and the Netherlands for export of grapes as there is a current consumption trend increasingly favouring organic wine.

At the same time, most organic farmers are struggling due to poor policy measures, rising input costs and limited market, says a study by ASSOCHAM. Consequently, the challenges towards realising the export potential of organic farming can be seen from below:

1. Recent study found that the phasing out of chemicals in Sikkim was not complemented by a simultaneous increase in availability of and access to organic manure.
2. According to the ICAR, productivity on an average dips by 6.7 per cent in the first year, and the government needs to have a plan in place to support farmers during the transition.
3. The report on Doubling of Farmers' Income by Ashok Dalwai committee, too, echoes the concern of the farmers who claim up to 30 per cent drop in yields when embracing organic. It takes about a decade to attain pre-conversion yield levels, according to the committee report.
4. As organic farming prohibits synthetic pesticides, the vulnerable farmer is at the mercy of severe attacks from mutant pests. Thus highlighting an acute shortage of effective and viable methods of organic pest control.
5. Recent study also found that the supply chain for organic farming to be underdeveloped. As a result, the small and mid-sized farmers located in hilly regions and tribal belts find it extremely difficult to access the export market.
6. The existing certification systems for organic food are not only cumbersome and time-consuming, but also expensive. It is important to eliminate confusion over multiple certification systems and multiple ministries regulating organic production and sales.

Way forward –

- Government should devise a mechanism to cover losses to farmers due to reduced yields by combination of lower input costs and favourable price premium for the produce.
- Setting Central Organic Farming Research Institute as well as research stations and model organic farms across states.
- Tax waivers for organic input production units.
- Dedicated Organic market yards and marketing outlets.

Conclusion

The promotion of exports of organic products is a continuous process. The newly introduced Agriculture Export Policy provides an assurance that no restrictions will be placed on export of organic products which is evident from the recent growth of organic products exports by 50% and thus contributing towards the target of doubling farmer's income by 2022.

4. Discuss the recent measures taken to upgrade the storage and transportation infrastructure for agricultural produce. Also, comment on its backward and forward linkage potential.

Approach:

It expects students to write about the storage and transportation infrastructure development measures taken by government recently in first part, and comment about its forward and backward linkage potential in second part.

Introduction

Agriculture is the primary source of livelihood for about 58% of India's population. India is a surplus producer in several agri commodities. However, the country's farmers do not get remunerative prices because of a lack of investment storage and transportation infrastructure. For a country where a large part of the population is dependent on agriculture for livelihood, it is essential to invest heavily in storage and warehouse facilities.

Body

Recently through various schemes and stimulus fund government have focused on agri infrastructure development.
Recent measures taken to upgrade the storage and transportation infrastructure:

- Transport and Marketing Assistance (TMA): The Government of India came out with Transport and Marketing Assistance (TMA) scheme to provide financial assistance for transport and marketing of agriculture products in order to boost agriculture exports.
- More warehouses will be developed: Under Union Budget 2020-21, the Ministry of Finance announced that more warehouses that comply with the requirements of the Warehousing Development and Regulation Authority (WDRA) will be developed on a public-private partnership (PPP) basis at the block/ taluka level.
- Mapping of Cold storage facility: National Bank for Agriculture and Rural Development (NABARD) will be undertaking the exercise of geotagging all cold storage facilities, which will help NABARD direct resources so as to expand capacities where there is a need.
- Direct Procurement from Farmer: As part of stimulus package, the government has announced a Rs 1 trillion fund for entrepreneurs to set up facilities to procure, store and market agricultural produce. Aggregators, cooperative societies and farm entrepreneurs for strengthening farm gate infrastructure and establishing post-harvest management infrastructure will use this proposed fund.
- Operation Greens: The government has announced that Operation Greens, a price fixation scheme that aims to ensure that farmers are given the right price for their produce, will be extended from tomatoes, onions and potatoes(TOP)

to all fruits and vegetables. The scheme will include a 50 per cent subsidy on transportation from surplus to deficit markets. It will also include a 50 per cent subsidy on storage, including cold storage. The project will be implemented on a pilot basis for six months and will later be extended further.

- SAMPADA Scheme: Government plans to triple the capacity of food processing sector in India from the current 10% of agriculture produce and has also committed Rs 6,000 crore (US$ 936.38 billion) as investments for mega food parks in the country, as a part of the Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters (SAMPADA).
- Dairy Processing & Infrastructure Development Fund: The Cabinet Committee on Economic Affairs has approved a "Dairy Processing & Infrastructure Development Fund" (DIDF) with an outlay of Rs 11,184 crore during the period from 2018-19 to 2030-31 through which 95 Lakh milk producers will be benefited by covering 50,000 villages.
- Animal husbandry infrastructure development: Government announced the launch of animal husbandry infrastructure development fund of Rs 15,000 crore with an interest subsidy scheme to promote investment by private players and MSMEs in dairy, meat processing and animal feed plants.
- Venture Capital fund By NABARD: In May 2019, NABARD announced an investment of Rs 700 crore venture capital fund for equity investment in agriculture and rural-focused start-ups.
- Digitalisation in Agriculture: The Government of India is going to provide Rs 2,000 crore for computerization of Primary Agricultural Credit Society (PACS) to ensure cooperatives are benefitted through digital technology.
- Pradhan Mantri Krishi Sinchai Yojana (PMKSY): The Government of India launched the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) with an investment of Rs 50,000 crore aimed at development of irrigation sources for providing a permanent solution from drought.
- Rashtriya Krishi Vikas Yojana (RKVY): In 2019–20, Rs 202.5 crore was allocated to the Rainfed Area Development, a sub-scheme under Rashtriya Krishi Vikas Yojana (RKVY).

Backward and forward production linkages always requires modern agriculture production and distribution system.

Forward linkage potential:

- Supermarkets can replace intermediaries: Provision of quality chilling infrastructure can attract the supermarkets to procure form farmers directly, which will result in Reduction of intermediaries.
- Adequate knowledge of Market through Digitalisation: Lack of adequate operational knowledge of smartphones resulted in loss for regular updates on fair prices of crops (MSP), future crops and weather updates etc. Digitalisation in this sector bridging this gap.
- Vital Role of Cold storage facility: The demand for frozen goods is increasing by the day, leading to an expansion of the cold storage market. The cold storage

sector in agriculture is opening various business opportunities. Fully integrated cold chain will include, both forward and backward linkage such as Pre-cooling, packaging, small cold storage facilities and in forward linkage, Reefer vehicles, large cold-storage facilities, ripening chambers, waxing, and packaging from cold storage to consumer.

Backward linkage potential:

- Scientific approach farm processes: It has been reported that postharvest losses can be substantial, resulting in annual economic losses of at least Rs 1,00,000 crore. Investments in research labs for scientific gradation and quality assessment. Training centres for farmers to provide knowledge transfer on quality management, seed selection, crop forecasting etc. will avoid this loss.
- Development of infrastructure like road and transport: Good quality roads for farm produce to processing centres reduces time as well as preserve the quality of the product.
- Credit facility necessary for expansion: Easily available credit facility increases expansion ability of the farmers. Credit facilities also develop the farmers to enter into the farm allied businesses.

Going forward, the adoption of food safety and quality assurance mechanisms such as Total Quality Management (TQM), Good Manufacturing Practices (GMP) and Good Hygienic Practices (GHP) by the food processing industry will offer several benefits.

Conclusion:

India is expected to achieve the ambitious goal of doubling farm income by 2022. The agriculture sector in India is expected to generate better momentum in the next few years due to increased investment in agricultural infrastructure. Furthermore, the growing use of genetically modified crops will likely improve the yield for Indian farmers.

5. Critically evaluate the performance of support instruments like subsidies and MSP for the farm sector. What have been the negative fallouts of these instruments.

Approach:

It expects students to write about- in first part about positive impacts of instruments like subsidies and MSP - in second part write about negative fallout of these instruments - in third part write way forward

Introduction:

Farm subsidies refer to the governmental financial support paid to the farmers and agribusinesses to reduce their input expenditures and supplement their income. Farm subsidies are worldwide phenomenon and India is of no exception.

Body:

Policy Instruments of Farm Subsidy

- There are five main policy instruments of delivering direct and indirect farm subsidies as follows:
    - Price and Income Support Policy
    - R&D support
    - Input subsidies
    - Import measures
    - Export measures

Price and Income Support Policy

- Government of India has several instruments to safeguard the interest of farmers under its price and income support policy. The main price and income support instruments are
    - Minimum Support Price (MSP)
    - Minimum Export Price (MEP)
    - Market Intervention Price (MIP)
    - Buffer Stocks Operations
    - Public Distribution System

Issues with agricultural subsidies:

- Heavy Fiscal Burden: The total outgo on fertilizer subsidy alone in 2017-18 was Rs. 70,000 crores.
- Excessive use of Ground water: The power subsidy has led to overuse of ground water which has further resulted into dramatic fall in ground water levels. In several villages, wells have gone dry. Water extracted from deep inside earth has shown contamination of Arsenic and other heavy metals.
- Environmental Effects and decline in Soil Fertility: Indiscriminate use of fertilizers (recommended ratio of NPK fertilizer is 4:2:1 while actual usage is 8:3:1. Similarly, urea consumption has increased to 60% in 2017 from 55% in 2010-11) harm the soil fertility, biodiversity, and also leads to eutrophication (increased nutrients in water bodies, eventually leading to decreased oxygen concentration

in them) and bio accumulation/bio magnification (increasing concentration of toxic material in tissues of living organisms at successively higher levels in a food chain).

- No benefits to the targeted groups: Fertilizer subsidies are generally cornered by the manufacturers and the rich farmers of Punjab, Haryana and Western UP.
- Cereal Centric, Regionally Biased, and Input Intensive: Price subsidies has affected Indian agriculture negatively. This has made Indian agriculture cereal centric, and neglectful towards pulses, oil seeds and coarse cereals. This has led to import of these crops and food insecurity in lower strata which depend upon coarse cereals. Also, most of the subsidies go to the rich farmers, and the rich states which are able to grow marketable surplus and have well developed infrastructure.

Issues of Minimum Support Price

- Injects an element of certainty and confidence: The advance announcement of MSP and procurement prices by CACP (Commission for Agricultural Costs and Prices) provides an assurance to the farmers and they can confidently invest in the crops.
- Contributes to inflationary trend: There has been continuous hike in MSP and Procurement prices due to the rich farmers' lobby and it has pushed up the carrying cost of buffer stocks of FCI considerably. This has pushed up the food subsidy bill to a very high level.
- Bias in favour of surplus states: Almost all states produce wheat, but 95% procurement is from Punjab, Haryana and Western UP. Similarly, around 20 states produce rice, while 90% is procured from Punjab, Andhra Pradesh, Haryana, UP and Tamil Nadu. Other states do not get much benefit from it.
- Adverse impact on investment: Due to extra expenditure in food procurement, the other sectors looses out on new investments. It has been observed that a 10% increase in MSP of wheat and rice leads to a decline in investment by 1.9% and in overall GDP by 0.33%.
- Distortion in cropping pattern: MSP of wheat and rice has generally been higher than the cost of production and that of cereals and pulses has been less than the cost of production. So farmers get incentivised for growing profitable crops and hence cropping pattern gets distorted.

Way forward:

- A better targeting of subsidies with the usage of JAM (JanDhan – AADHAAR-Mobile Number) trinity can reduce the fiscal burden.
- Separate agriculture feeder network (under Deen Dayal Upadhayay Gram Jyoti Yojna). This separate agriculture feeder will supply electricity only for a few hours a day. The process has shown positive results in arresting decline of ground water levels in Gujarat.
- Creating awareness among farmers, increasing penetration of soil health card scheme, promoting organic farming and innovative products like neemcoated urea will go a long way to check the issue.
- Nutrient based subsidy and Neem-Coated Urea has been introduced by Government. There should be Direct Benefit Transfer of fertiliser subsidy

through Aadhaar authentication, organic farming should be encouraged and there should be phased increase in the price of urea.

- Crop diversification by including more crops under MSP, Mission on Integrated Development of Horticulture, Organic and Cooperative farming, food processing, mixed farming, Direct Benefit Transfer.

Conclusion:

Procurement policy of the government needs reforms that are easier to implement. Efforts must be made to balance market price and farmer's support. Cash transfer gives better choices to farmers than imposing subsidies.