1. In India's growth story, there are reasons to focus attention on agriculture and allied sector, which will continue to play a significant role in providing employment and sustainable livelihoods for the growing population in India. Elucidate.

Approach

The question is based on agriculture and it allied sector.First make a general introduction on agriculture based on the data.Then address the sole demand of question on why its important to focus on it.In conclusion write some recent measures and schemes by government to revitalise the sector.

Introduction

Agriculture continues to be the most crucial sector of the Indian economy. With 19.9 percent contribution to the Gross Domestic Product (GDP) and providing employment to nearly 2/3rd of the work force, agriculture is so much at the centre stage in the Indian economy that any situational change in this sector, positive or negative, has a multiplier effect on the entire economy. The largest industries of the country like sugar, jute, textiles, food processing, milk, etc. are dependent on agriculture for their raw materials.

Body

Reasons for focus on agriculture and allied sector:

- Agricultural influence on national income: The contribution of agriculture during the first two decades towards the gross domestic product ranged between 48 and 60%. In the year 2001-2002, this contribution declined to only about 26%.
- Agriculture plays vital role in generating employment: In India at least two-thirds of the working population earn their living through agricultural works. In India other sectors have failed generate much of employment opportunity the growing working populations.
- Agriculture makes provision for food for the ever increasing population: The existing levels of food consumption in these countries are very low and with a little increase in the capita income, the demand for food rise steeply (in other words it can be stated that the income elasticity of demand for food is very high in developing countries).Therefore, unless agriculture is able to continuously increase it marketed surplus of food grains, a crisis is like to emerge.
- Contribution to capital formation: There is general agreement on the necessity capital formation. Since agriculture happens be the largest industry in developing country like India, it can and must play an important role in pushing up the rate of capital formation. If it fails to do so, the whole process economic development will suffer a setback.
- Supply of raw material to agro-based industries: Agriculture supplies raw materials to various agro-based industries like sugar, jute, cotton textile and

vanaspati industries. Food processing industries are similarly dependent on agriculture. Therefore the development of these industries entirely is dependent on agriculture.

- Market for industrial products: Increase in rural purchasing power is very necessary for industrial development as two- thirds of Indian population live in villages. After green revolution the purchasing power of the large farmers increased due to their enhanced income and negligible tax burden.
- Influence on internal and external trade and commerce: Indian agriculture plays a vital role in internal and external trade of the country. Internal trade in food-grains and other agricultural products helps in the expansion of service sector.
- Contribution in government budget:Right from the First Five Year Plan agriculture is considered as the prime revenue collecting sector for the both central and state budgets. However, the governments earn huge revenue from agriculture and its allied activities like cattle rearing, animal husbandry, poultry farming, fishing etc. Indian railway along with the state transport system also earn a handsome revenue as freight charges for agricultural products, both-semi finished and finished ones.
- Need of labour force: A large number of skilled and unskilled labourers are required for the construction works and in other fields. This labour is supplied by Indian agriculture.
- Greater competitive advantages:Indian agriculture has a cost advantage in several agricultural commodities in the export sector because of low labour costs and self- sufficiency in input supply.
- Women empowerment: women form major part of labour in agriculture and also have large role in dairy farming.This provides them independence, dignity and economic heft to determine their destiny.

Conclusion

Therefore keeping in mind the importance of Agriculture and its allied activities government have introduced various reforms such as new farm laws to do away with middlemen, establishing of Agriculture Infrastructure fund and reducing policy uncertainty.This will help to revitalise agriculture sector which was a sole positive sector in pandemic. Further this will help to achieve India's target of food security, accessibility, increase in employment and doubling of farmers income in long run.

2. Micro irrigation scores over conventional irrigation techniques on several fronts and is a must for Indian agriculture keeping in mind the water stress scenario. Comment.

Approach

The question is straightforward.In introduction define what is micro irrigation and contextualise to India.In next part write what is the need for micro irrigation in India and then go on to write what are its benign which will be boon .In conclusion take an optimistic stand.

Introduction

Micro irrigation is a modern method of irrigation; by this method water is irrigated through drippers, sprinklers, foggers and by other emitters on surface or subsurface of the land. Major components of a micro irrigation system is as follows. Micro-irrigation system is popular these days for its low cost and water-efficiency.Therefore government of India has been implementing 'Per Drop More Crop' scheme from the year 2014 for sustainable agricultural production practices.

Body

Reasons why Micro irrigation is an imperative for India

- India is facing the twin challenge of water scarcity and population explosion. The ongoing water crisis has affected nearly 600 million people and is expected to only worsen: The country's population is touted to increase to 1.6 billion by 2050.
- Agriculture may have to face the brunt: Water would be diverted to other sectors and agriculture would have to make its peace with lesser and poorer quality of water.
- Climate change too has aggravated water scarcity concerns: It can, through its impact on weather patterns, affect livelihoods and well-being of our farming community.
- The impact of climate change is much more evident in Indian agriculture, where around 85 per cent farmers are small and marginal and 60 per cent agriculture is dependent upon the vagaries of monsoon. The role of irrigation, therefore, takes the front seat.
- The continued irrigation through traditional practices since the introduction of Green revolution in the 1960's, however, has begun to show its multitudinous ill effects on groundwater quality and height, water logging, soil salinity, soil health, crop productivity, partial factor productivity and cost economics of farm practices.

This is where micro-irrigation assumes significance.These are the benefits of Micro irrigation which will be important for India.

- Water saving: Micro-irrigation (MI) is proved to be an efficient method in saving water and increasing water use efficiency as compared to the

conventional surface method of irrigation, where water use efficiency is only about 35-40%.

- Increased irrigation efficiency: The on-farm irrigation efficiency of properly designed and managed drip irrigation systems is estimated to be about 90%. Farmers using a pumping system to irrigate their fields should ensure that the pump and pipe size are fitting with their needs, thus avoiding water and energy overuse and consequent leakages.
- Higher yields: The yields are higher than traditional flood irrigation. Productivity gain due to use of micro-irrigation is estimated to be in the range of 20 to 90% for different crops. Yields of crops increase up to 45% in wheat, 20% in gram and 40% in soybean.
- Less water loss: There is also less loss of water due to reduction in loss of water in conveyance and also reduction in loss of water through evaporation, run off, and by deep percolation.
- Energy efficient: The reduction in water consumption in micro-irrigation also reduces the energy use (electricity) that is required to lift water from irrigation wells.
- Lower consumption of fertilizers: An efficient drip irrigation system reduces consumption of fertiliser through fertigation.
- Weed and disease reduction: It helps in inhibiting growth of weeds as it keeps limited wet areas. Under this condition the incidence of disease is also reduced.
- Cost savings: There are substantial reductions in irrigation costs and savings on electricity and fertilisers.
- Precision farming: Emerging computerised GPS-based precision irrigation technologies for self-propelled sprinklers and micro-irrigation systems will enable growers to apply water and agrochemicals more precisely and site specifically to match soil and plant status and needs as provided by wireless sensor networks.

Conclusion

Government of India has also accorded high priority to water conservation and its management. Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) has been formulated with the vision of extending the coverage of irrigation 'Har Khet Ko Pani' and improving water use efficiency 'More crop per drop' in focused manner using sprinkler & drip method of irrigation. This irrigation method has several advantages over furrow systems, including reduced water use.

3. The Indian farmer should adopt a stable pattern of sowing to benefit in the long run. Why? Critically examine.

Approach

In introduction mention what is sowing and why its important that it should be stable.In next part address what is the need for stable sowing, what hinders it and what measures are needed for this purpose.In conclusion make a poitive future oriented statement

Introduction

Sowing is a process of planting seeds into the soil. During this agricultural process, proper precautions should be taken, including the appropriate depth, proper distance maintained, and soil should be clean, healthy and free from disease and other pathogens including fungus. This sowing process starts the beginning of agricultural cycle in India and therefore when each year this sowing pattern which gets affected due to myriad reasons have an overall impact on farm productivity, agricultural GDP and farm income.

Body

Agriculture in India

- Agriculture continues to be the most crucial sector of the Indian economy. With 19.9 percent contribution to the Gross Domestic Product (GDP) and providing employment to nearly 2/3rd of the work force, agriculture is so much at the centre stage in the Indian economy that any situational change in this sector, positive or negative, has a multiplier effect on the entire economy.
- The sowing patter each year decides what will be the total production of different crops in Indian economy which will have a effect on farmers income, total production,India's imports and exports, inflation in the country and availability of raw materials to various sectors

Need for stable sowing pattern

- Stable income: A stable sowing pattern will lead to stable production regime where the farmers income will not fluctuate with external factors such as market and monsoon.
- Controlled Food inflation: Inflation is a cyclical phenomenon in India as seen with commodities such as onions, tomato and pulses.This can be mitigated with stable sowing which will remove the uncertainty factor and impart more predictability.It will also give more room to monetary policy to impart growth.
- No more Glut and scarcity : Farmers depending upon previous years prices tend to adopt sowing for this year which leads to glut in the market and which further affects farmers income.While in some years there is scarcity pf other commodities due to failure of crops or monsoon.

- Stable exports: India is not seen as a reliable exporter as there are constant announcements of bans on exports.This image can be changed if farmers follow a stable sowing pattern.
- Optimum Buffer stocks : India has been facing a problem of huge buffer stocks.This is due to skewed sowing of paddy crops when India has already achieved sufficiency.A stable sowing includes sustainable sowing in its ambit.Thus this extra buffer stock can be brought down with stable sowing of diverse crops

Issues which are hindrance to stable sowing

- Erratic Monsoon: Due to climate change an global warming the monsoon patter has changed is last decades.This has affected the sowing pattern as the monsoon acts as an important indicator of sowing of different crops.For example this year the sowing of different crops is less due to low rainfall in June end.
- Information asymmetry: The farmers do not have a longterm estimation of demand in the next year and the total production in stocks.Further majority are unaware about the global prices.This impacts sowing which results into haphazard sowing.
- Government policies: Government of India has not been able to maintain a stable policy in agricultural sector.The policies are rather reflexive after an event has occurred.This is seen in export ban on onions and recent order on limit on storage of pulses.This sends a wrong signal to the farmers and market.
- Lack of economies of scale: 86 percent farms in India are very small in size and therefore for them to have astable sowing pattern is near to impossible as they depend upon high price fetching crops to sustain themselves.This results in constant change in pattern.
- Lack of food processing: Lack of food processing capabilities leads to wastage of crops and thus it affects the mindset of farmers in long run.This affects its sowing pattern.

Measures to be taken to overcome these issues

- A common market which is integrated for better price discovery.This is being implemented by the present government trough eNAM program.
- There should be stable policies over a long period to avoid frequent changes and uncertainties to framers.
- Irrigation reach should be increased as still only 45% of India agricultural land is irrigated.The dependence on monsoon has caused frequent changes in sowing .The adoption of micro irrigation in water deficit areas can be more beneficial.
- The market should be given free hand to determine the demand and supply.The government has done this trough bringing three farm laws which will corporatise and commercialise the farm sector.
- There needs to be value addition through agro industries.The government is doing it trough mega food parks and Sampada Yojana.

Conclusion

Therefore the sowing pattern needs to be stable fo better productivity, farm income, affordable pricing and better exports.The government should work in this direction as in 21st century its not right for India and its farmer to depend upon chance rather than pattern to prosper and progress.