

IAS BABA



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Phase 2 - Compilation

Part 1/2

GS 3



1. Taxation is not only a source of revenue mobilisation but also a tool to impart behavioural changes. Explain with the help of suitable examples.

Approach

Candidate can explain the main objective of the taxation how it helps in revenue mobilization. While defining the revenue mobilization candidates have to write about how taxation and policies also brings the behaviour changes with suitable examples.

Introduction

The main objective of any good quality tax system is to have revenue mobilisation to deliver valuable services for citizens, while also providing benefits for state building, wealth distribution and incentives for innovation, investment and trade.

Body

Revenue mobilization:

Revenue mobilization is important for economic and social development by allowing governments to finance critical public goods necessary for positive health and education outcomes.

With revenue mobilization tax and taxation policies also imparts behaviour changes:

- The tax on petroleum products is not meant to discourage use of gasoline. It is a user tax acts as revenue mobilization. In turn, the government spends the tax revenues on maintaining and building roads and highways.
- But increase in such taxes and Centre imposing extra levies on petrol, diesel discourages the use and creates room for green transition with nudging the user behaviour.
- These have brought a lot of behavioural changes among the taxpayers. Therefore we find that many taxpayers make prompt payment of taxes fearing authorities and it's corrective actions.
- Furthermore, rising petrol and other fuel prices have contributed to many customers' desire to switch to electric vehicles. EVs are not only cost-effective, they also have tax advantages in India.
- For example buying an electric vehicle with a vehicle loan can make you eligible for income tax benefits under the 80EEB. Also, an EV purchase will bring you tax benefits on GST, with the government cutting the rate to five per cent from the previous 12 per cent. This persuade and influence the person to buy EV.
- High taxes were levied on certain foods, items of clothing, tobacco, and alcohol. Used the tax to discourage conspicuous consumption and what was considered unsuitable behavior.

- For example these Sin taxation on many cases, are an incentive to lower consumption and improve health and tend to bring behaviour change.
- But sin taxes can disproportionately hurt lower-income consumers, while wealthy shoppers enjoy tax breaks on items only they can afford.
- The luxury tax can make certain products and services more desirable there is a prestige in owning an item that is considered a luxury. A downside to luxury taxes is that they can be too effective. When luxury taxes become too steep, people may choose to stop purchasing a particular product.
- In India, People don't like to be identified differently from the crowd, which motivates them to pay taxes. This report will also help the taxpayers understand in the area they live in the standard of living.
- One such way is to send the defaulters is mailed reminders that words using Social Normative messages. Phrased such as nine out of 10 people in your area are up to date with tax payments.
- Individuals will have a positive attitude towards paying taxes when they know that the tax they paid was used to make a significant positive impact on society this will have a impact on mindset while paying tax.
- Many might assume that their hard-earned money has been wasted on useless projects. This feeling tends to create a further negative attitude towards tax compliance and becomes a valid excuse to resort to tax evasion.

Bringing positive behaviour change towards paying taxes:

- A communication from the government that the tax that was paid by the individual is equivalent to the cost of building a few kilometres of rural road will help the taxpayer better visualize where his money is going.
- This behavioural change will be noticed at a slow pace; it will be useful in the long run. These measures may also help the authorities to bring people into the tax environment.
- We should build a culture that respects those who become rich and, in that process, pay high taxes.

Conclusion

Citizens should understand that it is the duty and responsibility to pay taxes. It should be a voluntary act of payment of taxes as it helps us improve our country's conditions, thereby improving the living conditions of one's well-being.

2. Financing the SDGs is a complex challenge. It requires effective participation of stakeholders and innovative solutions. Elucidate.

Approach

Candidate is expected to understand demand of the question. While broadly explaining SDG's, financing SDG's and sources of finance can be given. In the second part, challenges in financing and way ahead can be given.

Introduction

The Sustainable Development Goals agenda was accepted by all members of the United Nations in 2012 with an aim to promote a healthy and developed future of the planet and its people. It was in 2015 when the Sustainable Development Goals were implemented after a successful fifteen-year plan of MDG's. The Sustainable Development Goals are a set of seventeen pointer targets that all the countries which are members of the UN agreed to work upon for the better future of the country.

Body

Financing SDG's

- An annual global investment of about 5 to 7 trillion is required to fund the SDGs. According to experts, about 1.4 trillion dollars annually is currently being spent on the 17 goals and 169 targets by developing countries – 360 billion in low-income countries and about 940 billion in middle lower-income countries.
- According to UNCTAD, developing countries need between 3.3 trillion and 4.5 trillion annually, however, currently, there is about a 2.5 trillion gap annually between current funding levels and what is required for financing the SDGs.
- In addition, there is also a financing gap within sectors. Economic and social infrastructures have the most significant financing gaps. For example, power infrastructure has the greatest financing need of about 950 billion, while health and education require a combined 390 billion but investments fell short in these sectors.

Sources of financing

- To resolve these gaps, significant investment and resources are required from both private and public sources. Financing is categorized into private and public, which were further broken down into domestic and foreign categories.
- Domestic sources of financing comprised of tax revenues and private savings while foreign sources consisted of private inflows and public inflows.

- Private inflows included foreign direct investment, portfolio investments and remittances. Public inflow consisted of ODA, debt and other official flows.

Challenges in financing

- The challenge with financing the SDGs is that most of the onus falls on national governments. In most cases, the need for development and the lack of resources required to meet the SDGs are located in emerging countries that are already disadvantaged economically.
- It is also projected that future growth of SDG spending is likely to occur in fast-growing upper-middle-income countries, which will leave developing countries behind.
- Prior to the pandemic, although emerging countries were experiencing an increase in tax revenue, their tax revenue mobilization rates were below that of the median high-income countries.
- According to the IMF, real GDP growth for the world is about -4.4% in 2020-2021, which makes financing more difficult for the governments.
- In private sector, in addition to the challenges posed in the private financing of the SDGs, such as the under-leveraging of resources and the inequality in resource allocation, there is also an inefficient allocation of private capital among the SDG sectors.
- In 2018, 61.6% of private capital raised went to economic infrastructure and services while only 5.6% went towards social infrastructure such as health, education, water and sanitation.
- Corruption in developing countries happens mostly in public procurement and public enterprises. These reduce public spending efficiency, resulting in more significant waste and less investment in SDGs such as education and health care.
- The absence of data makes it very difficult to measure progress towards the SDGs. In order to make SDGs SMART – (specific, measurable, attainable, relevant, and timely), accountability is needed, not just by donors but by a partnership of countries that signed the agreement, international organizations and civil society.

What can be done?

- Collective action is required to meet the SDG indicators by 2030. Specifically required is the mobilization of private capital which should benefit the world, especially developing countries.
- There are about 17 trillion of annual global savings, in addition to 218 trillion in global capital markets that could finance the SDGs. When evaluated, this amount is more than 4.5 trillion needed annually.
- To realign and attract the efficient allocation of resources, there needs to be a better partnership between the public, international agency partners, and the private sector.

- Through partnerships and the support of the local government, investments will flow into sectors such as health, which are often considered public sector domain and in return support the attainment of SDG 3 – Good health and well-being.
- There is also a positive economic argument to be made that by achieving the SDG goals in agriculture, sustainable cities, energy and health, about 12 trillion can be unlocked in business savings and revenue by 2030 while creating 380 million jobs.
- Tackling corruption will increase SDG financing, especially in developing countries. According to the IMF, reducing corruption will increase total global revenues by 1 trillion in developing countries.
- For countries, especially the developing ones, to attract private capital and compete against other investment interests, a data revolution is needed. Without quality data, not only would private capital be scarce, the SDGs will not be met.

Conclusion

While the financing challenges are large, they are not overwhelming for most countries. The challenges for financing are not a matter of the scarcity of resources but rather a maldistribution of resources. With 360.6 trillion available in global financial assets as of 2020, the resources to finance the SDGs are available. There are structural and systemic issues found in institutions and capacity building, global co-operation and a realignment of incentives that need to be addressed for the SDGs to be fully financed and attained.

3. Do you think India's economic strategy to come out of the slowdown caused by the COVID pandemic was different from the advanced economies? If so how? Was it a successful? Critically examine.

Approach-

In this question candidates need to write about their opinion on How strategies are adopted by India to tackle Covid pandemic slowdown was different from advanced economies. In second part of answer write about was it successful. Examine it critically.

Introduction-

Economies across the world plunged into deep contractions in the April-June quarter of 2020. For India, the fall in real GDP (Gross Domestic Product) in the quarter was the record lowest, With Prevailing global trade tensions and the huge external shock of the COVID-19 pandemic have initiated discussions on self-reliance. Propagating a self-reliant Indian economy assumes an inward-looking future global economy.

However various initiatives by government helped economy to recover after shock of Covid.

Body -

The World Health Organization declared COVID-19 a global pandemic on the 11th of March 2020, but the world is still reeling from its aftermath.

- The Covid shattered the core sustaining pillars of the modern world economies as global trade and cooperation succumbed to nationalist focus and competition for scarce supplies.
- The world was facing an unprecedented test. Hundreds of thousands of people are falling seriously ill from COVID-19, and the disease is spreading exponentially in many places, Societies are in turmoil and economies are in a nose-dive.
- According to market participants, the ongoing COVID-19 pandemic that has affected stocks worldwide is the primary reason for such record outflows as foreign investors move away from riskier assets and emerging markets.
- The global economic slowdown due to the supply chain disruption and market forces at halt has caused the loss of trust of investors in the earlier traded securities.
- Interest rates: Investment is financed either out of current savings or by borrowing. Therefore investment is strongly influenced by interest rates. High interest rates make it more expensive to borrow.
- High interest rates also give a better rate of return from keeping money in the bank. As in these uncertain times where people are utilising their hard earned savings for survival, the investment choices of people have changed radically.
- Economic growth: Firms invest to meet future demand. If demand is falling, then firms will cut back on investment. If economic prospects improve, then firms will increase investment as they expect future demand to rise. As COVID-19 has impacted the world economy investors are not willing to take risk, as global economic recovery is far in sight.
- Productivity of capital: Even though if an investor chose to invest in the production process, the profit margin from the investment is not sure and hence, less or no investment is taking place.
- Government policies: Government policy of making containment zones and not allowing interstate , intra-state movement and transport has halted the production capabilities.

India on the other side taken various measures to tackle the Covid slowdown -

1. Universalise PDS for a year-

- Expenditure on food, as percentage of total household consumption, was 33.2 percent in rural areas and 22.4 percent in urban areas in 2017-18. The first fiscal intervention should be in making food available to as many as

possible. That can free substantial amounts of purchasing power for other kind of consumptions.

- With inequalities remaining large within the structure of Indian economy, this pandemic can be an opportunity for redistributive measures as argued by Amartya Sen. Universalising the public distribution system (PDS) would be a good starting point.
- By the end of March 2020, the government announced Pradhan Mantri Garib Kalyan Ann Yojana (PMGKAY), under which additional 5 kg of grain per person and 1 kg of pulses per household were provided for free for three months.
- The objective was to cover 80 crore individuals under Antyodaya Anna Yojana ration cards, more commonly known as below poverty line (BPL) cards. However, that period has ended in June, and that very quarter saw almost 24 percent GDP wiped away.

2. Expanding employment guarantee to urban areas-

- After the migrant workers' crisis during the lockdown, the focus has shifted to reverse migration. There are already reports of workers returning from their homes, where they could not find gainful employment.
- Incidentally, MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) has already been used by more than 86 million people in the first half of 2020-21. This is the highest-ever utilisation of the scheme since its launch in 2006,[33] and the rural ecosystem of employment is under massive stress.

3. Direct cash transfer to affected populations-

- At the beginning of 2020, while introducing a bill to create a national database of informal workers in the parliament, it was mentioned that roughly 90 percent of the country's workforce is in various informal sectors. There are other estimates projecting the number at 81 percent of workforce. If the National Accounts Statistics data is used, then there is 52.4-percent prevalence of informality in the workforce.

4. Provide input tax relief to producers in selected sectors-

- Quick estimates of Index of Industrial Production (IIP) and use-based index for the month of July 2020 reaffirms the fact that industrial production of the country remains in distress.
- The only large manufacturing segment that shows consistent positive growth rate in May–July period is pharmaceuticals. All other sectors continue to show substantial contraction in production growth.

5. Public investment in physical and social infrastructure-

- When the economy is suffering from lack of overall demand, it will be futile to expect that private investment will come to the rescue. Therefore, public investment – at least for some time – is necessary to crowd in private investment. India has a lack of infrastructure facilities that has been often cited as one of the major reasons behind the failure of industry, particularly manufacturing, to take off and reach a desired level.

6. Suspend FRBM for two years-

- At this juncture, quick decision making, and timely implementation of those decisions are the most important factors to get the economy back to the road of revival. To provide fiscal push to the economy, FRBM (Fiscal Responsibility and Budgetary Management) Act needs to be put on hold for two years.

7. Monetise the central fiscal deficit-

- The fiscal element of the government's economic package turned out to be a fraction of the announced figure. Estimates of actual fiscal stimulus by different entities like banks and credit rating agencies show the size of the economic package in the range of 0.8 percent to 1.3 percent of GDP. SBI Research has put the direct fiscal cost of the package at around INR 2 lakh crore or around 1 percent of GDP.

Although, it will be unreal to expect the investment trajectory to move upwards very easily post-covid19 crisis, following measures can be implemented to normalise the investment pattern:

- Need of the moment is to expedite the development of vaccine for COVID-19, and swift and wide scale availability of the economy across the globe. So, that people can start their all their works in normal situation.
- A large scale fiscal stimulus for the economies to go back to the earlier market transactions is the need of hour.
- Also customization of approach are also needed as different sectors of economy have impacted differently.
- Issues with the banking sectors are also needed to be tackled. Such as NPA's issues may aggravate the crisis in economy.
- Also providing lucrative investment opportunities for business persons and institutions so that their trust can be rebuild in the economy and further economic progress can be achieved.
- There is no estimate yet of the number of jobs lost due to the outward migration of the informal workforce from their places of work.
- India's estimated 450 million informal workers comprise 90 per cent of its workforce, with 5-10 million workers added annually²⁸. Lifting this despondent migrant workforce back on their feet is crucial to ensuring the country's economic stability.
- Formulating the recovery roadmap will be an iterative process as the interventions are deployed and more data come to the fore, thus allowing a clearer understanding of the on-ground scenarios and, consequently, better targeting of the measures.

Conclusion -

Although India has high scope of investment from foreign countries but it also suffers challenge in many sectors like pharma and electronics communications due to disrupted supply from China. To overcome this more quality products needs to processed in India and becoming Atmanirbhar (self reliant) is way forward for faster recovery from Covid 19.

4. A twofold strategy that focuses on export led growth and skill development can offer a sustainable solution to the challenge of unemployment. Do you agree? Substantiate your views.

Approach

Answer can be approached in two parts. In the first part, how exports can be solution for unemployment can be explained followed with the advantages skilled workforce. In the next part, way ahead can be given along with the conclusion.

Introduction

Export led growth will create an environment of entrepreneurship and innovation, which will further increase the employment opportunities. For the challenging and fast changing arenas of 21st century, skilled workforce is crucial. Successful economies of developed world have established the twofold strategy of skilled workforce and export led growth for sustainable employment.

Body

Export led growth as a solution to unemployment

- Export led growth is where a significant part of the expansion of real GDP, jobs and per capita incomes flows from the successful exporting of goods and services from one country to another.
- Exports of goods and services are an injection into the circular flow of income leading to a rise in aggregate demand and an expansion of output. This helps to raise per capita incomes and reduce extreme poverty especially in developing/emerging economies.
- Growing export sales provide revenues and profits for businesses which can then feed through to an increase in capital investment spending through the accelerator effect of creating more jobs.
- Countries with fast-growing export sectors are likely to see increased investment and employment. A good example of export led growth is china, as the country pulled large number of population out of poverty by providing them sustainable employment opportunities.
- India's big, unexploited opportunities are in unskilled labour exports. India is vastly under-exporting relative to its labour force.
- Export led growth has two advantages, 1) Foreign demand will always be bigger than domestic demand for any country. 2) If domestic producers are competitive internationally, they will be competitive domestically and domestic consumers and firms will also benefit. This automatically gives rise to more employment opportunities.

Skill development as a strategy to tackle unemployment

- According to the World Economic Forum's report The Future of Jobs 2018, more than half of Indian workers will require skill development by 2022. This is to meet the talent demands of the future.
- The proportion of the working-age population (15-59 years) is expected to be over 64 percent of the population by 2021. Predictions are, this demographic advantage will last only by 2040.
- The 2015 Report on National Policy on Skill Development and Entrepreneurship had estimated that only 4.7% of the total workforce in India had undergone formal skill training compared with 52% in the US, 80% in Japan, and 96% in South Korea.
- A skill gap study conducted by the National Skill Development Corporation (NSDC) over 2010-2014 indicated an additional net incremental requirement of 10.97 crore skilled manpower in 24 key sectors by 2022. In addition, 29.82 crore farm and nonfarm sector workforce needed to be skilled, reskilled, and upskilled.
- India could become the supplier of talent and skills if its workforce across age groups is equipped with employable skills that keep pace with the exponentially changing technological ecosystem.
- Over the next two decades, the labour force in the industrialised world is expected to decline by 4%, while in India it will increase by nearly 20%. If skill development is done on a vast scale, India can export skilled workforce globally.

What can be done?

- Reversing the Dropout Trends: The school/college dropout trends combined with estimates of skilling requirements by NSDC reveals that a significant effort has to be mounted to take advantage of our positive demographics.
- Irrespective of rural or urban setting, the public school system must ensure that every child completes high school education, and is pushed into appropriate skilling, training and vocational education in line with market demand.
- Deploying new technology to put in place virtual classrooms together with Massive Open Online Courses (MOOCS) would further help yield a higher educated workforce.
- Building Domestic Demand: No matter how bleak the global demand remains in the present times, a robust industrial architecture is crucial for a country to have export led growth.
- Providing Easy Credit: Providing easy credit remains a critical aspect of mobilising investment for increasing exports. Hence, India also needs cleaning up of the Non-Performing Assets. In this context, the privatisation of banks will be a step in the right direction.
- The idea of the export-led economy has been very successful for many East-Asian countries, which created huge employment opportunities, also known as east Asian miracle.

Conclusion

While tackling the challenge of post covid world and looming recession, a sustainable solution for the unemployment is essential. The twofold strategy of robust skill development and consistent export led growth will act as an antidote for the problem of unemployment.

5. The 'Atmanirbhar Bharat' scheme is not aimed towards economic isolation but economic self-reliance. Critically comment.

Approach

Candidate can explain in short the pillars of atmanirbhar bharat. In the next part, importance of self-reliance in the disrupted global order can be stressed while highlighting aim of atmanirbharta. Answer can be concluded with the way forward.

Introduction

As part of the relief measures in the aftermath of COVID-19, the Prime Minister announced a special economic package and gave a clarion call for "Atmanirbhar Bharat" or "Self-reliant India". Atmanirbhar Bharat Abhiyan included Rs.20 lakh crore economic stimulus package and a number of reform proposals.

Body

What is atmanirbhar Bharat?

Bold reforms across sectors will drive the country's push towards self-reliance. To spur growth and to build a self-reliant India, Atmanirbhar Bharat Abhiyan rests on 5 important pillars.

1. **Economy:** contemplates not an Incremental change but a quantum leap so that we can convert the current adversity into an advantage.
2. **Infrastructure:** that can be an image of modern India or it can be the identity of India.
3. **Systems:** driven by 21st-century technology, and that is not based on old rules.
4. **Democracy:** a vibrant democracy that is the source of energy to make India self-reliant.
5. **Demand:** where the strength of our demand and supply chain is utilized intelligently.

It is important, at the very onset, to clarify that this idea of self-reliance is not about a return to Nehruvian import substitution or autarkic isolationism. Atmanirbhar vision includes active participation in post-COVID global supply chains as well as the need to attract foreign direct investment.

Not economic isolation but self-reliance

- The key element here is the “need to create an eco-system” that will allow Indian companies to be globally competitive and thus making India self-reliant.
- The self-reliance is about resilience, leveraging internal strengths, personal responsibility, and a sense of national mission or “Man Making” to use the late 19th century expression of Swami Vivekananda.
- Atmanirbharta is about decentralised localism that takes pride in local brands, emphasises resilience and flexibility, and encourages local capacity-building and indigenisation.
- The same economic philosophy is reflected in several other supply-side measures announced recently. Self-reliance implies that product and factor markets are made flexible in order to allow the Indian economy to adapt to the problems and opportunities of an emerging post-COVID world.
- Self-reliance also means a commitment to resilience at multiple levels at a national level, an industry level, and at an individual level. For example, the government has indicated that it would provide various forms of incentives and protection to key industries for example, inputs for the pharmaceuticals industry.
- Apparent from the pronouncement is a desire to shake off India’s long-standing suspicion of the world that has often made it reluctant to fully integrate with the global economy.
- China prospered the most from globalisation. Its success was built on the ‘just-in-time’ supply chain model that funnelled cheap exports and components to thousands of businesses globally. The pandemic induced lockdowns disrupted these supply chains, endangering businesses and livelihoods around the world.
- The effects are even being felt in India where many sectors have ground to a halt for the want of supplies. India is dependent on China for imports related to electronics, solar equipment, pharmaceutical (Active pharmaceutical ingredients) and Capital goods. Without developing domestic capacity for manufacturing in these areas, breaking away from dependence on China would not be easy.
- India opened itself to the global market in 1991 through its LPG (liberalisation, privatisation and globalisation) reforms, but remained hesitant in giving the market model full freedom. This may be reflected in market distorting subsidies and other restrictive policies, especially in Agriculture.
- Similarly, in times of globalisation and being governed by the rules of the WTO, any efforts at creating systemic impediments to the smooth flow of trade across nations on trivial nationalism parameters are surely going to backfire, one way or the other.
- Hence, Atmanirbharta model for a rising India should be based on civilizational pride, experience and a self-belief that will help India be a contributor to the world rather than only a consumer.

Conclusion

Covid-19 pandemic gave India a wake-up call and the nation was forced to reimagine its place in the new world order. Pandemic opened up the fault lines in the economy and supply chains. Atmanirbhar Bharat is a vision of new India in a disrupted globalisation economic dependence is not used as a tool to threaten the sovereignty of another nation.

6. Fiscal prudence at the time of economic slowdown is important to shield the economy from future inflationary pressure. Explain with the help of suitable examples.

Approach

Candidates are expected to define what is fiscal prudence in brief and try to explain its characteristics. And during economic slowdown why it's feasible to have a fiscal prudence explain with the suitable examples.

Introduction

A prudent fiscal policy stabilises price and helps control inflation. It refers to the policies undertaken by Governments (national and sub-national levels) to reduce their deficits and accumulation of debt stock. Thus, it is a process where government's fiscal health is getting improved and is indicated by reduced fiscal deficit.

Body

- If the government continues to spend way more than its revenues, it will either have to print more currency or borrow from the market to meet the shortfall. Printing currency will fuel inflation and, at times, hyper inflation.
- Resorting to borrowings will crowd out the private sector and push up the interest rates, which will consequently slow down economic growth. Therefore for any economy to mature, fiscal prudence is critical.
- Fiscal prudence has a lot in common with fiscal consolidation and/or "austerity", where government takes stringent steps to curb the inflation and correct fiscal deficit.

Governments around the globe follow 'prudent fiscal policies' such as

- Cutting government spending
- Increasing tax rate
- Limiting perks and allowances to government employees and trying to make PSUs profitable.

Fiscal prudence at a time of economic slowdown:

- The fiscal prudence created due to responsible expenditure and creative revenue generation policies have led to increased investment targets towards sector's like infrastructure(PMAY, Bharatmala and Sagarmala projects, UDAN, etc), education(Samagra shiksha, RISE, etc) and health.
- Better targeting of government Many economists argue that fiscal deficit promotes growth as it stimulates demand. It boosts inclusive growth as it includes increasing public expenditure on poor as well as on education and health.
- Improved tax revenue realization by implementing measures like increasing efficiency of tax administration by reducing tax avoidance, eliminating tax evasion, enhancing tax compliance etc. Are to be made.
- Enhancing tax GDP ratio by widening the tax base and minimizing tax concessions and exemptions also improves tax revenues.
- At the same time, recent slowdown in growth has impacted government expenditure where compression of government spending has been an important driver of sharp decline in economic growth. Such a slowdown has also impacted the prospects of inclusive growth as lack of overall economic growth hampers consumption and investment cycles.
- Government has shown signs of fiscal prudence, as seen in the way it has tightened norms for the cooperative loan waiver and its studied approach towards the ruling party's electoral promise.
- For example, the Tamil Nadu Urban Habitat Development Board, earlier known as the Slum Clearance Board, has been advised to give up projects for construction of homes where there is no depromise.
- A "continuous review" of the government schemes helps fiscal prudence. As part of this exercise, the government decides to scrap few schemes for example marriage assistance scheme because of there were discrepancies during the time of slowdown.
- The annual review, coupled with the data purity project and the data-centric governance helps maintain the fiscal policy more prudent and at the time of slowdown helps better targeting of schemes subsidies and extending Direct Benefit Transfer scheme for more subsidies.

Way Forward:

- Fiscal reforms to create enough fiscal space to increase pro-poor spending and revive growth.
- Extending PM-KISAN type income support schemes to all citizens through initial rationalisation of subsidies.
- Increasing education, health and infrastructure spending by around 1% of GDP each.
- Decreasing tax exemptions towards one's whose public benefit is unclear.

Conclusion

Following increasingly prudent fiscal policies, as can be seen from recent budget, combined with a focus on rural economy, MSME sector, affordable housing and other related sectors can help render the Indian growth story more inclusive.

7. The Agnipath scheme must also be seen as an important budgetary reform. Do you agree? Substantiate your views.

Approach

Candidate can briefly explain the agnipath scheme in the introduction. In the body part, statistics on defence budget can be given followed by the need of budgetary reforms. Relevant data and statistics can be given to support the argument.

Introduction

The Government has unveiled a new Agnipath scheme for recruiting soldiers across the three services. Under the new scheme, around 45,000 to 50,000 soldiers will be recruited annually, and most will leave the service in just four years. Of the total annual recruits, only 25 percent will be allowed to continue for another 15 years under permanent commission. The new system is only for personnel below officer ranks. Under the Agnipath scheme, aspirants between the ages of 17.5 years and 21 years will be eligible to apply.

Body

India's defence budget

- The Stockholm International Peace Research Institute (SIPRI) in its data on global military spending said, "The five largest spenders in 2021 were the United States, China, India, the United Kingdom and Russia, together accounting for 62 per cent of expenditure".
- India's military spending of \$76.6 billion ranked third highest in the world. This was up by 0.9 per cent from 2020 and by 33 per cent from 2012.
- The Defence Budget for the financial year 2022-23 is Rs 5,25,166 crore. This is an increase of Rs 46,970 crores over last year's Rs 4,78,196 crore and includes pensions too.
- It is an increase of 9.8 percent but keeping the threat perceptions along the borders, the important capital outlay has been raised by more than 10 percent for the second consecutive year.
- India has initiated steps to give impetus to Defence R&D and has decided to open it up for industry, startups and academia with 25 per cent of defence R&D budget earmarked.

Agnipath and budgetary reforms

- 2021-2022 year's Budget estimate on defense pension is INR 1,33,826 Crore which is 4.4% of total expenditure (0.6% of the GDP). Pensions made up 28.4% of this year's defense budget.
- The government has either allocated or paid more than Rs. 3.3 lakh crore in defence pension since 2020. For years, because of the pension bill, the revenue component of the Ministry of Defence has been larger than the capital outlay for modernisation of the armed forces.
- The total revenue component allocated this year is Rs 3.65 lakh crore, of which pension accounts for Rs 119,696 crore. The nearly Rs 1.20 lakh crore allocated for pension was larger than the Rs 1.17 lakh crore in revised estimates for pension in 2021-22.
- In 2021-2022 Budget, defence pension accounts for just under a quarter of the total defence budget, similar to many recent years.
- Similarly, salary paid to the forces has also been increasing over the years. The Army paid more than Rs 88,800 crore in salaries (actual) in pay and allowances in 2020-2021, which went up by Rs 10,000 crore last year.
- This year, the government has allocated Rs 1.07 lakh crore in Army's pay and allowances. The Army is the largest among the three forces with a strength of over 11 lakh officers and soldiers.
- The total pay and allowances for the three services for this year comes close to Rs 1.35 lakh crore. Added to the Rs 1.2 lakh crore of pension, the government has allocated Rs 2.55 lakh crore for just salary and pension this year, which is higher than the Rs 2.33 lakh crore allocated for capital outlay, to be used for modernisation of the defence forces.
- In 2012-13 Budget Ten years ago, the government had allocated Rs 39,000 crore for defence pension, Rs 56,000 crore for pay and allowances of the services, and nearly Rs 80,000 crore for capital outlay.
- Funding for research and development receives less than 5% and capital expenditure, meant for the modernisation of the forces, receives only about 30%.
- The money set aside just for pensions is actually higher than the total budgeted amount for some ministries. With pensions dominating the department's accounts, resources aimed at improving infrastructure, technology and training cannot monetarily be the priority.
- Additionally, the number of defence pensioners is on the rise. Defence pensioners form half of all Union government retirees and double the number of ex-railway employees. The number of defence pensioners has increased by around 10 lakh in the last seven years.

The huge amount going down in the pension is the cause of worry. If the agnipath scheme is implemented effectively, substantial amount of sources can be saved. Further, the saved money can be utilized to buy state-of-art technology and equipment which are the backbone of modern warfare.

Conclusion

The above statistics tells us a story of long strained resources and long awaited reforms in defence budget. Agnipath scheme can reduce the burden on defence budget. The U.S. army is spending more on defence modernisation and upgradation, India to be ready for the modern warfare needs to take some tough decisions in budgetary reforms. Agnipath can be a step in that direction.

8. What measures have been announced by government to ensure recovery of the Msme sector post pandemic? Examine why are these measures are so significant for overall economy? Discuss.

Approach -

A simple straightforward question where candidates are expected to write about measures taken by govt to ensure post pandemic recovery in Msme sector in second part of question write about why are these measure are good for overall economy.

Introduction -

MSMEs have been accepted as the engine of economic growth and for promoting equitable development. They constitute over 90% of total enterprises in most of the economies and are credited with generating the highest rates of employment growth. However the sector has been under pressure since pandemic hence govt has take various measures to ensure recovery from pandemic.

Body-

- In the success of the Indian economy, the micro, small, medium enterprises (MSME) would have a separate book written on them. Such is the contribution of the sector that not only it accounts for 29% of Indian GDP, but also employs over 11 crore people in its 6.3 crore enterprises.
- However, hit by the COVID-19 and its aftermath, the MSME sector almost crash-landed in 2020, facing a strong contraction in revenue. The sector suffered the most in ensuring business.
- The Reserve Bank of India notification allowing banks to deduct the amount released to new MSME borrowers from their net demand and time liabilities. This means that banks are exempted to maintain cash reserve ratio for the loans disbursed from January 1 to October 31 2021 to first time MSME borrowers.
- Furthermore, RBI has also allowed Non-Banking Financial Companies (NBFCs) to avail bank funding under Targeted Long Term Repo Operations (TLTRO) to promote incremental lending and push revival of stressed sectors. Under the

scheme, NBFCs will be able to provide a credit lifeline to financially drying MSMEs.

- While these measures will help NBFCs battle liquidity crunch by receiving financial support from larger financial institutions and banks, they will also make funds more readily available for MSMEs.

Budgetary and Policy Support-

- The Union Budget 2021-2022 brought relief to the capital-starved MSMEs, with the government infusing Rs 15,700 crore for the sector. The decision to incentivize the incorporation of One Person Companies (OPCs) in the budget will feed the MSME ecosystem.
- Also by redefining MSME, the central government and Ministry of MSMEs have brought in a large number of micro and small units under the sector, benefitting them with their measures, scheme and concessions.
- Often the National Company Law Tribunal (NCLT) proceedings lead to drainage of precious financial resources for the sector. To push for faster resolution of cases, the government has sought to strengthen NCLT framework while announcing the introduction of alternate methods of debt resolution, such as via e-courts and special framework for MSMEs.
- The government had already initiated numerous measures under Atmanirbhar Bharat Abhiyan. The measures include Rs 20,000 crore subordinate debt for MSMEs and Rs 50,000 crore equity infusion through MSME funds of funds.
- MSMEs also benefited from Rs 3 lakh crore Emergency Credit Line Guarantee Scheme (ECLGS). With a cumulative of Rs 2.39 lakh crore loan already been sanctioned as of January 29, the collateral free automatic loan for businesses has been a major support to the sector. The rationalization of taxes and duties (for various products from steel and alloys to garments and leather) favours domestic manufacturers and will further boost the sector.

A Look at Some Persisting Challenges

- Owing to the strong government support and the resilience shown by MSMEs, the sector has been able to take-off, scripting a revival story. However, amidst the economy being in technical recession, the sector still needs a much stronger policy thrust to maximize its potential.
- The sector finds itself grappling with long-standing challenges of unavailability of working capital, complex regulatory and licensing mechanism, stringent loan disbursement policies, numerous compliances requirements, nascent digital adoption, and last but not the least, a complicated taxation system.
- Most MSMEs are unable to avail the measures of loan disbursement owing to the amount of paperwork, documentation, non-existing credit history, and non-availability of adequate collateral, especially for a first-time borrower. The cost of compliance, covering all licenses, and complex taxation take a huge toll on the enterprises. The challenges of running a business amidst pandemic and slump in demand add further complications to the stressed sector.

- In terms of access to capital, pending or delayed payments to MSMEs should be accelerated. Close monitoring of payments to MSMEs through TReDS should be done at a central level. The government is already encouraging MSMEs to on-board TReDS platform, as it offers them an option to discount invoices and raise short-term credit from banks to support their delayed payment issue temporarily. MSMEs should be nudged to go digital and raise all invoices in TReDS to ease liquidity pressure on their working capital.
- The sector will benefit if a considerate view is taken and changes happen, making credit and capital easily accessible to MSMEs. The lending ecosystem therefore needs to be eased and strengthened by leveraging digital technologies for a seamless lending process and for assessing credit risk of potential borrowers. Other policy changes that are should be discussed include:
 - Incentivising digital adoption within the sector.
 - Promoting digital literacy.
 - Addressing skilling challenges.
 - Reducing GST.
 - Easing various licensing and compliance regulations.
 - Making interventions that would guide the sector to wider markets, through e-commerce.

How it will benefit the overall economy

- The MSME sector is next to agriculture in terms of providing employment. It also accounts for 48% of India's exports. With strong and complex forward and backward linkages, the sector provides essential support to large enterprises and their value chain. In the making of Atmanirbhar Bharat, its role is instrumental. While the government support has been critical in ensuring the sector lifts-off from the runway, unleashing a new wave of bolder and well-directed reforms would thrust the industry to soar higher.
- The role of MSMEs is not limited to providing ample employment opportunities but varies on different levels. The benefits MSME can reap for our country are as follows:
 - Promoting industrialisation.
 - Development of backward and rural areas.
 - Equitable distribution of national income.
 - Reducing regional imbalances.

The Way Forward for MSMEs

- The recent measures make a strong statement for ease of doing business, balance competition for local enterprises and startups, widen the network of beneficiaries, and build more transparency. However, considering the spectrum of challenges, it is imperative that the government bolsters its reforms and introduces some game changing measures for the sector.

Conclusion-

The sector acts as the instrument of inclusive growth empowering the most vulnerable and marginalized groups. MSMEs are thought to have lower capital-output and capital-labour ratios than large-scale industries, and therefore, better serve growth and employment objectives. Not only do MSMEs generate the highest employment per capita investment, but they also go a long way in checking rural-urban migration by providing people living in isolated areas with a sustainable source of employment.

9. For India, what is the geopolitical significance of the decisions coming out of the recent G-7 summit? Analyse.**Approach**

Candidates are expected to start with recent G7 summit in the introduction. And then highlight what is G7. Then simply write down the geopolitical significance of the recent G7 summit decisions and its outcomes. Also try to write few criticism about G7 in its commitment before a conclusion.

Introduction

During the three-day meeting, the G7 leaders discussed a wide range of topics including Ukraine and cooperating on foreign policy, Addressing energy and food security, Investing in climate and health and Shaping international cooperation.

Body

About G7 and its recent meeting:

- G7 stands for "Group of Seven" industrialized nations. It is an intergovernmental organisation that was formed in 1975. The bloc meets annually to discuss issues of common interest like global economic governance, international security and energy policy.
- G-7 countries include United States, Canada, France, Germany, Italy, Japan and the United Kingdom.
- German Chancellor has invited India, Argentina, Indonesia, Senegal, and South Africa to the 2022 Summit as partner countries.
- A number of international organisations, including the UN, WHO, WTO, IMF and the World Bank participated in the Summit.
- Indian Prime Minister invited the G7 Nations to tap into the huge market for clean energy technologies emerging in the country.

Geopolitical significance of outcomes in recent 48th G7 meeting in Germany:

- **Reiteration of Democratic Values:** The G7 leaders adopted a communique to jointly defend universal human rights and democratic values, the rules-based multilateral order and the resilience of democratic societies. This can influence and shape a international cooperation.
- **Support for Ukraine:** The G7 leaders re-emphasised their condemnation of Russia's illegal and unjustifiable war of aggression against Ukraine. G7 countries have pledged and provided EUR 28 billion. Summit highlighted the commitment to support Ukrainian reconstruction through an international reconstruction plan. And end to the hostilities and a resolution should be reached by choosing the path of dialogue and diplomacy.
- **Reduced Energy Dependence on Russia:** The G7 leaders committed to phase out dependency on Russian energy. They ensured to secure the energy supply and reduce price surges by exploring additional measures such as price caps. This could help equal energy distribution amongst the population of rich and poor nations.
- **Multiplier effects:** Power gives the G-7 great influence on the policies, programs, and decisions of the UN Security Council, World Trade Organization (WTO), International Monetary Fund (IMF), World Bank, and Organization for Economic Cooperation and Development (OECD).
- **Flexibility in decisions:** The G7 takes no mandatory decisions, and the meeting is billed as an opportunity to allow leaders to exchange ideas in key issues. A leaders' declaration at the end of summit is not binding in nature.
- **Supply Chain Resilience-** The G7 leaders remain committed to coordinate on economic security, strengthen the resilience of supply chains while tackling rising costs of living for citizens.
- **Climate Cooperation:** The G7 leaders endorsed the goals of an international Climate Club to accelerate the implementation of the Paris Agreement. Indian Prime Minister highlighted Global Initiative for LiFE (Lifestyle for Environment) campaign. The goal of this campaign is to encourage an eco-friendly lifestyle.
- **Investment Partnership:** G7 countries have launched the Partnership for Global Infrastructure and Investment (PGII), a joint initiative to fund infrastructure. This will aim to mobilise USD 600 billion over the next five years to narrow the global investment gap.
- **Civil Society Cooperation:** "2022 Resilient Democracies Statement" was signed. It will enable "open public debate, independent and pluralistic media" and the "free flow of information online and offline", fostering legitimacy, transparency, responsibility and accountability for citizens and elected representatives alike.

Criticism of G7:

- **New economic dynamics:** Emerging powers including Brazil, China, Mexico, and South Africa, whose absence from the G7 was often noted
- **Lack of implementation:** G7 countries have failed to implement many of the recommendations of past summits, notably those recently committing the

U.S. and other wealthy nations to debt relief, reductions of carbon emissions, conflict prevention, and reform of the international financial architecture.

- G20 prevails: Many analysts also believe the power and prestige of the G20, a forum for finance ministers and central bank governors from nineteen of the world's largest countries as well as the EU, has surpassed that of the G7.

Conclusion

The major purpose of the G-7 is to discuss, and sometimes act in concert to help resolve, global problems, with a special focus on economic issues. G-7 promotes collective decision-making, but critics note that it often lacks follow-through and excludes important emerging powers.

10. What do you understand by 'gig' economy? What are its potential and challenges in India? Discuss.

Approach

Question is straight forward. Candidate can define gig economy briefly. Potential of gig economy can be given with relevant data along with the challenges. In the end, way ahead can be given citing measures suggested by NITI aayog.

Introduction

A gig economy is a free market system in which temporary positions are common and organizations contract with independent workers for short-term engagements. Examples of gig employees in the workforce could include freelancers, independent contractors, project-based workers and temporary or part-time hires. A gig economy undermines the traditional economy of full-time workers who rarely change positions and instead focus on a lifetime career.

Body

Gig economy

- The Code on Social Security, 2020 defines gig workers as those engaged in livelihoods outside traditional employer-employee relationship.
- The workers work as freelancers or independent contractors. They generally have flexible and adaptable working hours based on individual preferences.
- Gig Workers can be broadly classified into two categories — platform and non-platform-based workers. (a) Platform workers are those whose work is based on online software apps or digital platforms. (b) Non-platform gig workers are generally casual wage workers and own-account workers in the conventional sectors, working part-time or full time.

- According to the NITI Aayog Report, at present, about 47% of the gig work is in medium-skilled jobs, about 22% in high-skilled jobs, and about 31% in low-skilled jobs. Trends show that the concentration of workers in medium skills is gradually declining and that in low skills and high skills is increasing.

Potential of gig economy

- The digital gig economy generated a gross volume of approximately \$204 bn from worldwide customers in 2018. Transportation-based services contributed to over 50% of this value. The size of the gig economy is projected to grow by a 17% CAGR and generate a gross volume of ~\$455 bn by 2023.
- Digital platforms have emerged as enablers for employment creation with the power to easily discover job seekers and job providers in the absence of middlemen.
- Due to the rapid developments in technology, the transaction cost for outsourcing non-core activities is reducing and facilitating an increase in the number of tasks which can be performed by each worker.
- Thus, firms are shrinking in size and we are witnessing a rise in start-ups which are outsourcing many activities to expert service providers on a contractual basis.
- While the gig economy is popular amongst the blue-collar workers in India, there is now huge potential for the white-collar workers as well, due to increasing demand in industries project-specific consultants, logo/content design, web design etc.
- The COVID-19 pandemic-induced remote working has blurred the age-old skepticism over the efficiency and dependability of contractual or part-time employees, with companies increasingly looking to hire gig workers.
- As per a report by ASSOCHAM, India's gig sector is expected to increase to US\$455 billion at a CAGR of 17% by 2024 and has the potential to expand at least 2x the pre-pandemic estimates.
- India has emerged as the 5th largest country for flexi-staffing after US, China, Brazil and Japan.
- In another estimate, India is likely to have 350 million gig jobs by 2025, presenting a huge opportunity for job seekers to capitalize and adapt to the changing work dynamics.
- At present, India has a pool of 15 million freelance workers staffed in projects across IT, HR and designing. In addition, India's workforce is growing by 4 million people annually.

Challenges in gig economy

- Lack of Benefits: Gig workers have no social security benefits like ESI, PF or insurance. They have no paid leaves so failure to work means loss of wage. Gig/Platform workers are not covered in all the labour codes, specifically the 'Code on Wages, 2019' which prescribes minimum wages for various jobs.

- **Work Conditions:** Most workers have to put in long hours of work in order to make the job viable. A large components of workers' wages consists of incentive which coerces workers to work for long hours. This reduces the advantage of 'flexible work' in gig economy. There is lack of transparency on incentive structures.
- **Job Security:** Most gig workers work on a day-to-day basis, and can be terminated from their jobs without any notice. Many gig workers were laid off during the pandemic.
- **Hidden Charges:** Many aggregators/platforms are burning cash by giving large discounts to users in order to capture larger market share. Companies try to sustain this by charging high commissions on gig workers.
- **Low Bargaining Power:** Platform workers have little or no voice. Technology has tilted the power and bargaining scales strongly in favour of the platform companies.

What can be done?

- The NITI Aayog Report, "India's Booming Gig and Platform Economy" has made several recommendations.
 1. **Skill Development for Workers:** Platform-led models of skilling and job creation need to be promoted for the gig and platform sector. Platforms can collaborate with the Ministry of Skill Development and Entrepreneurship, and the National Skill Development Corporation (NSDC) to nurture skilled workers and micro-entrepreneurship.
 2. **Accelerating Access to Finance for Workers:** Access to institutional credit may be enhanced through financial products specifically designed for platform workers and those interested to set-up their own platforms. FinTech and platform businesses may be leveraged to provide cash flow-based loans to workers.
 3. **Platformization:** A Platform India Initiative can be launched on the lines of Start-up India. The purpose would be to increase access to the platforms. This can be achieved by simplification and handholding, funding support and incentives, skill development, and social financial inclusion.
 4. **Extending Social Security:** Platforms can offer paid leaves, and access to insurance along with pension and retirement benefits. Gig and platform firms may consider providing income support to workers. This will help in providing assured minimum earnings and social security from income loss.
 5. **Enhancing Social Inclusion:** Gender Sensitisation and Accessibility Awareness Programmes for workers and their families should be undertaken.

Conclusion

Global Gig Economy Index report has ranked India among the top 10 countries. The report says there has been an increase in freelancers in India from 11% in 2018 to 52% in 2019. But looking at the challenges, without appropriate social security, gig workers are always at the risk of losing livelihood. As suggested by NITI aayog, several suggestions can be implemented to realise the potential of gig workers.

11. What are the merits and demerits of targeted distribution of subsidized food?

Do you think universal coverage is a viable option? Critically comment.

Approach

Candidate are expected to write about what is TPDS and in basic what is food subsidy. It is also expected to write merits and demerits of the TPDS. Also critically comment on implementation of universal coverage of food subsidy with recent existing examples.

Introduction

Public distribution system (PDS) evolved as a system of management of scarcity through distribution of food grains at affordable prices. Food Security of beneficiaries is ensured by distributing food grains at subsidized prices through the Targeted Public Distribution System (TPDS).

Body

What is Food Subsidy:

- It's the difference between the market price of a commodity, for example wheat and rice which are procured by the government, and the price at which they are being sold to the beneficiary in the form of subsidized food grain.
- The food subsidy has increased over the years, having more than quadrupled from Rs 21,200 crore in 2002-03 to Rs 2.2-lakh crore in 2019-2020.

Demerits of targeted distribution of subsidized food:

- Identification of beneficiaries: Studies have shown that targeting mechanisms such as TPDS are prone to large inclusion and exclusion errors. This implies that entitled beneficiaries are not getting food grains while those that are ineligible are getting undue benefits.
- Ghost Cards: "Ghost cards" are cards made in the name of non-existent people. The existence of ghost cards indicates that grains are diverted from deserving households into the open market.

- Imbalances in the availability of storage capacity across state: There is an imbalance in the availability of storage capacity across regions.
- Leakage of food grains: TPDS suffers from large leakages of food grains during transportation to and from ration shops into the open market. In an evaluation of TPDS, the Planning Commission found 36% leakage of PDS rice and wheat at the all-India level.
- Agriculture distress: Due to this factor farmers do not have the incentive to produce other crops such as pulses. This puts immense pressure on the water table as the above crops are highly water-intensive.

Merits of Targeted distribution of subsidized food:

- National coverage: During Covid crisis, the country's technology-driven PDS swiftly came to the fore by successfully scaling up to distribute almost double the quantity of food grains to more than 80 crore beneficiaries in the country during April to November 2020.
- Food security: Providing foodgrains and other essential items to vulnerable sections of the society at reasonable (subsidised) prices. It has helped in avoiding hunger and famine by supplying food from surplus regions of the country to deficient regions.
- Impact on market: To have a moderating influence on the open market prices of cereals, the distribution of which constitutes a fairly big share of the total marketable surplus.

There are some alternatives to TPDS, which address some problems during implementation. Tamil Nadu implements a Universal rather than a Targeted PDS.

- Non-classification of beneficiaries- Subsidised PDS commodities are distributed to all residents without classifying them into different categories.
- According to the Justice Wadhwa Committee Report, non-classification helps the state avoid errors of exclusion of eligible and vulnerable families.
- However, TN identifies AAY beneficiaries. Commodities provided under universal PDS – Rice is distributed at the price of Re 1/ kg to everyone, lower than the central issue price.
- Groups involved in the distribution of food grains – No private trader is engaged in the PDS activity. Ration shops are mainly run by the cooperative societies and the Tamil Nadu Civil Supplies Corporation, the FCI counterpart in the state.
- The experience of universal PDS in Tamil Nadu shows that transfers are twice as effective in increasing calorie intake.

Universal coverage feasibility problems:

- Fiscal burden: Due to the large size of the population, the government may experience high fiscal burden. Furthermore, once introduced, it may become difficult for the government to wind up.

- Inequality: Critics argue that universal coverage of food to rich persons would compromise the idea of an equal society and state welfare for the poor.
- Distortion: universal food subsidies will more distort the cropping pattern which leads to environmental degradation and pollution.
- In Tamilnadu Families are not given 35 kg as mandated by the central government; rice cardholders get anywhere between 12-20 kg rice depending on the number of individuals in their family.

Conclusion

Subsidies are must to ensure welfare of the poor. It can help in improving access to education and bridge socio-economic divides across communities in the country. However, these can be rationalised in order to reap optimum benefits. It is better to make subsidies more rational and targeted instead of universal.

12. What are the challenges to food security caused by climate change? In this regard, examine the significance of non-traditional sources of nutrition to address this challenge.

Approach

Question can be approached by first addressing the challenges posed by climate change to food security. In the second part, non-traditional sources of nutrition, millets can be shown as the way forward to tackle climate change and food security.

Introduction

The current food system (production, transport, processing, packaging, storage, retail, consumption, loss and waste) feeds the great majority of world population and supports the livelihoods of over 1 billion people. Observed climate change is already affecting food security through increasing temperatures, changing precipitation patterns, and greater frequency of some extreme events. Climate stresses are impacting the four pillars of food security i.e. availability, access, utilisation, and stability.

Body

Climate change and Challenges to food security

- Climate change impacts the biophysical conditions in which crops grow. Some crops are less heat resistant as the atmosphere grows warmer, these become less productive. We're already seeing declines in the productivity of staples like wheat.

- There are also significant nutritional impacts — as more carbon dioxide gathers in the atmosphere, crops have less nutrition, less vitamins and minerals in them.
- Climate Change and Food Systems are Interlinked- The climate crisis impacts all parts of the global food system — from production to consumption.
- It destroys land and crops, kills livestock, depletes fisheries, and cuts off transport to markets which further impacts food production, availability, diversity, access, and safety.
- At the same time, food systems also impact the environment and are a driver of climate change. Estimates show that the food sector emits around 30% of the world's greenhouse gases.
- The agenda of ending world hunger and malnutrition in all its forms by 2030 is facing formidable challenges as the climate crisis worsen.
- This has been exacerbated by the Covid-19 pandemic that has doubled the population under chronic hunger from 130 million to 270 million.
- The UN World Food Programme (WFP) shows that a 2°C rise in average global temperature from pre-industrial levels will see a staggering 189 million additional people in the grip of hunger.
- As per the latest IPCC Report, the climate crisis will not only impact food production and livelihoods but also threaten nutrition through multi-breadbasket failures.

What can be done?

Millets as a tool to ensure food security

- Growing millet has many advantages: Being a rain-fed crop with minimal use of fertilisers. No pesticide as they are less vulnerable to insect attack. Seeds of millet can be stored for years making it advantageous in drought-prone areas.
- They consume 70 percent less water than rice; grow in half the time of wheat; and require 40 percent less energy in processing.
- They are one-stop solution in the wake of climate change, water scarcity, and drought conditions along with high nutritive value to provide sustainable food security.
- Millets are an excellent source of antioxidants and help enhance capability of probiotics with potential health benefits.
- They play a role in body immune system, a solution to tackle childhood undernutrition and iron deficiency anaemia. Evidence indicates higher nutritive value of millets as compared to other cereal crops.
- There is ample evidence on nutritive value of millets being a good source of energy, carbohydrates, fats, proteins, soluble and insoluble fiber, antioxidants, iron, zinc, and vitamins and can help eliminate micronutrient deficiency for India and other developing nations.

- Millets have the potential to help achieve the sustainable development goals (SDGs)—mainly, SDG 2 (Zero Hunger), SDG3 (Good Health and Well-being), SDG 12 (Sustainable Consumption and Production), SDG 13 (Climate Action).
- Sustainable diets are protective of bio diversity and ecosystems with low environment impact, which contributes to food and nutrition security. Diversifying crop production by including more coarse cereals like millets can build food supply, reduce Green House Gas (GHG) emissions, and enhance climate resilience without compromising on nutritive value.
- The inter-cropping of millets with other crops is especially beneficial because the fibrous roots of millet plants help in improving soil quality, keep water run-off in check and aid soil conservation in erosion-prone areas, thereby restoring natural ecosystems.

Conclusion

Brimming with potential, millets can act as a vital cog in the sustainable management of food security if backed by policies that promote their production, incentivize farmers and strengthen market linkages. The United Nations (UN) has declared 2023 as 'the international year of millets' and has called all stakeholders to provide support to draw policy attention to the nutritional and health benefits of millet consumption, and their suitability for cultivation under adverse and changing climatic conditions.

13. To realise the goal of doubling the farmers income there must be an impetus on increasing the export of agri products . Do you agree ? substantiate your views .

Approach

A simple straightforward question where candidates are expected to write about government's goal of doubling the farmers income and how exporting the agri products will give impetus to it. Write down your opinion and substantiate your views.

Introduction

Agriculture sustains livelihood for more than half of India's total population. Doubling farmers' income is an overwhelming task for decision makers, scientists and policy makers because of its continued role in employment, income and most importantly in national food security. Promotion of agri-exports could potentially propel India into the top bracket of agricultural exporters, and in the process facilitate doubling of farmers' income within a reasonable time-frame.

Body

There is a need to give increased focus on exploring global markets for agricultural commodities to give an additional source of market for the surplus of agricultural produce India currently has to realise doubling farmers income.

- Achievement of the \$5-trillion economy goal by India could be pushed by a couple of years from the original deadline of 2024-25, due to the pandemic-induced recession during 2020-21. Only a V-shaped recovery during 2021-22, and a sustainable growth of 9% per annum over the next five years, can turbocharge the economy to touch the \$5-trillion mark.
- The agricultural sector, which contributes 14.6% to the economy, needs to support this objective by focusing on private investment and exports, while targeting an annual agri-GVA growth of 5%.
- A focus on reforms in agri-marketing and agri-exports, along with the promotion of high-tech, digital and precision agriculture, is an appropriate recipe for transforming the agricultural sector, while doubling farmers' income, within a reasonable time-frame.
- India ranks amongst the top 10 exporters of agricultural products in the world. According to the WTO's World Trade Statistical Review 2020, the country's share in global agricultural exports increased from 1.1% in 2000 to 2.2% in 2017, valued at \$39 billion, but fell to 2.1% in 2019, valued at \$37 billion. While the US witnessed a decline in its share of global agricultural exports from 13% in 2000 to 9.3% (\$165 billion) in 2019, Brazil's share increased from 2.8% to 5% (\$89 billion), and that of China increased from 3% to 4.6% (\$82 billion).
- In order to catch up with Brazil and China, India needs to bring about structural reforms in the agricultural sector, including a stable trade policy regime.
- India's agricultural exports experienced huge fluctuations during the 10-year period 2010-11 to 2019-20. The 10-year CAGR was 1.7%. During the first five years, 2010-11 to 2014-15, agri-exports increased significantly from \$24.4 billion (2010-11) to an all-time high of \$43.1 billion (2013-14), before declining to \$39.4 billion (2014-15), at a CAGR of 11.5%. The second five-year period (2015-16 to 2019-20) witnessed a slump in agri-exports to \$33 billion (2015-16), before a steady increase to \$38.8 billion (2018-19), followed by a slide to \$37 billion (2019-20). The CAGR during this period slowed down considerably to 3.7%, from the previous period (see graphics).
- According to the Agricultural and Processed Food Products Export Development Authority (APEDA), during April-October 2020, India's exports of top three agri-commodities, viz. basmati rice, non-basmati rice and buffalo meat, in terms of value (in dollars) grew by 9%, 104.4% and 10.5%, respectively, compared to the corresponding period of the previous year.
- The sharp rise in exports of non-basmati rice can be attributed to lower prices compared to that of major rice exporters, Thailand and Vietnam, and also because these countries stopped exports due to the lockdown. Taking advantage of this, Indian non-basmati rice exporters have been able to meet the increasing import demands from China, Bangladesh and African countries.

- However, what is worrisome is the absence of a stable trade policy regime in India. In order to control prices in the domestic market, the government has, at different times, resorted to banning of exports of major agri-commodities, viz. rice, wheat, sugar and onion. Imposition of minimum export price (MEP) is another tool often used to tame inflation. These measures create uncertainty amongst importing countries, and deprive farmers of higher returns from their produce.
- The Agriculture Export Policy (AEP), 2018, aims at achieving export target of \$60 billion by 2022 and \$100 billion within a few years, thereafter. This is indeed a humongous task, even under normal circumstances, and more so in the aftermath of Covid-19. Therefore, there needs to be a realistic resetting of the timeline to achieve the target.
- This would involve a paradigm shift from a business-as-usual approach to a well-calibrated, comprehensive, strategic and result-oriented agri-export policy and action plan. This would lead to tech-driven agricultural productivity gains across sub-sectors, resulting in higher output and marketable surplus for domestic and foreign markets
- Majority of India's agri-exports are low value, raw or semi-processed products. Therefore, the agri-export strategy should include integration of value-added agri-produce with global value chains (GVC), by adopting best agricultural practices involving productivity gains and cost competitiveness. It's also imperative for India to reconsider joining the RCEP at an opportune time, and to enter into FTAs with the EU, the US and the UK.
- In order to boost exports of dairy products and make the dairy sector globally competitive, the central government needs to consider development of dairy export zones (DEZs) in collaboration with state governments. This could immensely benefit small dairy farmers, organised as farmer producer organisations (FPOs)/farmer producer companies (FPCs)/cooperatives, for supplying milk, and also for contract production of dairy products on behalf of major dairy producing companies, leading to cost efficiency and higher export revenue to dairy companies as well as significantly higher income to farmers.
- Linking of FPOs through contract farming arrangements with export-oriented food processing units of food parks created under the Pradhan Mantri Kisan Sampada Yojana, for producing processed cereals, fruits, vegetables, fish and marine products, would boost exports of processed food and raise income of small and marginal landholders and small fish farmers.
- With global trade in organic products estimated to be around \$90 billion, there is a huge opportunity for exports of value-added organic products from India, which exported \$689 million worth of organic food in 2019-20. Madhya Pradesh, Rajasthan, Maharashtra, the North Eastern Region (NER), Uttarakhand and Goa are major producers of organic products.
- It's desirable to create Organic Product Export Zones (OPEZs) in these states and the NER, with common infrastructure for processing, standardisation, storage, logistics, and connectivity to ports and airports. Branding of products and registration as GI could further facilitate exports of value-added organic

products. FPOs of organic farmers could be formed and linked to the OPEZs, to ensure higher income for farmers.

- Economic diplomacy and promotion of Brand India can play an effective role in increasing agri-exports.
- The AEP has recommended the establishment of Agriculture Export Zones (AEZs), to facilitate value addition of agri-commodities for increasing exports in a WTO-compatible manner. In order to ensure higher income for farmers, FPOs need to be linked to AEZs to supply SPS-compliant agri-products.
- Higher investments in R&D and technology, viz. the Internet of Things, artificial intelligence and blockchain, for improving agricultural productivity, resource-use efficiency and export competitiveness.
- Linking farmers/FPOs to the export market and skilling of surplus farmers for their absorption in agri-export value chains could be an important strategy to sustainably raise farmers' income.

Conclusion -

Concerted efforts by the central and state governments, Indian embassies, APEDA, EXIM Bank, NABARD, and all other stakeholders in the agri-export value chains are needed to address a whole range of issues pertaining to promotion of agri-exports, which could potentially propel India into the top bracket of agricultural exporters, and in the process facilitate doubling of farmers' income within a reasonable time-frame.

14. How can technology aid in addressing the challenge of food insecurity? Explain with the help of suitable examples.

Approach

Candidates are expected to start with what is food security need to define it and highlight basic component of food security in brief. With highlighting the food security challenges write down how technology and its use will mitigate the challenges.

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.

Challenges of food security:

- Availability of food grains at affordable price: Considering the continuous increase in the population of India, will require 333MT of food grains by 2050 to maintain food security. Land and water resources are limited hence remains one of the major challenge.
- Crop diversification: It reduced the area under food grains and pulses where as there is increase in area under the fruits, vegetables and oil seeds.
- Climate change: Climate change is a crucial factor affecting food security in many regions including India. The changing climate will influence the food grain production in different ways. For example, deficit rainfall or flooding. Similarly, extreme high or low temperatures result in variations in the length of crop growing season.
- Land and Water resource Utilisation: The mismatch between the expanding demand for and supply of water emerging and spreading steadily over space and time.
- Dietary Patterns: changing dietary preferences significantly increased global demand for food and thereby generating tremendous pressure on native vegetation and ecosystems.

One of the best ways to ensure food security in future is investing in new technologies that enable farmers to connect with information and institutions that can decrease uncertainty and mitigate risk.

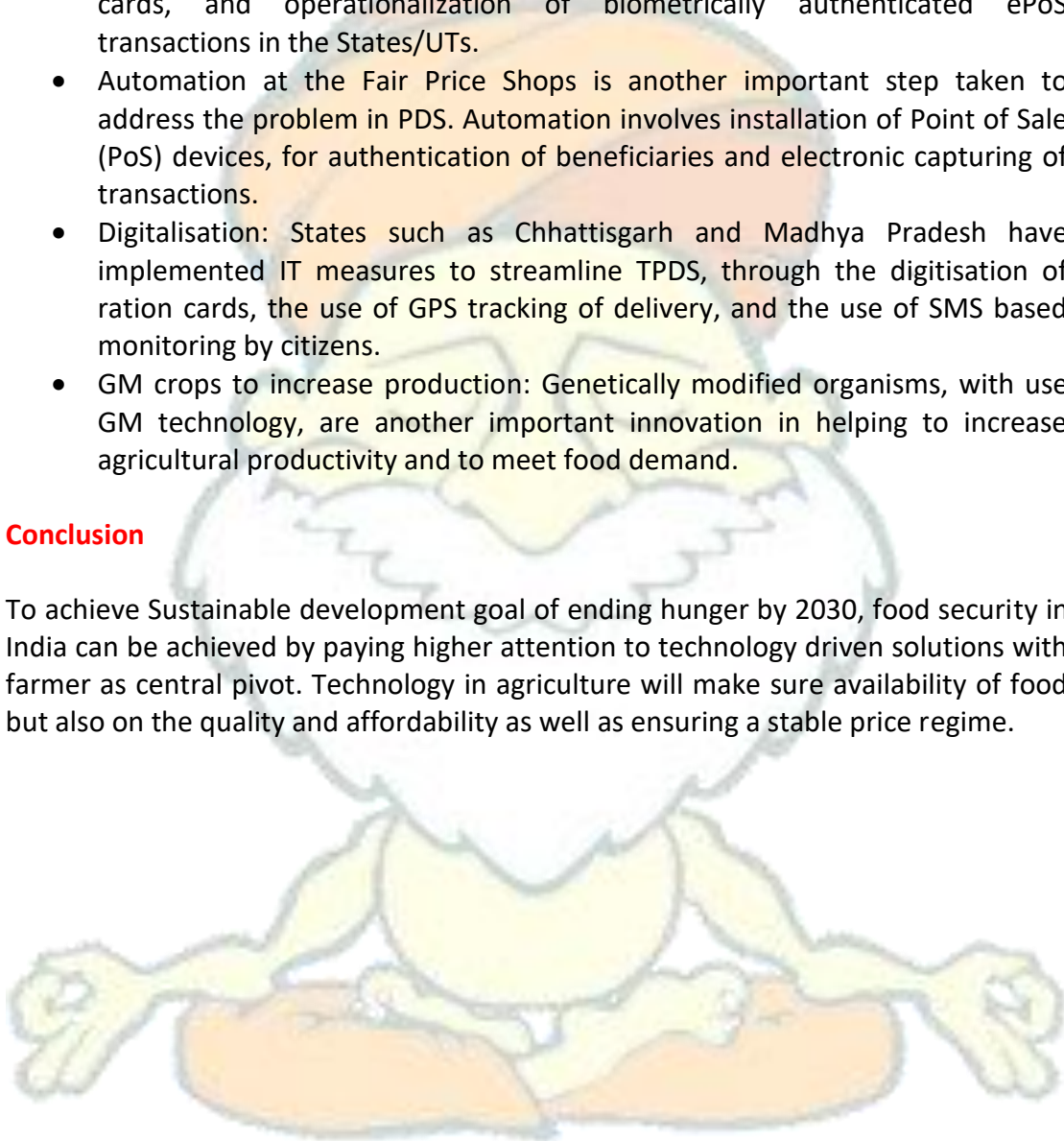
Technology in addressing the challenges of food security:

- Connectivity and Information dissemination: The Gramin Krishi Mausam Seva of Earth System Science Organisation-Indian Meteorological Department has been successful in providing the crop specific advisories to the farmers through different print/visual/Radio/IT based media including short message service (SMS) and Interactive Voice Response Service (IVRS) facilitating for appropriate field level actions.
- Alert and real time weather forecast: Promotion of conservation farming and dry land agriculture, with each village provided with timely rainfall forecasts, along with weather-based forewarnings regarding crop pests and epidemics in various seasons, is necessary. With adoption of drought-tolerant breeds that could reduce production risks by up to 50%.

- Government initiatives: Krishi Vigyan Kendra organizes programs to show the efficacy of new technologies on farmer fields. It tests seed varieties or innovative farming methods, developed by ICAR institutes. This allows new technologies to be tested at the local level before being transferred to farmers.
- One Nation One Ration: nation-wide portability of ration cards through the implementation of an IT-driven system that includes the installation of ePoS devices at FPSs, seeding of Aadhaar numbers of beneficiaries with their ration cards, and operationalization of biometrically authenticated ePoS transactions in the States/UTs.
- Automation at the Fair Price Shops is another important step taken to address the problem in PDS. Automation involves installation of Point of Sale (PoS) devices, for authentication of beneficiaries and electronic capturing of transactions.
- Digitalisation: States such as Chhattisgarh and Madhya Pradesh have implemented IT measures to streamline TPDS, through the digitisation of ration cards, the use of GPS tracking of delivery, and the use of SMS based monitoring by citizens.
- GM crops to increase production: Genetically modified organisms, with use GM technology, are another important innovation in helping to increase agricultural productivity and to meet food demand.

Conclusion

To achieve Sustainable development goal of ending hunger by 2030, food security in India can be achieved by paying higher attention to technology driven solutions with farmer as central pivot. Technology in agriculture will make sure availability of food but also on the quality and affordability as well as ensuring a stable price regime.



15. Explain the economics of animal rearing during times of financial crisis for the rural household.

Approach

Student can explain in detail the economics of animal rearing. Supporting the argument with data and facts, importance of livestock can be highlighted. In the second part, challenges associated with the sector can be given with a way forward.

Introduction

As per the Ministry of Fisheries and Animal husbandry animal rearing is considered as an associate business within agricultural activities that are concerned with animals that are raised for meat, fiber, milk, eggs, or other products. Animal rearing is an integral component of Indian agriculture, supporting the livelihood of 55% of the rural population.

Body

Economics of animal rearing

- In mixed farming crop production is combined with the rearing of livestock. The livestock enterprises are complementary to crop production; so as to provide a balance and productive system of farming.
- Livestock contributed 16% to the income of small farm households as against an average of 14% for all rural households. India has vast livestock resources. Livestock sector contributes 4.11% GDP and 25.6% of total Agriculture GDP.
- A large number of people in India being less literate and unskilled depend upon agriculture for their livelihoods. It provides employment to about 8.8 % of the population in India. The landless and less land people depend upon livestock for utilizing their labour during lean agricultural season.
- The livestock products such as milk, meat and eggs are an important source of animal protein to the members of the livestock owners. The per capita availability of milk is around 375 g/day and eggs is 74/annum during 2017-18.
- The animals offer social security to the owners in terms of their status in the society. The families, especially the landless which own animals are better placed than those who do not. Gifting of animals during marriages is a very common phenomenon in different parts of the country.
- Animal husbandry promotes gender equality. More than 3/4th of the labour demand in livestock production is met by women. The share of women employment in the livestock sector is around 90% in Punjab and Haryana where dairying is a prominent activity and animals are stall-fed.
- Protection against disasters: Livestock are the best insurance against the drought, famine and other natural calamities. Majority of the livestock population is concentrated in the marginal and small size of holdings.

Further, agricultural productions get valuable organic manure provided by the livestock.

- When average land holdings have depleted to dangerously low levels – 80% of the farmers are small (1-2 hectares) and marginal (less than 1 hectare, these alone make 62%) farmers – animal rearing can provide alternative sources of livelihood.

Challenges involved in animal rearing

- Outbreak of Diseases: Frequent outbreaks of Foot and Mouth disease, Black Quarter infection, Brucellosis etc, which affect livestock and productivity.
- Yield and productivity issues: Although India is the largest producer of milk, the yield of Indian cattle is only about 50% of the global average.
- Lack of technology advancements: Limited artificial inseminations, deficiency in quality germplasm, lack of technical manpower.
- Funding issues: The livestock sector received only 12% of total expenditure on agriculture and allied sector which is very less as per its size and contribution to GDP.
- Poor insurance coverage: Only 6% of animal heads are provided with insurance coverage.
- Market access: markets for livestock and its products are underdeveloped and are not formalized acting as a disincentive to farmers to adopt livestock.
- Presence of informal sector: About half of the meat production comes from the unregistered slaughterhouses which are leading to poor price realization to farmers.

What can be done?

- Sufficient resources: Providing sufficient fodder and drinking water is the need of hour to increase productivity of livestock rearing in India, in the rain-shadow region.
- Marketing: Trade Policies like marketing have to be more effective for promotion of various livestock products like egg, fish, milk etc. and providing sufficient price to farmers by reducing influence of middlemen.
- Promoting indigenous breeds: Our indigenous breed of cattle shall be promoted, because most foreign breed cattle are not suitable to our climate and even provide low quality. There are some exceptions like Jersey cows, but overall introduction of foreign breeds has not been very successful.
- Training: Necessary training and subsidies shall be provided to farmers to adopt livestock rearing as an alternate source of income.
- Research and development: Government shall also focus on Research & Development in livestock sector to increase per livestock productivity to provide more benefits to small & marginal farmers.

Conclusion

Animal rearing forms a backbone of rural economy after agriculture. If provided with smart solutions and capacity building, it can provide more supplementary income. Farming sector with more erratic behaviour of climate has become more vulnerable. Extra income from animal rearing can act as a cushion for farmers in crisis situation.

16. India's culinary diversity imparts huge potential to its food processing industry?

Do you agree? Substantiate with the help of suitable examples.

Approach

Candidates are expected to write about the progressive growth of FPI in India and its benefits in the introduction. With explaining what is the FPI and try to highlight how diverse Indian culinary food industry can expand with the utilization of FPI in promoting it. Try to explain with best suitable example.

Introduction

India has made vast progress overtime in providing food security for its people and has become largely self-reliant in agriculture. Accordingly, the policy focus has shifted from attaining self-sufficiency to generating higher and stable income for the farming population. Food processing industry (FPI) is one area which has the potential to add value to farm output, create alternate employment opportunities, improve exports and strengthen the domestic supply chain.

Body

FPI:

- Food Processing includes process under which any raw product of agriculture, dairy, animal husbandry, meat, poultry or fishing is transformed through a process (involving employees, power, machines or money) in such a way that its original physical properties undergo a change and the transformed product has commercial value and is suitable for human and animal consumption.
- Similarly, NITI Aayog estimated annual post-harvest losses of close to Rs 90,000 crore. With greater thrust on proper sorting and grading close to the farm gate, and diverting extra produce to FPI, this wastage could also be reduced, leading to better price realisation for farmers.

Indian culinary diversity and potential of Food processing industry:

- The Indian snack and food industry, in particular, has seen massive changes with establishment of several Food processing unit. The FPI segment was

dominated by automation, which transformed the Indian snack and food-making industry.

- Millennials, Generation X, and Generation Z have carved out a niche for themselves in the Indian food sector. Last year's work from home phase was punctuated by frequent snacking and ordering packaged food made in processing unit.
- With the introduction of the coronavirus, they moved their focus to packaged meals that promised sanitation, safe packaging, and convenience. As a result, pre-packaged goods, such as ready-to-eat foods and frozen foods, have become increasingly popular in recent years.
- For example, the major companies operating in India for delicious Indian culinary are in ready-to-eat food products this market includes, MTR Foods, Haldiram Snacks, Bikanervala Foods, Godrej foods, Vadilal and Venky's India Private Limited.
- It is also found that about 76 per cent parents from the metro cities, especially both working, are serving ready-to-eat meals to children around 10 to 12 times per month.
- Earlier, the ready-to-eat products were limited to chips, snacks and so on, however now, the companies are widening their scope as increasing demand is being witnessed for a wide range of food product categories such as Ready to Eat Dal Makhani, Palak Paneer, Poha, Biryani, Pulao etc. by MTR, GITS, TATA Q, Haldiram.
- The tendency has continued, and as a result, demand for savoury snacks, particularly namkeen, as well as confectionary items such as biscuits and cookies, has increased. The manufacturing, processing, distribution, and marketing of Indian snack foods all increased as a result of the surge in demand.

Indian foods potential can be enhanced by Food processing industry in India by:

- Preserve the nutritive quality of food and prolongs the shelf life by preventing them from spoilage due to microbes and other spoilage agents,
- Enhances the quality and taste of food thereby bringing more choices in food basket
- Enhances consumer choices: Today, food processing allows food from other parts of the world to be transported to our local market and vice versa.

Challenges of ready eat Indian foods prepared by FPI:

- In addition, due to high prices of few ready-to-eat products, consumers tend to avoid them due to small servings, especially in case of big families in India.
- In addition, in the rural areas, ready-to-eat food products still do not constitute a large market except for few already popular products such as Maggie and namkeens.
- A large section of people also does not prefer to buy packaged food products due to health concerns.

Conclusion

Nevertheless, with increasing urbanisation, growing working class population, changing consumer taste, and leading players offering a wide range of products, India ready-to-eat food market is anticipated to grow at a robust pace in the coming years.

17. Examine the upstream and downstream requirements of milk products. How does the model of forward and backward integration work in this sector? Explain with the help of suitable examples.

Approach

Question can be approached by giving a brief data about dairy sector in India. In the body part, upstream and downstream requirements of milk product can be given. In the next part, forward and backward integration in dairy sector can be stated while highlighting issues associated with it. Way forward can be given in the end.

Introduction

Milk is the single-largest agri-commodity in India. It contributes 5% to the national economy and employs 80 million dairy farmers directly. A revival in economic activities, increasing per capita consumption of milk and milk products, changing dietary preferences and rising urbanisation in India, has driven the dairy industry to grow by 9-11% in 2021-22. This sector requires a robust integration with market and requires strong forward and backward integration.

Body

What are the upstream requirements of milk products?

Upstream requirements refer to the raw materials, machinery and equipment the industry requires to carry out operations.

- Upstream requirements of the processed and packaged milk products includes
 1. Milk which form the raw material for the industry.
 2. Quality cattle to provide enough milk production for the population
 3. Dairy farmers and cooperatives that can participate in dairying as the economic activity.
 4. Fodder availability to feed the cattle.
 5. Warehousing and storage facilities.
 6. An efficient logistics management.

7. Efficient transport facilities and connectivity to ensure the picking up of the milk from the designated points at a designated time.

Downstream requirements of milk products

Downstream requirements refer to the requirements to ensure the safe transfer of the products of the company to the consumers.

- Downstream requirements of the dairy industry include
 1. A facility to ensure the product is able to withhold its characteristics in the environment.
 2. Transport and logistics to ensure the transfer of the products to the consumers.
 3. Delivery chain to ensure the product goes to the consumer with the assured quality as the shelf life of the processed and packaged goods is a concern.
 4. The downstream requirements include cold storages, transport facilities to ensure the good quality milk is reached to the consumers.

Forward and backward integration in dairy sector

For any industry, backward linkages are directed towards suppliers; while the forward linkages are directed towards consumers. With respect to dairy industry, a milk processing Unit sets up strong backward linkages with the farmers, farmer producer organizations, farmer's groups etc. Further, to be able to sell its processed milk, it develops strong forward linkages with wholesalers, retailers, exporters etc.

- Backward Integration refers to that integration where Company expands its activities to upstream areas. Company aims to get raw milk at cheap rates, uniform quality, steady supply and eliminate any middlemen. e.g. AMUL procures milk directly from farmers
- Forward Integration refers to that integration where Company expands its activities to downstream areas. Company aims to get more control over sales, consumer-contact and eliminate any middlemen, wholesaler, retailer. e.g. Amul has its own pizza outlets and milk parlours.
- Further, for industry players, effective links add value to the brand by ensuring high quality end to end and better control over the factors of production resulting in cost saving and enhanced efficiency.
- Effective and seamless backward and forward integration in dairy industry plug gaps in supply chain in terms of availability of raw material and linkages with the market. Hence, It benefits the economy and farmers.

Issues with backward integration in dairy sector

- Reduction in pasture lands, and decreasing availability of quality fodder owing to rain fed conditions.

- Regional imbalance in availability and quality of transportation and bulk coolers.
- Increasing incidence of veterinary diseases, with low presence of veterinary clinics in rural areas.
- Low productivity of indigenous breeds and lack of nutrition in milk from foreign breeds.
- Low availability of quality breeding bulls and semens and comparatively less success in cross breeding indigenous and foreign breeds.
- Excessive use of anti-biotics in cattle growth.

Issues with Forward integration

- Lack of marketing facilities for farmers.
- High presence of middleman that eats away profit of farmers.
- Regional success of cooperatives, only in some states like Gujarat and Maharashtra.
- Price rise due to increasing focus on protein intake, especially in urban areas.
- Adulteration and presence of synthetic milk. Around 70% of Indian milk doesn't meet the standards set by set by the Food Safety and Standards Authority of India (FSSAI).
- Untapped export potential due to issues like quality, hygiene etc.
- A taxation rate of 12% on dairy equipment and machinery.

What can be done?

- Cost effective and nutritionally balanced feed for animals.
- Encourage cooperatives in eastern part of India.
- Reproductive efficiency of cattle be improved.
- Training related to entrepreneurial marketing of milk and milk product
- 'Optimum usage of technology' for cattle management.

Conclusion

Dairy sector has a huge potential for employment generation and assisting farmers with extra income in the times of economic uncertainty. Integrating forward and backward linkages and strengthening them will immensely benefit the milk producers. India is the highest producer of milk in the world but more needs to be done as India aspires to become dairy of the world.

18. What are key challenges faced by supply chain of agri products in India ? what measures have been announced by govt to strengthen the supply chain infrastructure in recent years . Discuss.

Approach -

A simple straightforward question where candidates are expected to write about key challenges faced by supply chain of agri products in India. In second part of answer write about what measures have been announced by govt to strengthen the supply chain infrastructure in recent years .

Introduction -

Despite being largest agri food producer in world India lacks robust supply chain management and its costing nation a huge loss in GDP. Report by Niti ayog stated this in its annual report. An agriculture supply chain system comprises organizations/cooperatives that are responsible for the production and distribution of vegetable/Fruits/Cereals/Pulses or animal-based products.

Body

Challenges of Supply Chain Management

- **Connectivity:** There is lack of connectivity from villages to markets hinders supply to markets .
- **Sorting and Grading technology:** Farmers lack the knowledge about the process
- Numerous stake holders working in isolation: The food supply chain is complex with perishable goods and numerous small stake holders. In India, the infrastructure connecting these partners is very weak.
- **Lack of demand estimation:** Demand forecasting is totally absent and the farmers try to push whatever they produce into the market.
- **Lack of technology applications:** Cold chain logistic supply chains should take advantage of technology improvements in data capture and processing, product tracking and tracing, synchronized freight transport transmit times for time compression along the supply chain and supply-demand matching.
- **Lack of system integration:** The supply chain needs to be designed and built as a whole in an integrated manner. The process of new product development, procurement and order to delivery processes should be well designed and well supported with the help of IT tools and software.
- **Presence of large number of unorganized retailers:** At present the unorganized retailers are linked with farmers through wholesalers or commission agents. The commission agents and wholesalers redundant supply chain practices make unorganized further inefficient.
- **Slowdown in production growth:** With around 67 percent of landholdings being marginal (<1 hectare), with an average size of 0.4 hectares, more than half of

marginal farmers are likely to not have any excess income to spare beyond subsistence, hindering the improvements in farm-level productivity .

- **Lack of mechanization**- lack of mechanization in supply chain management hinders speed to delivery of products .
- **Lack of national waterways** - waterways are cheapest mode of transportation hence lack of waterways burdens road with traffic and increasing fuel cost also .

Government measures to strengthen Supply chain management -

- Improving infrastructure through schemes like Aajeevika Grameen Express yojana, SAMPADA yojana (building warehouses)
- Vertical coordination of farmers through cooperatives, contract farming and retail chains would facilitate better delivery of output, reduce market risks, provide better infrastructure, attract more public interest, acquire better extension services, and create awareness regarding the prevailing and new technologies.
- Customized logistics is another important immediate requirement to make logistic effective. This reduces the cost, facilitates the maintenance of quality of the produce and fulfills the requirements of targeted customers.
- Information system for better coordination among different stakeholders from farmers to consumers is the need of the hour. The internet and mobile communication can also be used to enable information and financial transfer between the stakeholders.
- Public private partnership is another strategic solution. Supply chain like washing, waxing, grading, sorting, packing, pre-cooling, handling facilities, insurance, finance, transport and processing facilities would add value to supply chain functioning.
- Establishment of Mega Food parks : These parks will also provide the required infrastructural and common facilities which are essential for sustenance of the industries. Quality assurance laboratories, Ware housing including cold storages, common effluent treatment plants etc.
- Scheme for Creation of Backward and Forward Linkages – to perishable horticulture and non-horticulture produce by plugging the gaps in the supply chain in terms of availability of raw material and linkages with the market.
- Infrastructure for agro-processing based on cluster approach
- The National Agricultural market (eNam) which creates a pan India market facilitates removal of intermediaries, thereby streamlining the entire supply chain
- The new Contract Farming Act further helps in improving the backward and forward integration of the supply chain
- Electronic Negotiable Warehouse Receipt (e-NWR) System to facilitate an easy pledge financing by banks and other financial institutions
- Inclusion of food processing and agro-warehousing under priority sector lending by RBI
- The Logistics challenge of the supply chain is being taken care of by leveraging the existing PM-Gram Sadak yojana, BHARATMALA, and SAGARMALA schemes

- Promotion of Agri Export Zones, one-time capital grants, etc., are being undertaken.
- 100% FDI in this sector.

Conclusion-

The Government of India has identified the food processing sector as the sunrise sector. Several initiatives are being put in place for promoting primary as well as secondary processing. The supply chain management has to be improved in all the stages of the supply by adopting global best practices in storage, packaging, handling, transportation, value added service etc. And also by disintermediation and participation of organized players i.e., modern supply chain with a view to benefit both farmers as well as ultimate consumers.

19. How do digital technologies help in land administration? Explain with the help of suitable examples.

Approach

Candidates are expected to write about the use of e technology in land records and land governance. Try to highlight with example how the digital technologies are bringing the second generation reforms in the land administration also try to highlight the issues and challenges first.

Introduction

Government of India launched the distribution of e-property cards under the SWAMITVA scheme on National Panchayati Raj day there were 4.09 lakh property owners were given their e-property cards on this occasion this envisages the comprehensive land administration with digital technologies such as E records, land mapping and land bank system.

Body

Issues in land administrations:

- Benami Transfers: Excess lands were transferred to ghost beneficiaries.
- Unproductive lands: The excess lands transferred were fallow or infertile lands which was of less use for cultivators.
- Fragmentation: It led to fragmentation of land holdings, thereby increasing small and marginal farmers.
- Mechanization: With small and marginal land holdings, investment on machine and return on their investment was poor.

Digital technology a useful tool in undertaking effective land administration:

- For a majority of Indian households' wealth invested in real estate, accessing land records and other details of encumbrances including mortgage, liability or claim against a property, is often difficult. Investors too face the drudgery of visiting public land record departments and Registrar's office to verify land records and register land agreements.
- Land-related disputes in India account for 60-70% of all civil litigation. About 25% of all cases decided by the Supreme Court involve land disputes, of which 30% concern disputes relating to land acquisition, according to National Council of Applied Economic Research (NCAER).
- The digitization of land records will mark an epoch in the history of real estate and amplify the potential of the country's real estate. The property sector which had for long been plagued by land issues that snowballed into complex litigations and disputes, will breathe a sigh of relief at this renaissance.
- With 24/7 availability of data online, it will become easy for buyers and sellers to scrutinize property data online and check the authenticity of a land or property.
- A centralized land records system and reforms in land laws are thus the need of the hour to ward off internal constraints, local agitations, and speculative increase in land prices. The GIS land bank system launched by the government recently is a potent step towards actualizing this clamour for change by addressing issues like transparency and credibility directly.
- The GIS land bank system will serve as an information window for investors providing access to an array of details on various industrial belts, eliminating the need to visit various offices and platforms for land information and obtain clearances.
- The land bank system will also push the approach of "One District One Product", in line with the AtmaNirbhar Bharat vision, boost employment opportunities and attract investments from abroad by showcasing the improving ease-of-doing-business.
- With the arrival of GIS-enabled one-stop digital land bank platform, land records would be just a click away and can be accessed from anywhere around the world, enabling seamless and credible property registrations online, doing away with the need of any authorised intermediary.
- The Blockchain in the land registry is used for secure transfer of land property. The transparent nature of Blockchain enables to track the changes made in land documents.
- Advent of Blockchain technology in the land registry is playing a very beneficial role in this developing era. It is helping in uplifting the poor, and marginalized section of the society in fighting illegal authorization of land.
- Digital enabled land records system, a full spectrum rollout in the near future will help organizations and decision makers to gain a deeper understanding of property economics, make faster decisions and take advantages of property developments in future essentially, what we often call a 'game changer'.

Conclusion

With the digitization of land records, a clear picture of land data, starting from the first owner of the land to its present status, including image of property and landowner will be available. Population growth, technological and social hazards, and environmental degradation have all to be taken into greater account today by policy makers, resource planners, and administrators who make decisions about the land. They need more detailed land information than has been traditionally available.

20. Explain the significance of land reforms for inclusive and equitable economic growth.

Approach

Student can define the process of land reforms in introduction. In the body part, history of land reforms can be traced while examining the effect of land reforms on economic growth since independence. In the later part, limited success of land reforms can be shown.

Introduction

Land reforms refers to a wide variety of specific programmes and measures to bring about more effective control and use of land for the benefit of the community as a whole. The main objective of the land reforms is to do away with the existing inequalities in the system of landholding and to increase the agricultural productivity. Land reforms aimed to remove the impediments for increase in agricultural production and elimination of exploitation and social injustice within the agrarian system so as to achieve equality and providing opportunities for all sections

Body

The Indian Government was committed to land reforms and to ensure distributive justice as was promised during the freedom struggle. Consequently, laws were passed by all the State Governments during the Fifties with the avowed aim of abolishing landlordism, distributing land through imposition of ceilings, protection of tenants and consolidation of land- holdings.

Significance of land reforms for inclusive and equitable growth

- According to report of National Commission, “as a result of land reform the feudal and semi- feudal classes have lost their domination over the agrarian Indian economy.” Moreover, the decline of semi-feudalistic relations had led to develop the agriculture on commercial lines.

- Abolition of zamindari led to land being with the tiller who with better realisation of land, inputs and focus increased agricultural productivity.
- Land consolidation stopped fragmentation, gave the marginal farmers access to credit resources, mechanisation and led to cooperative farming in many areas.
- Tenancy reforms gave the security of tenure to the farmers and stopped forceful eviction, tenant had equal rights on the land which led him to plan better for farm seasons and led to better cropping patterns across the country.
- The reforms also coincided with the Green revolution across the country led to manifold increase in productivity.
- Land ceiling acts across states led to redistribution of surplus land, due to which many landless got land and were able to involve themselves in sustainable agricultural practices which increased land productivity.
- Land Reforms led to redistribution of Land from rich to poor. In an agrarian economy like India with massive inequalities of wealth and income, great scarcity and an unequal distribution of land land reforms has led to social equity.
- It led to remove rural poverty by removing intermediaries and tyrants devolving land to farmers. Tenancy reforms and abolition of zamindari system ended social oppression of the depressed classes and led to increase in stature of the erstwhile tenants leading to a more egalitarian society.
- In a land-scarce country with a significant section of the rural population below the poverty line, the case for ensuring that everyone has access to some minimum amount of land seems compelling from the point of a farmer. In a rural economy, whoever control land, controls the power.
- There are enough studies to indicate that because of the land reforms, the quantum of absentee ownership in the 70s was much less serious than in the 50s. Absentee ownership had reduced much more in un-irrigated areas, than in irrigated areas.
- Wastelands were reclaimed and production increased resulting in food sufficiency.
- Access to credit becomes easier due to land ownership under tenancy law. Access to credit & increase in land holdings incentivize farmers to invest in new farming practices.
- Land reforms have to serve as a link helping integration of growth policies with poverty alleviation programmes. Such integration is necessary to focus on the development strategy as a whole – and not merely the individual schemes and programmes – on the rural labourers and poor.
- Protection of the Tribals: Land reforms are significant here since land is the main source of livelihood for the tribal people and they do not have much upward mobility. Abolition of the zamindari system curtailed exploitative practices such as bonded labour.
- The Watershed Development Programme has been one of the important land policy interventions in the recent past and has impacted poverty alleviation, conflict management and environmental management significantly.

Limited success of land reforms

- Growth of Agricultural Labour: Another striking feature of land reforms is that it has led to the rapid growth of landless agricultural labourers. This constitutes about 25 per cent of the agricultural population in the country. This class is still subject to various types of economic bondages and social oppressions.
- The land ceiling legislation has had a twin effect in destroying the agricultural landholdings in India. The legislation has not been implemented well due to which the land given to poor farmers is so negligible that they cannot possibly sustain their families and their lives off of it.
- Also, by taking away land from the bigger landlord, the agriculture has become fragmented and the efficiency that can be achieved on a bigger farm by employing modern machinery and technology has been seriously reduced.
- About 5 percent of farmers hold about 32 percent of farmland and a large farmer (owner of around 43 acres) owns 45 times the size of land that a marginal farmer (owner of around 0.96 acres) owns. This shows gross inequality in implementation of land reforms.

Conclusion

The purpose of land reform is to help weaker section of society and do justice in land distribution. However the pace of implementation of land reform measures has been slow. The objective of social justice has, however, been achieved to a considerable degree but lot needs to be done. New and innovative land reform measures should be adopted with new vigour to eradicate rural poverty. From digitisation to new land acquisition bill, lot can be done to make land reforms more effective for just and inclusive economic growth.

