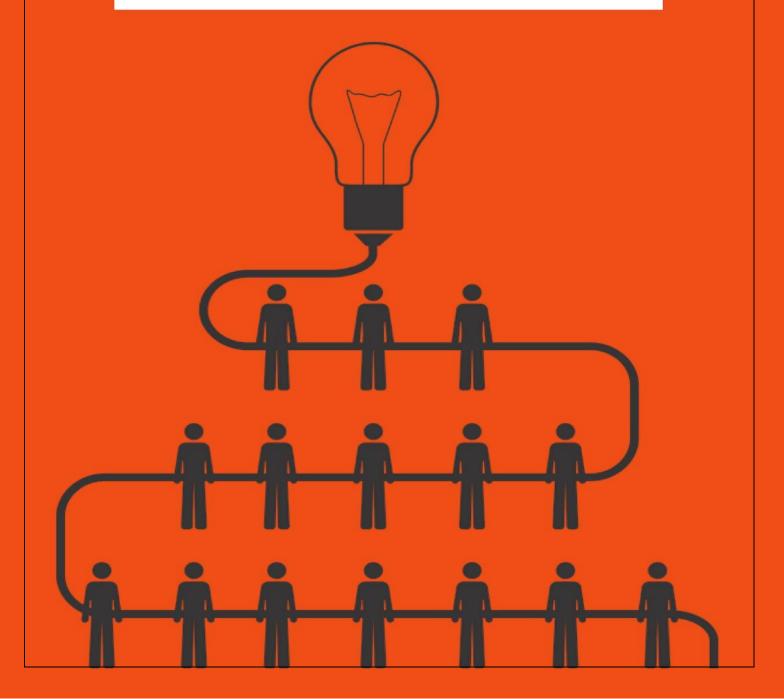
YK GIST

JANUARY 2019

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Preface

This is our 46th edition of Yojana Gist and 37th edition of Kurukshetra Gist, released for the month of January 2019. It is increasingly finding a place in the questions of both UPSC Prelims and Mains and therefore, we've come up with this initiative to equip you with knowledge that'll help you in your preparation for the CSE.

Every issue deals with a single topic comprehensively sharing views from a wide spectrum ranging from academicians to policy makers to scholars. The magazine is essential to build an in-depth understanding of various socio-economic issues.

From the exam point of view, however, not all articles are important. Some go into scholarly depths and others discuss agendas that are not relevant for your preparation. Added to this is the difficulty of going through a large volume of information, facts and analysis to finally extract their essence that may be useful for the exam.

We are not discouraging from reading the magazine itself. So, do not take this as a document which you take read, remember and reproduce in the examination. Its only purpose is to equip you with the right understanding. But, if you do not have enough time to go through the magazines, you can rely on the content provided here for it sums up the most essential points from all the articles.

You need not put hours and hours in reading and making its notes in pages. We believe, a smart study, rather than hard study, can improve your preparation levels.

Think, learn, practice and keep improving! You know that's your success mantra ©

Innovation & India

Let us take a look at India's ranking in the Global Innovation Index. Among around 140 nations, during the past five years, India's ranking has slipped from 66 (2013) to 76 (2014) to 81 (2015) and has now recovered from to 66 (2016 and 60 (2017), and most importantly to 57th in 2018.

No one country has a monopoly on innovation. More than ever before, we have the chance now to retain our home-grown talent and utilize it to develop new industries that will change the world.

Invention or Innovation?

It's important to distinguish between inventions and innovations. Invention is a subset of innovation. The power of innovation lies in new value creation on a commercial scale. When an invention is exploited successfully commercially, it becomes an innovation. Consider the electric bulb, great invention, but producing them in bulk, and serving millions of customers is what made it an innovation. Innovation can be defined as something that adds value to what you are already doing, in a unique, unprecedented way which has the potential to add value to the community/ stakeholders.

India's challenge of not being able to make the journey from mind-to-marketplace can be addressed only by building a powerful national innovation ecosystem. The essential elements of such a national ecosystem should ideally comprise physical, intellectual and cultural constructs.

Beyond research institutions, it should also include idea incubators, accelerators, technology parks, a robust intellectual property rights regime, balanced regulatory systems, strategically designed standards. Furthermore, academics who believe in not just 'publish or perish', but 'patent, publish and prosper' should form a crucial cog in the machine of this ecosystem. Scientists, who have the passion to become 'technopreneurs', potent inventor-investor engagement, 'ad'venture capital, and passionate innovation leaders are as important as a bold and innovative public procurement policy for and of innovation that we alluded to earlier.

"Tomorrow's societies will be knowledge societies. Tomorrow's markets will be knowledge markets. Tomorrow's wars will be fought not by the conventional weapons, guns, missiles and so on, but they will be fought in the knowledge markets with the new thermonuclear weapons called information and knowledge... to meet the twin objective of growth with equity, knowledge cannot be the prerogative of a few; everyone in the society must have access to knowledge and become a knowledge worker..."

-Dr R. A. Mashelkar, Honorary Chairman, Governing Council, Marico Innovation Foundation

Efficiency vs. innovation

A major key to our success has been efficiency—the perfecting and scaling of existing systems. Just look at our dominance in the information technology (IT) services sector, which is now worth more than \$150 billion annually.

But it's not enough to know how to win at today's game, you need to be setting the rules for tomorrows. Call-centre support is being replaced by customer response systems fuelled by artificial intelligence. Progressive IT firms are transitioning from offering just "services" to full-scale "solutions," from social media and analytics to cloud-based support. These depend not merely on efficiency but on embracing the latest technology, from big data and machine learning to robotic processes.

To keep pace, we must be re-inventing, challenging and rethinking the way we do business. That means venturing into unfamiliar territory. Step one for India in seizing the global tech stage is internalizing this elemental spirit of innovation.

Building Knowledge Societies

The possibility of access to 'knowledge for everyone' has vastly improved thanks to rapid advances that India has made in building digital infrastructure, that too in a way that access to information and knowledge is extremely affordable.

Just a year ago, India was ranked 155th among 230 nations with regard to mobile data transmission. But today it has leapfrogged into the number one position leaving USA and China in the second and third position. What is even more important is that internet access has been made more affordable and accessible for a vast majority of the population thus opening up the avenues of access to knowledge to anyone, anytime and anywhere.

Need to move to 'right education' and the 'right way of education'

Right education, because exponential technology is very rapidly increasing information and knowledge and this, in turn, is creating the need for newly educated workforce with different demands on skills and competencies. Right way of education, because the digital disruption is creating new ways of learning!

In this digital age, our education should change from our children using the 'brain as storage' to 'brain as an intelligent processor'. With the internet becoming more and more accepted as an educational tool, classrooms should now able to expand beyond four walls.

With Artificial Intelligence becoming more mainstream in the workforce, the 'human touch' of qualities like emotional intelligence, especially in four domains; self-awareness, social awareness, self-management and relationship management will form the cornerstone of tomorrow's learning societies.

Embracing risk and failure

Failures are an essential ingredient for innovation—just look at the career trajectory of Apple Inc. founder Steve Jobs or even the travails of Tesla Inc. and SpaceX mastermind Elon Musk. So is risk. Creating a corporate culture that embraces both these elements, cultivates resilience, encourages creativity and fosters a growth mindset. And these are precisely the conditions for successful innovation.

In India, we have traditionally been much more risk-averse, and for good reason. With little or no access to private risk capital—until recently—we built our businesses on savings and debt. And historically, there hasn't been a market for unconventional, experimental career roles with no foreseeable return on investment (RoI). We pride ourselves on looking for the safest, most secure options for our hard-won investments, often basing our decisions on the input of family and friends.

Now, that's starting to change. The entrance of venture capital into our markets is allowing us to make bolder decisions aimed at fostering innovation. It's precisely this mindset that will enable us up to capitalize on the opportunities in front of us over the long term. For companies, this act of growing comfortable with risk—and pursuing forward-looking opportunities with potential for enormous payoff, even if they aren't a "sure thing"—is a critical step in the right direction.

A change in thinking

The good news here is that innovation isn't just a buzzword. It's a skill, something that can be taught, nurtured and coached. Research shows that organizations that innovate consistently share three attributes: they have the willingness to innovate, the ability to innovate, and can pull it all together—i.e., they have the leadership to innovate.

Balancing the outcomes of innovation

Just like a coin, even innovation has two sides and it is imperative that the global community works towards innovation-led inclusive and sustainable growth and not innovation-led irreversible destruction. So there must be a **global dialogue and understanding** on the intended and unintended consequences of new technology as also agreed controls from the humanistic angle and welfarist perspective, just as we set up a common global agenda in the Paris agreement on Climate Change. India should lead in such `responsible' innovation.

Why do some nations grow faster than others?

This question has motivated generations of economists.

In 1990, Paul Romer published a paper, 'Endogenous Technological Change', in the Journal of Political Economy that brought ideas as an engine of economic growth. Ideas improve the technology of production. For this research, Romer shared the Nobel Prize for Economics in 2018 with William Nordaus.

There are multiple examples where ideas had propelled economic growth. The idea of economies of scale — mass production and assembly lines — changed manufacturing in the US. Similarly, lean manufacturing methods made Japan, with minimal natural resources, as one of the richest nations. Japan's per capita converged to the US level within three decades after the usage of Just-in-Time in manufacturing.

Deciphering the research of Paul Romer on economics of ideas and its relevance to India

In 'Endogenous Technological Change', Romer characterised ideas as

- Non-rivalrous: Non-rivalrous means that the use of an idea by one will not reduce the value of idea to others. For example, lean manufacturing ideas developed in Japan have been adopted across the globe. An idea has spillover effects on the industry and economy.
- Excludable goods: Excludable means that the owner of an idea can restrict the use of the idea through patents or copyrights. These characteristics of ideas lead to increasing returns to scale and imperfect competition. Excludability incentivises the firms to invest in R&D.

India is expected to grow to be the third largest economy by 2030 only after the US and China. Disruptive technologies and innovative ideas will be the key enablers for this economic growth. The convergence of exponential technologies such as mobile internet, Internet of Things (IoT), data analytics, artificial intelligence (AI), machine learning, robotics, additive manufacturing, advanced materials, renewable energy, energy storage batteries, etc., can create abundance of resources that would fuel the economic growth of India.

Let us look at the three key growth enablers for India: mobility, urbanisation, and agriculture.

Mobility: Moving people and goods around, in an efficient and sustainable manner, is at the heart of any high growth economy. Clean, safe and convenient mobility will be soon within the reach of all Indians. This is enabled by the rapid progress in electric, autonomous and connected vehicles. The adoption of shared vehicle ownership model extends the reach of these technologies even to those at the bottom of the pyramid.

Urbanisation: Large-scale movement of people from rural to urban regions is commonly observed in fast growing economies. Urbanisation leads to the emergence of smart cities that are powered by smart and connected technologies. Energy self-sufficiency of smart cities is enabled by distributed power generation, advances in renewables (especially solar PV), battery energy storage, etc. Digital technologies such as data analytics and IoT are keys to, among others, water resource management and solid waste management for these smart cities.

Agriculture: A growing economy has to feed growing populations and keep its workforce healthy and fit. The shift from improving farm productivity to increasing the farmer's income is a crucial step. The deployment of precision farming, farm automation (including autonomous tractors), smart agricultural implements, etc., will improve the penetration of technology into traditional Indian agriculture.

Disruptive technologies and innovative ideas will be at the heart of the new economic growth model. Growing economies like India can greatly benefit by proactively recognising the disruptive potential of new technologies and by investing in innovative ideas. To achieve this, India needs to provide the **right institutions for innovation and knowledge transfer**. To align the social and private benefit of innovation, collaborative mechanisms for innovation of ideas should be encouraged.

India and 'Innovation Diplomacy

A consistent policy focus on innovation seems to have helped India improve its ranking in the Global Innovation Index, from 81st in 2015 to 57th in 2018. Notably, this strong domestic policy focus is supplemented by the country's ongoing diplomatic efforts in forging strong economic ties with other nations, based on innovation - a strategy known as 'innovation diplomacy'.

India's ongoing efforts in promoting bilateral investment and cooperation in the area of innovation had a strong impact in 2017. The theme of innovation, R&D and start-ups remained an important agenda point in almost all the bilateral visits of Prime Minister Narendra Modi and in other diplomatic engagements. The launch of the India-Israel Industrial R&D and Technological Innovation Fund in August and India's hosting of the Global Entrepreneurship Summit (convened by the US) in November reflected the serious intent of the Indian government with regard to innovation diplomacy.

The India-Israel Industrial R&D and Technological Innovation Fund - the India-Israel Innovation Fund for short - encompasses an annual investment of \$4 million from each country for five years, putting its total value at \$40 million. The launch of the joint fund could potentially emerge as one of the masterstrokes of India's innovation diplomacy. To

reveal its likely implications, it is critical to consider the famous Binational Industrial Research and Development Foundation (BIRD) programme, incorporated jointly by the US and Israel in 1977.

Binational Industrial Research and Development Foundation (BIRD) - Under the ambit of BIRD, funding is provided for the joint development of new products and technologies by Israeli and US companies. The idea was that US companies would benefit from Israel's high-tech talent pool, and Israeli companies from access to America's vast domestic and global market. Since 1977, under the BIRD programme the cumulative sales value of products developed from its projects is estimated to be \$10 billion, demonstrating the tremendous commercial success and sustainability of BIRD over the past five decades. It has also played a very important role in the growth of Israeli companies into global powerhouses - the type of development that Indian SMEs and start-ups are pushing for at the moment. Given the success of BIRD, one can only imagine the immense possibilities and market value that the India-Israel Innovation Fund could generate for both countries.

Global Entrepreneurship Summit - Along similar lines, India's hosting of the **Global Entrepreneurship Summit**, together with Modi and President Donald Trump's increasingly warm relationship, could be seen as a significant signal from the US that it is ready to expand its economic relationship with India in the areas of joint product development and innovation commercialization, like it did with Israel in 1977. The important question is: how should India position itself to reap the benefits of such opportunities, and lead the way towards innovation diplomacy?

Why will the 'Innovation Diplomacy' work?

India is the planet's sixth largest economy. It presents huge market potential for almost every company in the world. The country suffers from a dichotomy: on one side, it has huge unmet needs for affordable healthcare, safe drinking water, agriculture, and pollution and disaster risk reduction; on the other side, it has a growing pool of young technology enthusiasts and innovators. This uncommon phenomenon ideally positions Indian start-ups and companies to collaborate with their global counterparts under the umbrella of bilateral innovation funds, to develop effective technological solutions for addressing social issues, with the potential to scale up for global markets.

Think incremental innovation: Healthcare in India

India's position as far as many health-care metrics is disappointing. By 2020, non-communicable diseases will be the cause of 73% of deaths. With diabetes emerging as the fastest growing disease, India will have 49% of the global burden of diabetes. Not far behind will be cancer as the second most common disease. Evidently, we need more than just policies to counter the disease burden. Although we like to think of innovation as the light bulb moment of massive change, 70% of all innovation is incremental innovation, according to a 2012 study (*Harvard Business Review*).

What is Incremental Innovation?

Incremental innovation is

- The process of expanding therapeutic classes
- Increasing the number of available dosing options
- Discovering new physiological interactions of known medicines
- Improving the secondary properties of existing medicines

This process is often dependent on the experiences of health-care providers and patients' needs. Incremental innovation can include expanding existing therapeutic classes by improving complex molecular structures, reformulating medicines to improve patient administration, or exploring new uses for existing medicines. For example, one way to improve a medicine's therapeutic-efficacy profile is to ensure that patients comply with dosing requirements'. Looking at the disease burden today, India needs to harness it more than ever before.

There are many forces driving the need for innovation. As organisations face unprecedented challenges in improving quality and access, increasing efficiency and lowering costs, incremental innovation has the potential to take lead in transforming health-care dynamics.

Why the emphasis on 'incremental' innovation and not just innovation?

By 2050, the elderly will form 20% of India's population. This means diverse patient profiles, rising health-care costs and a significant number of people needing frequent hospitalisation, regular follow-up and preventive care. Medical sciences have ushered in a new era where technology and research are changing the way patients are treated.

The lack of advancements in medical sciences in India highlights the dire need for incremental innovation. Incremental innovations in the treatment of tuberculosis (TB) are reducing mortality rates. For tangible outcomes, **requisite investment and a policy environment** that makes cutting-edge medicines accessible to Indian patients are a must.

For decades, the policy towards incremental progress in pharmaceutical innovation has remained a bottleneck, affecting India's place among the top global drug innovators. A recent PricewaterhouseCoopers report says, "India invests just 0.9% of its GDP towards overall research and development... The inflow of adequate funds into R&D is currently a critical issue faced by the country. In general, India spends less than other countries in these areas, including pharmaceutical R&D." The report also shows that brought to fore, the Indian biotechnology parks are extremely small when compared to those in leading countries, with limited proximity to centres of excellence.

To achieve the vision of **Ayushman Bharat**, we need more than just tall claims. We need to strengthen our pharmaceutical innovation ecosystem across multiple dimensions. A strong collaboration between the government, academia and the pharmaceutical industry and a policy framework that supports innovation will help India move up the value chain.

While incremental innovation is improving the quality of health care, India is still struggling with the basics — a substandard quality of medicines and policies that deter incremental innovation from reaching Indian shores. Over the years, incremental innovations in branded generics have paved way for the development of treatments for diseases such as malaria and TB. It is these that have helped in reducing health-care costs by improving the quality of drugs, thereby making lives better. Today, India needs an environment conducive for the most advanced drugs to reach patients and this choice should not be restricted by policies in favour of, or against, generics or branded generics. Doctors and patients should be able to make an informed choice.

In India – Ayushmaan Bharat – An attempt to transform India's Healthcare Map:

Innovative and path-breaking scheme in the history of public health in India; it may have a transformative impact if implemented in an effective and coordinated manner.

Aim: To make path-breaking interventions to address health holistically, in primary, secondary and tertiary care systems

Objective: Prevention + Promotion (Health & Wellness)

Full proof mechanism while allowing States to accommodate the existing schemes, keeping the flavour of Digital India intact

Budget States:

- Rs 52,800 crores for the health ministry, up from Rs 47,352 crore during the previous year signifying an increase of **11%** (yet as a percentage of the GDP, it is still among the lowest in the world)
- Increase the levy of health cess from 3 to 4%

Two major initiatives:

Health and Wellness Centre: Foundation of India's health system

- 1.5 lakh centres will provide comprehensive health care, including for noncommunicable diseases and maternal and child health services, provide free essential drugs and diagnostic services
- The budget has allocated Rs.1200 crore for this flagship programme
- Contribution of the private sector through CSR and philanthropic institutions in adopting these centres is also envisaged.

National Health Protection Scheme:

- Will cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries)
- Coverage of up to ₹5 lakh a family a year will be provided for secondary- and tertiarycare hospitalization (50 crore beneficiaries)

Note: Health is a State subject.

Must Read: Link 1 + Link 2

Farming 3.0: Innovative Agriculture

In a country where two-thirds of the population depends on agriculture for their livelihood, the importance of this sector cannot be overemphasised. It accounts for nearly 17 per cent of the country's GDP and feeds 1.3 billion people.

Over the past few decades, agriculture has witnessed different phases of growth. The first phase, which is referred to as Farming 1.0, extended from 1947 to 1966 and was characterised by radical land reforms. The second phase was the Green Revolution which increased farm productivity and rid us of our dependence on foreign food aid. Farming 2.0 was a golden age in India's agriculture.

India's farmlands today are at a critical juncture. Our population continues to grow, placing an ever increasing strain on the sector. The country is also rapidly industrialising and there is massive migration to cities. Agricultural incomes are falling and the sector is in danger of being left behind.

The need has arisen for another revolution: a new phase in Indian agriculture which will be defined by innovation and technology; an age where we will look to balance productivity and economics with social and environmental considerations. This age will usher in an era of unprecedented productivity and prosperity for farmers. This Farming 3.0 age will be all

about disruptive innovations like Smart Farm Machinery, Micro Irrigation, Precision Farming, Digital Platforms and Partnering Stakeholders. Smart Farm Machinery is about producing more with less. Smart machines and technological breakthroughs have the potential to increase output, lower costs and boost farm incomes.

Micro irrigation frees the farmer from vagaries of seasonal monsoon while also conserving the limited water resources. With agriculture consuming about 80 per cent of the total renewable water resources, adoption of micro-irrigation practices will help conserve our precious water reserves and also boost yields and productivity.

Precision farming is an approach to farm management that uses information technology to access real time data about crops, soil, weather etc. to ensure crops and soil receive exactly what they need for optimum health and productivity.

Digital platforms have the potential to put farmers directly in touch with the consumer. Middlemen will be frozen out of the system, and farmers will get fair price for their produce. The government is working with a few States to move APMCs — the Agricultural Produce Market Committees — to the national electronic platform, eNAM, for selling fruits and vegetables. Digitisation of agriculture also has the power to boost productivity by putting farmers in touch with each other and also with agri experts.

Partnering stakeholders is all about collaborating with a wider ecosystem of partners and engaging them in devising solutions to the present and upcoming challenges of agriculture. This involves working with agricultural colleges, research institutions, scientists, commercial investors, grant-making organisations, key influencers, the government and the public at large.

Farming 3.0 is changing the narrative around agriculture from subsistence to sustainability. A strong engagement with farmers, and investments in key technologies like micro-irrigation, crop care, advanced seeds and digital platforms will play an important role in this new revolution. Technology and innovation will lay the foundation for Farming 3.0, and help realise the vision of doubling farmers' income.

In India – Doubling of Farmers' Income

The Government has been reorienting the agriculture sector by focusing on an incomecenteredness, which goes beyond just achieving merely the targeted production.

The income approach focuses on achieving high productivity, reduced cost of cultivation and remunerative price on the produce, with a view to earn higher profits from farming.

- Initiating market reforms through the State Governments by amending the agriculture marketing regime.
- Encouraging contract farming through the State Governments by promulgating of Model Contract Farming Act.

- 22,000 Gramin Haats are to be upgraded to work as centers of aggregation and for direct purchase of agricultural commodities from the farmers.
- Launch of eNAM initiative to provide farmers an electronic online trading platform.
- Implementation of flagship scheme of distribution of Soil Health Cards to farmers so that the use of fertilizers can be optimized. So far more than 15 crore Soil Health Cards have been distributed in two cycles.
- "Per drop more crop" initiative under which drip/sprinkler irrigation is being encouraged for optimal utilization of water
- "Paramparagat Krishi Vikas Yojana (PKVY)" under which organic farming is being promoted. North East is being developed as organic hub.
- A revised farmer friendly "Pradhan Mantri Fasal Bima Yojana (PMFBY)" have been launched. The scheme covers various types of risks from pre-sowing to post harvest and the farmers have to pay very nominal premium.
- Under "Har Medh Par Ped", agro forestry is being promoted for supplementing farm income, increase risk management and climate resilient agriculture as an important component of Integrated Farming Systems
- The Indian Forest Act, 1927 was amended to exclude bamboo from the definition of 'trees'. Henceforth bamboo grown outside forest area will not be regulated under the provisions of felling and transit rules. As a corollary the restructured National Bamboo Mission was launched for development of the value chain of bamboo as a measure to strengthen rural economy by linking the producer (farmer) to markets (industry).
- Launch of PM-Asha scheme which will ensure MSP to farmers for oilseeds, pulses and copra.
- Minimum Support Price (MSP) is notified by the Government for certain crops. Giving a major boost for the farmers income, the Government has approved the increase in the MSPs for all Kharif & Rabi crops for 2018-19 season at a level of at least 150 percent of the cost of production.
- Bee keeping has been promoted under Mission for Integrated Development of Horticulture (MIDH) to increase the productivity of crops through pollination and increase the honey production as an additional source of income of farmers.
- Rashtriya Gokul Mission has been implemented to enhance milk production and productivity of bovines and to make milk production more remunerative to the farmers.
- National Livestock Mission has been implemented to increase productivity and genetic improvement of livestock.
- Foreseeing high potential in fisheries sector, a Blue Revolution with multidimensional activities mainly focusing on fisheries production, both inland and marine is being implemented.
- The National Mission for Sustainable Agriculture (NMSA), on of the eight Missions under the PM's National Action Plan on Climate Change is anchored in the Ministry

of Agriculture and Farmers Welfare. The revised strategy document for 2018-2030 was prepared for enhancing preparedness of the agriculture and allied sector towards the challenges posed by climate change

New initiatives taken for increasing production and productivity of Nutri-Cereals from 2018-19 onwards: —

- Breeder seed production of nutri-cereals
- Creation of seed hubs
- Certified seed production
- Seed mini kits allocation
- Strengthening/creation of Center of Excellence
- Publicity of nutri-cereals

Rashtriya Krishi Vikas Yojna (RKVY) is an important scheme of the Government of India, Ministry of Agriculture and Farmers' Welfare (MoA&FW), aimed at strengthening infrastructure in agriculture and allied areas.

Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)

PM-AASHA will provide MSP assurance to farmers: A reflection of Government's commitment to the "Annadata"

- Giving a major boost to the pro-farmer initiatives of the Government and in keeping with its commitment and dedication for the Annadata, the Union Cabinet has approved a new Umbrella Scheme "Pradhan Mantri Annadata Aay SanraksHan Abhiyan' (PM-AASHA).
- The Scheme is aimed at ensuring remunerative prices to the farmers for their produce as announced in the Union Budget for 2018.

Components of PM-AASHA:

The new Umbrella Scheme includes the mechanism of ensuring remunerative prices to the farmers and is comprised of

- Price Support Scheme (PSS),
- Price Deficiency Payment Scheme (PDPS)
- Pilot of Private Procurement & Stockist Scheme (PPPS).

Innovation: Key to make India manufacturing hub

India is among the world's fastest growing major economies, but exports of value-added products are low. Around 50% of total exports are from commodities and low value addition items, while in the US and China, value-added products contribute to more than 75% of total exports.

Opportunities for innovation in manufacturing

- Innovation in sourcing: New components, new suppliers or an improved deal with the existing suppliers
- Innovation in manufacturing processes: Process innovation that is aimed at garnering competitive advantage through improved quality, reduced costs or reduced time-tomarket.
- Managementinnovation: Innovation in management processes and principles that will eventually change the practice of how and what managers do which will have a longlasting impact
- Innovationthroughtechnology

Why do Indian firms not innovate?

A large proportion of Indian companies just don't have the policy or human resource capabilities to invest in innovation though the country fares favourably in terms of research and development (R&D) spending when compared with its peers.

- **R&D:** There aren't that many of the big and modern firms that are investing a huge amount in R&D and the vast majority of firms in India don't have the capability to do R&D. This just means that firms in India lack the capability to take a careful look at their basic plant layouts can't make long-term plans, don't have an innovation strategy and don't have an HR (human resources) policy to staff their innovation strategy. Also, the focus should be on increasing productivity and not simply focussing on R&D or single-mindedly increasing employment.
- Other issues like adoption of better practices and products, upgrading quality, licensing technology from abroad
- Employment: The goal of public policy can't just be to employ people. You have to have a long-run strategy of employing people in progressively better jobs. That requires raising productivity and that requires an innovation agenda at the level of the nation. However, it certainly is not feasible for a country or a company to do everything by itself. India still stands to gain a lot from borrowing technology from abroad, which then enables it to leapfrog some existing technologies, such as the case with 4G adoption or the implementation of BS-VI fuel norms.

• Identifying an opportunity: Many firms have trouble identifying an opportunity; in the sense that they don't have the managerial capabilities. SMEs (small and medium enterprises) are constantly in a situation where they are putting out fires, they don't have a five-year plan, and they don't have somebody keeping track of what new technology has come out of some place that they could bring to the firm.

Urgent need to develop strategies that foster innovation: Innovations typically involve long gestation periods and investment, thus to ease the process businesses could adopt a three-pronged strategy for innovation: initiatives that would impact the organization in the long term, quick wins and continuous incremental improvements for the existing products. This would broaden the scope and mitigate the risk of putting too many resources into one initiative. An innovate strategy that includes incremental innovations and continuous improvement will help in liberating minds throughout the company. It will also make people more receptive to change; when big breakthroughs happen.



Youth Empowerment Schemes and initiatives in India

Today population of India is more than 130 crore and 62% of it is below the age of 59 years making India the youngest company in the world. The country's economy should be able to handle this increased labour force.

Key highlights:

- **A.** National Manufacturing Policy estimates that MSME sector has the potential to provide employment to 10 crore youth of the country by 2022.
- **B.** According to the National Sample Survey Organisation 2015-16, the MSME sector has created approx. 11.10 crore employment opportunities.
- C. Under Deen Dayal Upadhayay Gram Kaushal Yojana, 5.73 lakh rural youth have been trained from 2014-15 to February 2018.
- D. Under the ongoing Pradhan Matri Yuva Udyamita Vikas Abhiyan (PM-YUVA) of Ministry of Skill Development and Entrepreneurship, 22,308 students have been enrolled.

MIND MAPS

PRELIMS SPECIFIC ALERT - Mind-maps on (Download the Mind Maps from IASbaba Post)

- 1. Schemes & Initiatives
- 2. Demographic Dividend
- 3. Youth & National Security

MUST READ ARTICLES

India will struggle to cash in on its demographics

Skill Development Indicators: Evidence based policy implementation

ESSAY TOPICS

- Youth in India: A confused lot?
- The youth is the hope of India's future

Connect the Dots

- 1. Imparting skills to the burgeoning youth population is imperative to address the jobless growth being witnessed in India. Critically comment. Also discuss the various initiatives that aim at imparting skills to different target groups.
- 2. What in your opinion are the three most important areas that need government intervention to ensure that India's demographic dividend doesn't become a disaster? Substantiate your views.
- 3. India is at the brink of a demographic disaster. Critically comment.
- 4. Low standards in education, lack of requisite skills and unemployment form a vicious cycle which is detrimental to India's demographic dividend. Comment. How can human resource development play a role in addressing this problem? Examine.

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