Volume 1 of Economic Survey (2018-19)

Topics covered:-

1. Private investment as key driver

2. Behavioral economics
   - Its principles
   - Nudging in policy making
   - Global examples
   - Nudging in Indian polices
   - Prospects of Nudging for future policy making

3. Dwarfism in manufacturing sector – its impact and solution

4. Data to be public good

5. Need for Judicial reforms

6. Impact of policy uncertainty on Investment and way forward

7. India’s demographic projections

8. Analysis of Swachh Bharath Mission

9. Energy Scenario – Efficiency, Potential for renewable energy, EVs

10. Use of Technology in welfare schemes – MGNREGA (case study)

11. Minimum wage system in India- status, problems, way forward

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Chapter 1: Shifting gears: Private investment as key driver

India is aspiring to become a USD 5 trillion economy by 2024-25 and USD 10 trillion economy by 2032. Before understanding how to achieve these targets, let’s have a look at macroeconomic variables, which are key parameters to be managed to achieve these targets.

What has been the status of macro-economic stability in last 5 years?

Analyzing the stability with respect to following macro-economic variables:

- **Growth rate** - World output grew at 3.6 per cent in 2014 and again in 2018. India became 6th largest economy by sustaining growth rates higher than China, thereby becoming the fastest growing major economy in the world.
- **Inflation** - Average inflation in these five years was less than half the inflation level of the preceding five year, due to role Monetary Policy Committee (MPC) since 2015.
- **Current account deficit (CAD)** - Though the current account deficit is projected at 2.4 per cent of GDP in 2018-19, up from 1.8 per cent in 2017-18, this is within reasonable levels.
- **Foreign exchange reserves** rose to all-time highs crossing USD400 billion.
- **Fiscal Deficit** – Gross Fiscal Deficit (GFD) to GDP ratio declined from 4.5 per cent in 2013-14 to 3.4 per cent in 2018-19. FRBM Act played key role in reduction.

So, if India aims to grow into a USD 5 trillion economy by 2024-25, which will make India the third-largest economy in the world, it requires real annual growth rate in GDP of 8%, given at 4% inflation. Next question which follows naturally is -

What are the ingredients of a model that can generate such growth?

Such a growth model should be driven by a virtuous cycle of savings, investment and exports, catalysed and supported by a favourable demographic phase.

China has relied primarily on savings and investment. China remains an investment-driven economy even today with its investment and savings rates reaching about 45% of GDP even in 2017. Further research suggests that savings, investment and GDP growth have grown in a virtuous cycle in the high growth economies, be it China or other East Asian economies.

So, for such growth model, we need following:

- **Savings** – In India savings were at peak of 38.3% in 2007-08 before
falling back to 30.5% in 2017-18. Mobilising saving are important but perhaps not as urgent as reviving investment (Economic survey 2017-18).

- **Investment** – was at peak of 35.6% in 2007-08 before falling to 26.4% in 2017-18. Investment, especially private investment, is the “key driver” that drives demand, creates capacity, increases labour productivity, introduces new technology, allows creative destruction, and generates jobs. - that can create a self-sustaining virtuous cycle in India.

- **Job (labour intensive vs capital intensive)**- A general apprehension is that high investment rate will substitute labour. This thinking has led to much debate about labour-intensive versus capital-intensive modes of production. However, the Chinese experience illustrates how a country with the highest investment rates also created the most jobs.

  The misconception arises from a view buried in the silo of a specific activity. When examined in the full value chain, capital investment fosters job creation as capital goods production, research and development, and supply chains also generate jobs. International evidence also suggests that capital and labour are complementary when high investment rate drives growth.

- **Exports** - World trade is currently facing some disruptions, India’s share in global exports is so low that it should focus on market share. Capital investment enhances total factor productivity, which in turn enhances export performance. Therefore, investment becomes crucial to enhancing export performance. The High Level Advisory Group, chaired by Dr Surjit Bhalla, submitted its report in June 2019 on how India can enhance its exports.

- **Favourable Demographic phase** - discussed below.

**What is the role of demographics in the “virtuous cycle”?**

- India will remain in demographic dividend zone for over two decades.
- **Working age** population (20-59 years)- 50.5% in 2011, will increase to about 60% in 2041 of overall population. (Draw graph).
- Changes in growth of labour force, changes in the savings rate, and changes in the investment rate are three plausible mechanisms by which demographics affects the economic growth. This has already seen with respect to China, SE Asian countries.
Decline in the number of children by the working generation promotes saving, as they must rely more on savings for retirement in comparison to previous generations.

Composition effect on Savings: a large portion of saving tends to occur between the ages of 40 to 65 as people start to save for retirement.

Jobs that pay meaningful wages are crucial to increase savings. (in China, Wages affected saving rates)

Thus, ES makes a point, that savings is driven primarily by demographics and income growth.

So, to achieve all these targets and virtuous cycle, survey has suggested new ideas of:-

- Utilising the principles of ‘Behavioural economics’ in Policy making.
- Addressing the issue of Dwarfism in organised manufacturing.
- Making data, a public good.
- Capacity building of Judiciary.
- Arresting policy uncertainty to boost investment.
- Understanding the future population projection and turning it in our favour.
- Enabling inclusive growth through affordable, reliable and sustainable energy.
- Effective use of technology in for welfare schemes.
- Redesigning a minimum wage system in India for inclusive growth.
Chapter 2: Policy for Homo Sapiens, Not Homo Economicus: Leveraging the Behavioural Economics of “Nudge”

Power of the “social norm” have been touted long by behavioural economists as most people want to behave or be seen to behave in congruity with these norms.

Example- People are more likely to stop defecating in the open if their neighbours stop or follow some principle or rule as part of social norm, with some religious or mythological backing.

What are the principles of Behavioural Economics?

Behavioural economics majorly depends upon emphasising the beneficial social norm and understanding their drivers; changing the default option and understanding the inertia of people to change and; repeated reinforcements to sustain changed behaviour.

The above principles are used by behavioural economists to correct the ‘Cognitive biases’, which shapes the decision making at individual and societal level at large. Here, we will talk about five types of cognitive biases:-

1. Anchoring bias
2. Failure bias
3. Sunk cost bias
4. Loss aversion bias  
5. Flawed mental models and confirmation bias  

Next image presents how the above mentioned Behavioural principles, can be used to overcome the Cognitive biases.

**Table 3: Using Behavioural Principles to Overcome Cognitive Biases**

<table>
<thead>
<tr>
<th>Cognitive bias</th>
<th>Behavioural principle</th>
<th>General application across all programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anchoring bias</td>
<td>Principle 1: Leverage default rules</td>
<td>• Choose the right default; default choice should maximise welfare.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Make the default ‘opt-in’ for welfare programs like insurance, retirement savings, organ donation, etc.</td>
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<td></td>
<td></td>
<td>• Make the default ‘opt-out’ for purchasing add-on services, enrolling for a subsidy, etc.</td>
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<td></td>
<td>Principle 2: Make it easy to choose</td>
<td>• Keep options few in number and easy to comprehend.</td>
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<tr>
<td></td>
<td></td>
<td>• Reduce logistical and administrative impediments to choosing.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Offer micro-incentives.</td>
</tr>
<tr>
<td></td>
<td>Principle 3: Emphasize social norm</td>
<td>• Emphasize the number of people who vote, save regularly, file taxes on time, etc. – the enhancers of good behaviour.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Wherever possible, clarify the insignificant role of detractors/ negative influencers to avoid “failure bias”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Focus on influencers that people can relate to, for example those in the same geography or age group.</td>
</tr>
<tr>
<td></td>
<td>Principle 4: Disclose outcomes</td>
<td>• Disclose the realized benefits of good behaviour.</td>
</tr>
<tr>
<td>Sunk cost bias</td>
<td>Principle 5: Reinforce repeatedly</td>
<td>• Remind people of past good behaviour, for example, that they saved regularly for the last three months, to invoke the sunk cost fallacy; people tend to continue their past behaviour, especially when reminded about the same.</td>
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<tr>
<td></td>
<td></td>
<td>• Elicit a pre-commitment for desired behaviour, and if possible, enable immediate action as per the commitment.</td>
</tr>
<tr>
<td>Loss aversion bias</td>
<td>Principle 6: Leverage loss aversion</td>
<td>• Design incentives to reward good behaviour <em>ex ante</em> with threat to revoke reward later if behaviour fails to match expectations.</td>
</tr>
<tr>
<td>Flawed mental models and confirmation bias</td>
<td>Principle 7: Make messages match mental models</td>
<td>• Train people to shift to new rules of thumb, for example, “fluids out – so fluids in” to increase fluid intake during diarrhoea.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Make the rules of thumb catchy, easy to remember and intuitive.</td>
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These principles of behavioural economics are basically tools of nudging, which can be used by policy makers to bring in the desired social change.
Public policy using behavioural economics of “Nudge”

- **Public policy** influences people to act in a socially desirable way, which varies in the **spectrum of actions**.

So in the above spectrum:-

- **Laissez faire**, i.e. doing nothing and leaving individuals/ firms to chart their own course.
- **Mandate** - Public policy – in the form of regulation – mandates people to act in a socially desirable manner.
- **Incentives** – Sandwiched in between, incentivize good behaviour or dis-incentivize bad behaviour.
- **Nudge** - influence the choice architecture of people without affecting their liberty to choose.

**Figure 1: From Minimal Influence to Coercion**

**Figure 2: Policies spanning the influence spectrum in India**

<table>
<thead>
<tr>
<th>Policy</th>
<th>Level of influence</th>
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<tbody>
<tr>
<td>Give It Up</td>
<td>Laissez faire</td>
</tr>
<tr>
<td>Aadhaar</td>
<td>Nudge</td>
</tr>
<tr>
<td>Jan Dhan Yojana</td>
<td>Incentivize</td>
</tr>
<tr>
<td>Beti Bachao, Beti Padhao</td>
<td>Mandate</td>
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<tr>
<td>Swachh Bharat Mission</td>
<td></td>
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<tr>
<td>Taxes on tobacco</td>
<td></td>
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<tr>
<td>Compulsory voting in panchayat elections in some states</td>
<td></td>
</tr>
<tr>
<td>Ban on alcohol in some states</td>
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</table>

**Nudging** is gentle push or touch to something or someone. It proposes positive reinforcement and indirect suggestions as ways to influence the behaviour and decision making of groups or individuals.
What guides the decision making of humans in an economy?

- **Adam Smith** in his book the ‘Theory of Moral Sentiment’ mentions that human choices are driven and limited by our mental resources i.e., cognitive ability, attention and motivation.

- Human psychology studies tell that real people do not always behave like robots, rational and unbiased individuals that form the basis of classical economic theory called “homo economicus”.

- Choice is irrelevant to Homo economicus while real people respond to choice architecture.

- Choice architecture is influenced by cognitive biases. Anchoring bias, a form of cognitive bias viz., once a default option is presented to individuals, they anchor on to it. As individuals suffer from tremendous inertia when they have to make a choice, they tend to stick to the default option.

- For example, studies have shown that enrolment rates in a healthcare or retirement savings plan improve dramatically if the plan is designed as an opt-in by default embedded with the option to opt-out, as opposed to voluntary enrolment by opting in.

These principles of behavioural economics help us to bridge the gap between people’s preferences and the choices and also enable informed policymaking.

Behavioural economics is, however, not a panacea to policymaking; So we need to club all three:-

- Nudge
- Mandate
- Incentive
Global examples of Nudge policies:

1. Pension policy in USA
   - **Problem** = Non enrollment in saving plan was default, so most people don’t enroll even if they want.
   - **Intervention** = Default option was changed to be enrolled, so employees check a box to not enroll.
   - **Observation** = Automatic enrollment increased savings by up to 40 %

2. Agriculture in Africa
   - **Problem** = Inertia makes people procrastinate important time sensitive decisions even when they were aware
   - **Intervention** = Home delivery of fertilizers early in the season was attempted, to tackle farmers procrastination in buying fertilizer (possibly because of hassle of travelling to town)
   - **Observation** = Fertilizer use increased by 70%

Successful application of Behavioural insights in India:

1. Swachh Bharat Mission (SBM) is the first one to emphasize behaviour change as much as, if not more than, construction of toilets. Within five years of the launch of SBM, household access to toilets has increased to nearly 100 per cent in all states.

Use of Behavioural insights in SBM: *case study approach for GS- 4*

- **Date**- SBM was launched on 2nd October, 2014, Gandhiji’s birthday. The day was chosen to leverage the values propagated by him and thereby to create mass movement on the lines of Satyagraha for a cleaner India.
- **Symbol**- Invokes Gandhiji’s ideas.
- **Foot soldiers**- More than 5 lakh Swachhagrahis were recruited on lines with Satyagrahis
- **Local element**- At least one Swachhagrahi per village. Their local ties within their village were used for effective change. They are called ‘local ambassadors of change’ and were found more effective than mass media campaign.
- **Community based approach**- Participatory rural appraisal, where community participates and appraise their community’s open
defecation situation and plan the next course of action.

• **Appealing to People’s emotions** - by attaching a sense of disgust to open defecation.

• **Celebrity Power** - Darwaja Band campaign by Amitabh Bachhan, Vidya Balan, Akshya kumar’s Toilet movie, etc.

2. **Beti Bachao, Beti Padhao (BBBP)** - The campaign was flagged from Panipat, Haryana, which had the worst child sex ratio at 834 among Indian states as compared with the national average of 919 (as per Census, 2011).

**Use of Behavioral insights in BBBP:-**

• **Place** - choice of Panipat in the battle against the socially ingrained bias against the girl child was also symbolic through the association with the famous battles fought at Panipat in 1526, 1556 and 1761.

• **Date and place** - initially it was launched in 100 districts in 2014-15, later it was extended to all districts of India on March 8, 2018 from Jhunjhunu, Rajasthan. The date and location was again selected carefully to ensure that the symbolism behind the message matched the relevant mental model. Rajasthan was chosen as the State improved by 34 points from 888 girls per 1000 boys in 2011 to 922 per 1000 boys in 2017-18 to indicate that good performance receives a reward. Also, International Women’s Day was to launch to reinforce the stress on gender empowerment and establish the social norm of ‘girls are valuable’.

• **Selfie with daughter initiative** - showcased the examples of parents around the country who don’t view girls as burden and they celebrate them instead. The celebration of girl child quickly became the norm. Most people wanted to conform and more parents posted selfies with their girls. So, started by a proud father in a village of Haryana, went viral and became worldwide hit.

So, the strategy addresses the ‘cognitive bias’ called failure bias. Therefore in context of BBBP, focus must be on the people who treat their girls fairly; this corrects the failure bias and makes the social norm of fair treatment of girls unequivocally clear.

**Other than above methods messaging is also important**

**The Power of Clear Messaging**

• Use of socially and culturally identifiable names.

• One of the principles of behavioural economics is that the messaging needs to be **clear and simple** and aligned to a mental model.
This is evident from the names used for various recent schemes, some of which are:-

1. **Namami Gange** –
   - **Literal meaning** = Namami Gange means ‘I pray to Ganga’ as the river Ganga is revered in our culture.
   - **Objective** = To arrest the pollution of Ganga River and revive the river.

2. **Ayushman Bharat** –
   - **Literal meaning** = Ayushman means “Being Blessed with long life”
   - **Objective** = Universal and affordable access to good quality health care services.

**How a path breaking change can be achieved?**

India @75 is envisaged as a ‘New India’ where every individual realizes his or her full potential and looks for opportunities to contribute rather than claim entitlements.

Mahatma Gandhi’s Seven Social Sins published in Young India on October 22, 1925, provide deep insights into the role of social and political conditions shaping human behaviour. Each of these is a statement of principle that can be interpreted and utilized for nudging people towards desirable behaviour.
Application of seven sins:-

1. **Politics without principles** - Growing criminalisation of politics, misuse of public office and lack of effective governance are causing apathy towards participation in political processes. Policy makers and legislatures exhibit loss-aversion in decision making. Behavioural insights to address loss aversion can uphold the Politics with principle. This would enhance political participation and contribute to make democracy vibrant.

2. **Wealth without work** - Indian ethos of “work is worship”, which leads to dignity and self-reliance. But the perception of getting things for free as an entitlement has to be reoriented towards discharging our obligations towards society by rendering productive work and contributing towards national growth. Behavioural insights of disclose the realised benefits of good behaviour and adverse impact of bad behaviour on one hand and emphasizing social norm on the other hand offer insights towards enhancing the productivity and tax compliance.

3. **Pleasure without conscience** - When less deserving people claim benefits of a developmental program, it is an act of pleasure without conscience. Such claims neglect the welfare concerns of their relatively unfortunate fellow counterparts. By using default ‘opt-out’ for availing subsidy, the issue of less deserving people claiming benefits of a development program can be addressed.

4. **Knowledge without character** - Soft skills (emotional intelligence, empathy, self-control) along with thinking and reasoning can be used to nudge people to build a character.

5. **Commerce without mortality** - Acknowledging the ethical behaviour of companies can be highlighted by awarding them, recognising work done by them under CSR. The National corporate Social responsibility awards by Ministry of Corporate Affairs are an initiative in this direction.

6. **Science without humanity** - Science and technology should play role in ‘Making it easy to choose’ for humanity. It can make things simple to understand and should target the actual beneficiary.

7. **Worship without sacrifice** - Practising religion without developing an embedded sense of sacrifice, respect, tolerance towards differences, empathy and humility to serve the needs of other people is self-
defeating. **Example- MARD** (Men against Rape and Discrimination) campaign underlines the sacrifice of the male ego in a patriarchal society for the larger good of gender equality.

**An Aspirational agenda for Path breaking change:**

1. **Transforming gender Equations**- BBBP campaign should be labelled as BADLAV ((Beti Aapki Dhan Lakshmi Aur Vijay Lakshmi) to represent the 'change' towards gender equality). By drawing on the imagery of the forms of Goddess Lakshmi that symbolises wealth (Dhan Lakshmi) and victory (Vijay Lakshmi), the message of treating women as the forms of Lakshmi needs to be emphasized.

Ideas for utilising the power of role models from Indian mythology to create the social norm that “women are equal to men.”

- **Ardhanareshwar**- half male and female representation of Lord Shiva captures the equality between men and women.
- **Maitri**, Rigvedic woman sage, rejected half of her husband’s wealth in favour of spiritual knowledge.
- **Men in Ancient India were associated with their mother as well as their wives/consorts**- Yashoda- Nandan, Gandhair- Putra, Radha-Krishna.

These mythological examples can be used to usher the new norm of gender equality, to focus attention on those who adopt new norms and to continuously reinforce the norm over time until it becomes entrenched in the society.

2. **From Swachh and Ayushman Bharat to Sundar Bharath**

- **Getting people to pre-commit to a certain course of action**- Studies find that if people pre-commit to doing something, they are much more likely to do it. For instance, a simple act of asking people if they will vote, enrol in a smoking cessation programme or save money, increases the likelihood that people will act in accordance with their goals.

- **An assisted reflection session in the community or on a one-on-one basis** with the local swachhagrahi can prompt people to think about whether they acted as planned and how many times they detracted. These reflection sessions should culminate in a commitment about how people plan to act in the near-term future – whether they will refrain from open defecation next month or not.

- **Disclosure of outcomes** in terms of tangible benefits and not in terms of statistics affects people more

3. **“Give It Up” Campaign**- also relies on a change in behaviour. From “Give It
Up” for the LPG subsidy to “Think about the Subsidy”;

4. Checking tax evasion, wilful default – Every religious scripture asks to pay for debts. In Hinduism, concept of Rina is there, rebirth and rina are linked. In Islam also, a person cannot enter Paradise until his debts were paid off. Given the importance of religion in Indian culture, the Principles of behavioural economics need to be combine with this “spiritual/religious norm” to reduce tax evasion and wilful default in the country.

What can be done to implement the agenda of Behavioural change?

- Behavioural economics unit in the Niti Aayog along with the appointment of experts of the field.
- Behavioural economics audit of every program before its implementation must be done which should conform to the principles of Behavioural economics.
- Behavioural economics team can work with various state governments not only to inform them about the potential benefits but also help them to improve the efficacy of the programs.
Chapter 3 :- Nourishing Dwarfs to become Giants: Reorienting policies for MSME Growth

<table>
<thead>
<tr>
<th>Share in</th>
<th>Large old firms (&gt; 10 years + &gt; 100 emp)</th>
<th>Dwarf firms</th>
<th>Young Large firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>10.2 % of organised manufacturing</td>
<td>50 % of organised manufacturing</td>
<td>5.5 %</td>
</tr>
<tr>
<td>Employment</td>
<td>50 %</td>
<td>14 %</td>
<td>21.2 %</td>
</tr>
<tr>
<td>NVA</td>
<td>50 %</td>
<td>7.6 %</td>
<td>37.2 %</td>
</tr>
</tbody>
</table>

Small vs Large from Organised manufacturing: - (values not change much since 2010 to 2016)
- **Number** = 85 % vs 15 %
- **Employment** = 23 % vs 77 %
- **NVA** = 11.5 % vs 88.5 %

Survey Observes:
- Findings dispel the common notion that small firms generate the most employment.
- Small firms may generate a higher number of new jobs. However, they destroy as many jobs as well, thereby leading to lower levels of net job creation.
- And within the small firms also, it is the Young firms who create new jobs. Thus age effect is playing role in Indian context.

Cross-country comparison of job creation:-
- An average firm in the **U.S.** employs more than **seven times** as many workers when it is 40 years of age when compared to the average workers it employed when it was less than five years of age.
- An average firm in **Mexico** doubles its employment when it is 40 years of age when compared to the workers it employed when it was less than five years of age.
- In contrast, an average firm in **India** only employs 40% more workers when it has been in operation for 40 years, compared to the average employees it employed when it was less than five years of age.
workers when it is 40 years of age when compared to the workers it employed when it was less than five years of age. Thus, firms in India do not grow enough to create the necessary jobs and productivity in the economy.

Figure 21: Growth of jobs and productivity with age for firms in India, Mexico and U.S.

Thus, once they survive for forty years, the average 40-year old firm in the

- **Jobs** - U.S. generates five times ($=7/1.4$) as much more employment than the average 40-year old Indian firm. Even Mexico does far better on this dimension than India i.e 2 times
- **Productivity** = U.S. is 2.5 times ($=4/1.6$) more productive than the average 40-year old Indian firm. Mexico does far better than India on this dimension as well. The average productivity level for 40-year old firms in Mexico is 1.7 times that of the productivity of an enterprise that is newly set up.

**Status of Indian Policies in Dwarfism**

They protect and foster dwarfs rather than infants. The firms avoid growing to enjoy the benefits awarded, when they remain below the threshold limit. Thus rather than growing, the entrepreneur find it optimal to start one new firm to continue availing these benefits. And since their economy of scale does not increase, therefore, they remain unproductive. The lack of productivity and growth inhibits the ability of the dwarfs to create jobs.

Policies which are helping Dwarfism:

**Impact of Labour Regulation** - Most of the State and Centre laws exempt the smaller firms.

**Examples:**

1. **Industrial Disputes Act, 1947** - Chapter V relating to strikes, lockouts, retrenchment, layoff.

   **Applicability** - applicable only to firms with more than 100 employees.-- are exempt from the need to get permission from the
Government before retrenching their employees. Given the transaction costs inherent in complying with such regulations, naturally a large majority of firms would prefer to be below the threshold of 100 employees.

2. Trade Union Act, 2001-Registration of trade unions.

**Applicability** - Membership of 10 per cent or 100 workmen whichever is less.

**Impact** - Survey using OECD data categorised states, on the basis of rigidity of labour laws, into Flexible ((UP, TL, Gujarat, Haryana, and Punjab) and inflexible (WB, Chhattisgarh, Bihar, Goa, Jharkhand, Kerala). It shows, the inflexible states are unable to create enough employment, Unable to attract adequate capital into their states and their wages are lower as their productivity is lower.

**Case study** - of Rajasthan is examined, which implemented labour reforms in 2014-15.

- **Industrial Disputes Act, 1947 was amended** - No government nod required for companies employing up to 300 workers for retrenching, laying off or shutting down units. Earlier limit was 100 workers + A worker should raise an objection within three years. There was no timeline set in the earlier version with regard to discharge or termination.

- **Apprentices Act, 1961 was amended** - Fix the number of apprentice-training related seats in industry and establishments + The stipend for apprentices will be no less than the minimum wage + To encourage skilling, government to bear part of costs of apprentice training.

- **The Contract Labour (Regulation and Abolition) Act, 1970 was amended** - Applicable to establishments that employ 50 or more workers on contract against the earlier 20 or more workers.

**Outcome of Rajasthan Reforms** - However, following the law change, the number of firms with 100 employees or more has increased at a significantly higher rate in Rajasthan than in the Rest of India.
Impact of Small Scale Reservation

Other Incentives available to Small firms:-

1. **Priority Sector Lending** - Direct and indirect finance at subsidized interest rates shall include all loans given to micro and small enterprises, irrespective of their age.

2. **Credit Guarantee Fund Scheme** - This scheme makes available collateral-free credit to the micro and small enterprises, irrespective of their age.

3. **Purchase Preference Policy** - A group of items (Group IV) are reserved for exclusive purchase from small scale units, irrespective of their age. Group V items are to be purchased from MSMEs, irrespective of their age, up to 75 per cent of the requirement.

4. **GST Composition scheme** - Scheme allows MSME firms, irrespective of their age, to pay GST at a flat rate. The turnover limit for businesses availing of the GST composition scheme is set at Rs 1.5 crore.

**Case study** - Small Scale Industries (SSI) reservation policy was introduced in 1967 to promote employment growth and income distribution. From 1997 to 2007, several product categories reserved for small-scale firms were eliminated in a phased manner.

**Key takeaways of this de-reservation** - Large firms, be it new entrants or incumbents – have created more employment than small firms. Across both new entrants and incumbents, the small firms destroyed jobs (as they could not grow without the incentives) while the large firms created jobs. Job destruction was more in incumbent smallest firm (1 to 4), while job creation was maximum in largest firms (500 +)

**Way forward:**

- **Incentivizing ‘infant’ firms rather than ‘small’ firms:** age based criteria should be used for existing incentives with proper grandfathering. Once small firms know that they would receive no benefit from continuing to remain small despite aging, their natural incentives to grow would get activated.

- **Re-orienting Priority Sector Lending (PSL):** As per PSL guidelines, 7.5 per cent of Adjusted Net Bank Credit (ANBC) or Credit Equivalent Amount of Off-Balance Sheet Exposure, whichever is higher is
applicable to Micro enterprises.

Under MSME’s PSL targets, it is necessary to prioritize ‘start ups’ and ‘infants’ in high employment elastic sectors. This would enhance direct credit flow to sectors that can create the most jobs in the economy.

- **Sunset Clause for Incentives:** Every incentive for fostering growth should have a ‘sunset’ clause with necessary grand-fathering, say, for a period of five to seven years after which the firm should be able to sustain itself.

- **Focus on High Employment Elastic Sectors:** Like – Rubber and Plastic products, Electrical and optical Equipment.

- **Focus on Service Sectors with high Spill over Effects such as Tourism:** Developing key tourist centres will have ripple effects on job creation.

  Spill over = in areas such as tour and safari guides, hotels, catering and housekeeping staff, shops at tourist spots. Build roads and air connectivity to such spots- will boost economic activity along the route + will reduce migration or rural labour force, who form major proportion of the total labour force.

**Conclusion** - Overall, Survey mentions that infants, not dwarfs, contribute significantly to job creation and productivity in the economy. As young firms are usually small though all small firms are not young, there is a strong correlation between firm size and firm age. The evidence for both U.S. and India clearly shows that young firms, not smaller firms, produce more jobs.
Chapter 4 - Data “Of the People, By the People, For the People”

In the spirit of the Constitution of India, data should be “of the people, by the people, for the people”. So, survey is presenting an idea to promote data as public good. For which we need to understand the status of data.

Status:-

1. Marginal cost declining

- Information explosion- exponential increases in the amount of published data due to increasing Digital footprint—call data, internet, government services, filing tax, etc.
- Gathering- efficiency has increased with help of digital surveys, questionnaire, more organised nature and large scale of information gathering.
- Storing- Storage costs have decreased drastically. The cost per gigabyte of storage has fallen from Rs. 61,050 in 1981 to less than Rs. 3.48 today.
- Processing- There have been exponential growth of human and technical capital to process these data. Data Science as a field has evolved along with data inundation. Courses in analytics have become ubiquitous. Data is still relatively expensive to process because it tends to be noisy, heterogeneous and inconsistent across sources.
- Dissemination of Processed data is cheap- it is nearly costless to transfer information through the internet. However, dissemination of data entails another cost – that of ensuring data privacy and security.
While this is a direct cost, an indirect cost also exists – the cost of misuse of data.

2. Marginal benefits increasing.

Intended and potential benefits of data are increasing. **For Example** – Data on attendance rates of students and teachers, school toilets, average test scores, etc- can help District education officer to take better decision. Also, parents can take decisions for admission of their ward in schools based on comparative analysis of teachers absenteeism in schools.

![Figure 2: Increasing Marginal Benefits and Decreasing Marginal Cost of Data](image)

Why Data must be treated as Public good?

- **Private sector is harnessing properly** = Private sector investment in data related endeavours is higher than ever before. A 2017 Forbes survey found **that 53 per cent of companies actively use big data to make decisions. Such usage is across industries – health care, financial services, etc.** In fact, in the last two decades, the world has witnessed the emergence of companies, such as Facebook, Amazon, Instagram, etc., who earn revenue exclusively from people’s data.

- **Potential to use** = several areas have not harnessed data efficiently – like Agriculture. Here, Private players can provide the necessary data, but for that we need nationally integrated agriculture market.

- **Economics of Data varies** = private firm’s marginal benefit is not as...
high as society’s marginal benefit. Because the firm does not internalize the benefit of social welfare. Government intervention is required in other areas where private investment in data remains inadequate. The social sectors of the economy, such as education and healthcare, have lagged the commercial sectors in exploiting data.

Data used by government:-

- **Administrative Data** = non statistical purpose, gather to evaluate welfare schemes.
- **Survey Data** = for statistical purposes through systematic, periodic surveys.
- **Institutional Data** = held by public institutions about people. Can be digitised to enable aggregation at regional or national level.
- **Transactional data** = nascent category of data but is likely to grow as more people to the transaction.

What should be done?

Government-driven data revolution is motivated by 3 key characteristics that data must possess for the desired benefits:- marries disparate datasets, covers a critical mass of individuals/ firms, and spans a large time-series.

1. **Merging disparate datasets maintained by different ministries. For example** – transaction data extracted from Jan dhan account married to demand for MGNREGA work. As, MGNREGA can be real time indicator of rural distress, the credit scoring of done using the transactions data of Jan Dhan accounts can be used to provide credit in districts/Panchayats that are experiencing distress.

2. **Data needs to cover a critical mass of individuals/firms** so that comparisons and correlations can be assessed among individuals/firms to generate useful policy insights. This needs to gather price data of various products across country and from very large number of producers and buyers, which needs significant initial investment, which may prove prohibitive for private sector.

3. **Data must have a long time-series** so that dynamic effects can be studied and employed for policymaking. For instance, to undertake before-after evaluations to assess the effectiveness of policies, data that spans a long-enough time series is critical.

**Conclusion** - data carries some of the characteristics of public goods. It is non-rivalries, i.e., consumption by one individual does not reduce the quantum available for others. There are some kinds of data – particularly data gathered by governments on issues of social interest – that should be democratised in the interest of social welfare. Such data should be made
Learning from examples - Data gathering in India is highly decentralised – various ministries/Departments. We can learn from:

1. **Samagra Vedika Initiative** = *Survey is calling it ‘Federalism in learning among governments.’* This initiative links 25 existing government datasets using common identifier – the name and address of an individual.

    7 categories of information were linked – crimes, assets, utilities, subsidies, education, taxes and identity information.

    Each individual was further linked to relatives - spouses, siblings, parents and any other known associate.

    Care taken = Safeguard against tampering & violation of privacy + a given department can write data for select fields. So, data is visible to all, but no unauthorised manipulation is possible.

2. **Transport for London (TfL) data**, about timetables, service status, disruption information, etc. TfL releases these data in open format for anyone to use, free of cost. Such data is being used by more than 600 apps, which are used by 42% of Londoners. TfL has demonstrated that releasing data to public can save users time to economic value of between 15 m to 58 m pound per year.

Transforming India’s Data infrastructure: Harnessing data consists of four steps – gathering, storing, processing and disseminating data, each of which offers room for improvement in India.
Steps taken for making Data a Public good:

- **Open Government Data platform** = by Union Government, allows citizen to access a range of data in machine readable form at one place. It allows ministries, departments to publish datasets, documents, service, tools and application collected by them for Public use – excluding the confidential data. Benefits government for decision making + people’s participation is also being encourage through their analysis and insights derived from data.

- **Smart India Hackathon** – open innovation model to discover new and disruptive technologies to solve India’s most pressing problems. Participant get a problem statement and relevant data.

- **Digitize India Platform**
- **Digi locker**
- **National Scholarship portal**
- **Non-Banking Financial Company-Account Aggregator (NBFC-AA).**
- **Idea of National health register**

**Way forward** - Privacy implications and inherent fairness of data should be taken care. Survey assumes that the processing of data will be in compliance with accepted privacy norms and the upcoming privacy law, currently tabled in Parliament.
Chapter 5-Ending Matsyanyaya: How To Ramp Up Capacity In The Lower Judiciary

Preamble to the Constitution of India defines that the first role of the State is ‘to secure for all its citizens: Justice, social, economic, and political’.

What are the Issues:-

- **Pending cases**- Approximately 3.5 crore cases are pending in the judicial system, out of which 87.54 % of the cases are pending in District and Subordinate courts (D&S courts).
- **Regional divide in Pendency of cases**- Analysis of pendency of cases state wise reveals that Odisha, Bihar, West Bengal, Uttar Pradesh and Gujarat have higher average pendency for both civil and criminal cases as compared to the national averages whereas Punjab and Delhi have the least average pendency of cases. It may not be a coincidence that the worst performing states are usually (albeit not always) also the poorest.
- **Poor performance in contract enforcement**- EODB is improving (100 to 77 in 2019), but India continues to lag on the indicator for enforcing contracts, climbing only one rank from 164 to 163 in the latest report of EODB, 2018.

Why Legal reforms are important?

- **To drive economic growth** through high investment rates in an unpredictable world. Last year’s Economic Survey (2017-18) presented evidence of the backlog of cases that weighs down the Indian judiciary, economic tribunals and the tax department, thereby constraining economic growth.
- **To maintain ‘Rule of Law’**, which is key to avert Matsya-nyaya or Law of the Fish (i.e., law of the jungle), which has been repeatedly emphasized by ancient Indian economic thinkers such as Kautilya.
- **To improve rankings on Contract enforcement**- Due to 3.5 crore pending cases in Indian legal system, doing business in India and investment growth is being hampered. The World Bank’s latest Ease of Doing Business Report ranked India at 163 for contract enforcement.
- **To make other reforms relevant**- Experience shows that every other field of economic reform, be it property rights, taxes and insolvency, eventually flounders because it gets entangled in the legal system.

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Quotations

- “The Rule of Law (Dandniti) and maintenance of order is the science of governance” - Kautilya’s Arthashastra, 4th century B.C.
- “No branch of knowledge and policy is of any avail if the Rule of Law is neglected” - Kamandak’s Nitisara, 4th century A.D.
Can the legal Logjam be cleared? Yes, analysis of Data shows it can be cleared.

1. **At District & Subordinate level**

   ![Court characteristics (Dec’18)](image)

   **Judge Strength:**
   - Sanctioned: 22,750
   - Working: 17,891 (79%)

   **Annual Disposal Rate (per judge): 746**  
   **Clearance Rate: 89%**

   In order to reach **100 per cent CCR in 2018**, the D&S courts needed **2,279 additional judges**. This is within the sanctioned strength! However, in order to clear all the backlog in the next five years, further 8,152 judges are needed.

2. **At High court level** = As of June 2017, High Court judges were working at 62 per cent of their sanctioned strength. With a case clearance rate of 88 per cent, each judge achieved an average disposal rate of 2,348 cases per year. In order to reach 100 per cent CCR, they needed just 93 additional judges. This is already within the present sanctioned strength for High Courts. To clear all backlogs in the next five years, the High Courts need a further 361 additional judges.

   ![Court characteristics (June’18)](image)

   **Judge Strength:**
   - Sanctioned: 1,079
   - Working: 671 (62%)

   **Annual Disposal Rate (per judge): 2,348**  
   **Clearance Rate: 88%**

3. **At Supreme court level** = As of October 2018, Supreme Court judges were working at 90 per cent of their sanctioned strength. With a high case clearance rate of 98 per cent, each judge disposes 1,415 cases per year on average. The backlog of cases as on October 2018 was 56,320. In order to
reach 100 per cent CCR, the Supreme Court would have needed only one extra judge in 2018. To clear all backlog in the next five years, an additional eight judges are required. Thus strength of Supreme court should be increased from 31 to 36.

**What reforms are needed?**

- **Additional judges to be allocated on criminal cases** - Survey’s analysis says that, not only the backlog of criminal cases is about 2.5 fold higher than civil cases, criminal case type also has lower CCR.
- **Improving the procedural efficiency for cases at various stages of their life cycle** – The life cycle analysis of cases can be used to identify the causes of delay, which might be due to procedural inefficiency, shortage of human capital, etc. For example - Civil cases spend an average of 369 days in the ‘Hearing’ stage. This inefficiency consumes a significant proportion of a case’s life, and is a major factor contributing to delays and backlog.
- **Priority in the appointment of additional judges** - Should be given to states with poor CCR. Gujarat and Chhattisgarh have clearance rates of above 100 per cent in 2018 while Bihar, Odisha, and West Bengal have low clearance rates of 55.58 per cent, 62.18 per cent, and 78.63 per cent respectively.

**How to make Indian courts more productive?**

1. **Increasing number of working days:** The length of vacations in courts varies from court to court. For instance, the Supreme Court’s official calendar for 2019 suggests that it would close for 49 days for summer vacations, 14 days for winter break, and a further 18 days for Holi, Diwali and Dussehra. After accounting for weekends and public holidays, it leaves 190 working days for the Supreme Court. In contrast, the average is 232 working days for High Courts and 244 days for Subordinate courts.
2. **Establishment of Indian Courts and Tribunal Services (ICTS):** Most judicial reforms focus on quality and quantity of judges, but a major problem lies with the quality of the administration of the courts system, particularly backend functions and processes.

The major roles to be played by ICTS would be

(i) Provide administrative support functions needed by the judiciary.

(ii) Identify process inefficiencies and advise the judiciary on legal reforms.

(iii) Implement the process re-engineering.

Similar, court management services exist in other countries: Her Majesty’s Court and Tribunals Services (UK), Administrative Office of US Courts (US), Court Administration Service (Canada).

*Was also pitched the former CJI – Deepak Mishra*

3. **Deployment of Technology:** eCourts Mission Mode Project that is being rolled out in phases by the Ministry of Law and Justice–creation of the National Judicial Data Grid (NJDG) - including likely future applications of Artificial Intelligence

**Conclusion:** Given the social and economic importance of this issue, it should be given top priority by policy-makers.
Chapter 6: How does Policy Uncertainty affect Investment?

Consider, for instance, a poorly drafted law that is riddled with ambiguities, amendments, clarifications and exemptions that inevitably lead to conflicting interpretations and spawn endless litigation. Such uncertainty can frighten investors and spoil the investment climate in the economy.

Status:

- **Economic Policy Uncertainty** when measured using Economic Policy Uncertainty (EPU) index was the highest in 2011-12 coinciding with the years of policy paralysis - reflecting the policy paralysis during that period, which witnessed the problems of the high twin deficits and high inflation, thereby exacerbating macroeconomic vulnerability. Scams – coal, commonwealth, 2G etc.
- **Decoupling of economic uncertainty** - Economic policy uncertainty in India moved closely in tandem with global uncertainty until 2014. However, it started diverging since early 2015 and seems to have completely decoupled in 2018.
- In recent times, while the economic policy uncertainty has been increasing across the world, including US, UK and China - trade war, BREXIT, slower world growth; India’s economic policy uncertainty has been falling – EPU index of India and US shows - policy uncertainty in India has consistently been lower than that of US since 2015.

What helped in reduction of policy uncertainty?

**Context** - In fact, gross fixed capital formation as a proportion of GDP, commonly referred to as the fixed investment rate, fell from 37 per cent in 2007-08 to 27 per cent in the following ten years, but now recovering to approximately 28 per cent recently.

- Continued resolution of the twin balance sheet problem (Eco survey 2016-17).
- Implementation of Insolvency and Bankruptcy Code 2016
- Recapitalization of banks helped to promote investment.
- Focus on improvement in the business climate via measures to improve ease of doing business.
- Clarity in the policy for FDI liberalization may have also helped.

What affects investment?

- **Borrowing cost** = repo rate = negatively correlated with Investment growth.
- **Inflation** = investment growth is positively correlated to wholesale
price inflation, but negatively to consumer price inflation.

- **Capacity utilization** = utilization of capacity in any quarter is expected to have a positive relationship with investment growth in the following quarter.

- **Volatility of exchange rate** = foreign component of fixed investment, FDI and FII flows are expected to be negatively related. This is because the returns that the foreign investors actually realize are in foreign currency terms, which depend on the exchange rate. If the volatility of the exchange rate is higher, it may decrease the growth of foreign inflows. FII are more affected than FDI, as they for short term.

**Suggestions by Survey to reduce economic policy uncertainty**:-

1. **Making policy actions predictable** = can be done by voluntary tying of policymakers hand as done in case of FRBM, MPC, etc. The Government could also use labels such as “Standstill” versus “Ratchet up” to categorize various categories of policies according to the level of commitment about future certainty that it can provide.

2. **Economic policy uncertainty must be measured** = Along with EPU Index government must encourage construction of economic policy uncertainty sub-indices to capture economic policy uncertainty stemming from fiscal policy, tax policy, monetary policy, trade policy, and banking policy.

3. **Quality assurance certification of processes in Government departments** – The actual implementation of policy occurs at the lower levels, where ambiguity gets created and exacerbates economic policy uncertainty. As organizations in the private sector compete and seek the highest level of quality certifications, Government departments must be mandated to similarly seek quality certifications. This process of certification will require training of personnel in following quality assurance processes and will significantly reduce economic policy uncertainty.
Chapter 7: India’s Demography at 2040: Planning Public Good Provision for the 21st Century.

Recent trends:-

1. **Slowing population growth** in recent decades from an annual growth rate of 2.5 per cent during 1971-81 to an estimated 1.3 per cent as of 2011-16.

2. **Slowdown in states with historically high population growth** such as Bihar, Uttar Pradesh, Rajasthan and Haryana is particularly noteworthy.

3. **Population growth**- Population is now growing below 1 per cent in the southern states as well as West Bengal, Punjab, Maharashtra, Odisha, Assam and Himachal Pradesh.

4. **Steady decline in India’s total fertility rate** (TFR) since the mid-1980s.It has halved from 4.5 in 1984 to 2.3 as of 2016. Note that there is a wide variation in the experience of different Indian states. TFR is now below replacement level fertility in 13 out of the 22 major states. Interestingly, the current TFR in 14 out of the 22 major states is already below the effective replacement level fertility.

**Demographic transition across states:-**

The southern states, Himachal Pradesh, Punjab, West Bengal and Maharashtra are already quite **advanced in the demographic transition**, with

(i) TFR already well below replacement level fertility;

(ii) Population growth mainly due to momentum;

(iii) More than 10 per cent of the population over the age of 59;

(iv) At most one-third of the population below the age of 20.

Uttar Pradesh, Jharkhand, Chhattisgarh, Rajasthan and Madhya Pradesh are still in the **early stages of demographic transition**.

**What are the future demographic projections?**

1. **Declining Fertility Rates** = TFR at the national level will continue to decline rapidly and will lie below replacement level fertility at **1.8 as early as 2021**. TFR is expected to stabilize thereafter for some time around 1.7.

This is in line with expectations of further decline in fertility for females in the 20-30 age-group, driven by rising female education, postponement of marriage, access to family planning methods, and continued decline in infant mortality.

2. **Population Growth Trajectory** = Demographic projections show that
India’s population growth will continue to slow rapidly over the next two decades, growing less than 1 percent during 2021-31 and under 0.5 percent during 2031-41.

| Table 2: Annual Population Growth Rate (in per cent) for India and Major States |
|---------------------------------|-----|-----|-----|-----|-----|
| States                         | 2001-11 | 2011-21 | 2021-31 | 2031-41 |
| INDIA                          | 1.77    | 1.12    | 0.72     | 0.46    |

| Table 3: Population (in millions) for India and Major States, 2011-2041 |
|---------------------------------|-----|-----|-----|-----|-----|
| States                         | 2011 | 2016 | 2021 | 2031 | 2041 |
| INDIA                          | 1210.6 | 1286.1 | 1346.9 | 1443.2 | 1519.2 |

3. **Changing Age Composition** = The share of India’s young, i.e. 0-19 years, population has already started to decline and is projected to drop from as high as 41 per cent in 2011 to 25 per cent by 2041.

On the other hand, the share of elderly, 60 years and above, population will continue to rise steadily, nearly doubling from 8.6 per cent in 2011 to 16 per cent by 2041.

India’s demographic dividend will peak around 2041, when the share of working-age, i.e. 20-59 years, population is expected to hit 59 per cent.

India’s age-structure by 2041 will resemble that of China and Thailand as seen during the current decade.

4. **Implications for Working-Age Population** = As per the NSSO Periodic Labour Force Survey 2017-18, India’s labour force participation rate for the age-group 15-59 years is around 53 per cent (80 per cent for males, 25 per cent for females).

Depending on the trajectory of labour force participation during 2021-41, additional jobs will need to be created to keep pace with the projected annual increase in working-age population of 9.7 million during 2021-31 and 4.2 million during 2031-41.

**What would be the policy implications of ageing?**

1. **Elementary schools** = As of 2016, population in the 5-14 age-group, which roughly corresponds to the number of elementary school-going children, has already begun declining in India and across all major states except Jammu & Kashmir. Overall, the number of school-going children in India will decline by 18.4 per cent between 2021 and 2041. This will have very important social and economic
consequences.

In light of the projected decline in elementary school-going children, the number of schools per capita will rise significantly in India across all major states even if no more schools are added.

The number of elementary schools with less than 50 students has increased over the past decade across all major states except Delhi.

The time may soon come in many states to consolidate/merge elementary schools in order to keep them viable. Schools located within 1-3 kms radius of each other can be chosen for this purpose to ensure no significant change in access.

Note that this is not about reducing investment in elementary education, but an argument for shifting policy emphasis from quantity towards quality and efficiency of education.

2. Health Care Facilities = If India’s hospital facilities remain at current levels, rising population over the next two decades (even with slowing population growth rates) will sharply reduce the per capita availability of hospital beds in India across all major states. A major problem with planning for the provision of medical facilities is the paucity of specific data, especially on private hospitals.

3. Retirement Age = Healthy life expectancy at the age of 60 now stands at 12.9 years (12.5 years for males; 13.3 years for females), though it is still much lower than that for other major developed and emerging economies. Due to ageing population and increasing pressure on pension funding, many countries have begun raising the pensionable retirement. Japan is considering to increase retirement age to 70 years.
Chapter 8 - From *Swachh* Bharat to *Sundar* Bharat via *Swasth* Bharat: An Analysis of the Swachh Bharat Mission

Status:-

- Even after 67 years of India’s independence, in 2014, around 10 crore rural and about one crore urban households in India were without a sanitary toilet and over 55 crore – about half the country’s population – still practiced open defecation.
- Poor sanitation costs India around 5.2 per cent of its GDP.

SBM’s Approach :-

*Bascic scheme* - Under SBM, an incentive of Rs 12,000 is provided for construction of Individual Household Latrines (IHHL) to eligible beneficiaries in rural areas and covers for provision of water storage.

1. **Community participation** – to promote ownership and sustained use.
2. **Flexibility in choice** – in building + list of technology options, with cost implications is provided to meet the user preferences and location specific needs.
3. **Capacity building** - augments the institutional capacity of districts to change behaviour at the grassroots level and strengthen the capacities of implementing agencies.
4. **Instil behaviour change**- Emphasising on awareness generation, triggering mind-set changes, leading to community behaviour change.
5. **Broad based engagement**- SBM set up the Swachh Bharat Kosh to encourage Corporate Social Responsibility and accept contributions from private organizations, individuals and philanthropists.
6. **Use of technology**- Use of IT, social media, geo-tagging of toilets, etc

**Mission of SBM** = Construction of Household toilets + Making villages ODF + Solid waste management

**Evaluation of SBM:**

- 98.9 per cent of India has been covered under SBM.
- Since October 2014, over 9.5 crore toilets have been built all over the country (till 14.06.2019).
Approx 93% of the villages and approx 93% of gram panchayats have been declared ODF.

Wrt. Solid waste management, many states have undertaken various activities such as construction of waste collection centres, menstrual hygiene management activities, installation of bio-gas plants, construction of compost pits, installation of dustbins, system for collection, segregation and disposal of garbage, construction of drainage facility and leach pits and construction of soak pits and stabilization ponds.

Analysis of SBM on health issues:

- **Deaths due to Diarrhoea declining** - Diarrhoea is leading cause of death among the Under-5 children in India, accounted for around 11 per cent of deaths in 2013 while it has reduced significantly over the past 4 years.
- Still Births have shown declining trend
- Malaria cases have declined
- **Other Factors**, like distribution of mosquito nets, fogging machines and construction of Gambusia fish hatcheries under the National Vector Borne Disease Control Programme and provision of safe drinking water, Oral rehydration solutions (ORS) and zinc, hand washing and personal hygiene under Integrated Action Plan for Prevention and Control of Pneumonia and Diarrhoea that have also played an important role in reduction of malaria and diarrhoea.
- **Economic benefits have increased** - A recent study conducted by UNICEF on behalf of MoDWS found that on an average, every household in an open defecation free village saved about Rs 50,000 per year on account of financial savings due to lower likelihood of disease from using a toilet and practicing hand washing and the value of time saved due to a closer toilet.

Way forward = Going forward, SBM needs to incorporate environmental and water management issues for sustainable improvements in the long-term.
Chapter 9 - Enabling Inclusive Growth through Affordable, Reliable and Sustainable Energy

Status:

1. **Share in world’s energy usage**: India accounts for 18 per cent of world’s population, India uses only around 6 per cent of the world’s primary energy.

2. **Energy poverty**: 53 per cent of our population could not access clean cooking in 2017 when compared to 30 per cent for China, four per cent for Brazil and less than one per cent for Malaysia.

3. **Energy efficiency programmes** have generated cost savings worth more than Rs 50,000 crores and a reduction of about 110 million tons of CO2 emission in 2017-18.

4. **Share of renewable** in total generation has increased from 6 per cent in 2014-15 to 10 per cent in 2018-19, India still needs investment in renewable energy of more than USD 250 billion over the next decade.

5. **Share of Electric cars**: Currently, the market share of electric cars is only 0.06 per cent in India when compared to 2 per cent in China and 39 per cent in Norway.

6. **Per-capita Energy consumption in India** is about one-third of the global average. India’s per capita energy consumption equals 0.6 tonnes of oil equivalent (toe) as compared to the global per capita average of 1.8 toe.

However, India cannot become an upper-middle-income country without

(i) Rapidly raising its share of the global energy consumption commensurate with its share of the global population, and

(ii) Ensuring universal access to adequate modern commercial energy at affordable prices.

The **Sustainable Development Goal (SDG) No.7** on Affordable and Clean Energy is closely related to all other SDGs. This is highlighted by the strong relationship between Human Development Index (HDI) and Per capita energy consumption.

A country with **100 Gigajoules of per capita energy consumption** has, on an average, **HDI of around 0.8** which is considered to be very high human development. India had a per capita energy consumption of **24 Gigajoules and a HDI of 0.64 in 2017** i.e., medium human development. India would have to quadruple its per capita energy consumption to reach a HDI of 0.8 and enter the group of countries with high human development.

**Energy efficiency**: India’s primary energy intensity of GDP has fallen from 0.0004 toe in 1990 to 0.0002 toe in 2017- it shows India is on path of energy efficiency.
Steps taken for energy efficiency in India :- The institutional and legal framework in the country for energy efficiency has been strengthened through the Energy Conservation Act in 2001, which created the Bureau of Energy Efficiency (BEE). The overall size of the energy efficiency market in India is estimated to be US$ 22.81 billion.

Impact of Energy efficiency programmes:

- **Reduction in energy consumption** – leads to lower greenhouse gas (GHG) emissions and cost savings. According to a BEE study, overall, this saving has resulted in total cost savings worth Rs 53,000 crore (approximately) in 2017-18 and contributed in reducing 108.28 Million Tonnes of CO2 emission. The contribution is largely from three major programmes – PAT, UJALA and Standard & Labelling.

Share of various energy sources in India:-
While there has been tremendous increase in the renewable energy capacity, fossil fuels, especially coal, would continue to remain an important source of energy.

Further, it may not be advisable to effect a sudden abandonment of coal based power plants without complete utilisation of their useful lifetimes as it would lead to stranding of assets that can have further adverse impact on the banking sector.

Further, considering the intermittency of renewable power supply, unless sufficient technological breakthrough in energy storage happens in the near future, it is unlikely that thermal power can be easily replaced as the main source of energy for a growing economy such as India.

A comprehensive energy policy should take into consideration the economies of both coal and renewables as they are interdependent. They are substitutes for each other as a source of energy but are complementary in keeping the flow to the grid stable as coal generation represents a stable source of power while renewable energy may be variable.

**Potential of Renewable energy:** Renewable energy sources are a strategic national resource. Harnessing these resources is a part of India’s vision to achieve social equity and energy transition with energy security, a stronger economy, and climate change mitigation and at much lower costs to the environment.

**Status:**

- **Share of renewable** (excluding hydro above 25 MW) in total generation was around 10 per cent in the year 2018-19 compared to around 6 per cent in 2014-15.

- **World rankings**, now globally India stands 4th in wind power, 5th in
solar power and 5th in renewable power installed capacity.

- **Installed capacity** - Total renewable power installed capacity (excluding hydro above 25 MW) has more than doubled from 35 GW on 31 March 2014 to 78 GW on 31 March 2019.

- **Reducing tariffs** - The solar tariff has come down from around Rs. 18/kWh in 2010 to Rs. 2.44/ kWh in bids conducted in 2018. Similarly for wind power, the tariff has declined from an average of Rs. 4.2/kWh in 2013-14 to Rs. 2.43/ kWh in December 2017. Therefore, the wind power cumulative capacity has exceeded 35.6 GW.

- **Hydro-potential** - India has a hydro potential of around 145.32 GW, out of which 45.4 GW have been utilised. To encourage the hydro sector, a new Hydro Policy has been approved which includes recognising large hydropower projects as a renewable energy source.

- For seamless energy transfer and stability of the grid, Green Energy Corridor project continues to be in operation. Eleven Renewable Energy Management Centres are already at different stages of installation.

- Kisan Urja Suraksha Evam Utthaan Mahabhiyan (KUSUM) scheme has been launched for providing financial and water security to farmers and for de-dieselization of the farm sector. The scheme envisages around 2.75 million solar pumps and, on a pilot basis, 1 GW decentralized solar power plants in uncultivable lands of farmers to enhance income of farmers.

**Electric vehicles in India:**

**Statistics:**

- **2nd** largest population + 3.3 million square Km of area= transportation needs are huge.
- In India, transport sector is the second largest contributor to CO2 emissions after the industrial sector.
- Road transport accounts for around 90 per cent of the total emissions in the transport sector in India. (MOEF&CC, 2018)
- “National Electric Mobility Mission Plan 2020 (NEMMP)” was conceived with an objective to achieve sales of 60-70 lakh units of total EVs by 2020.
- In 2015, the Faster Adoption and Manufacturing of Electric vehicles (FAME) scheme was launched to fast-track the goals of NEMMP with an outlay of Rs 795 crore.
In India, electric two wheelers have been the major part of EV sales with sales of around 54,800 in 2018 (NITI Aayog, 2019). Compared to this, sales of electric cars have been only around 2000 in 2017 (IEA-2, 2018). Indian market share of electric cars is a meagre 0.06 per cent.

Globally, the sales of electric cars have been rising at a fast pace from just over 2000 units being sold in 2008 to over 10 lakh in 2017. More than half of the sales were in China (IEA-2, 2018). The market share of electric cars is around 2 per cent in China while it is around 39 per cent in Norway. Electrification of two-wheelers and buses has also picked up pace in the recent years. In 2017, global sales of electric buses were about 1 lakh and sales of two-wheelers are estimated at 3 crore.

Global example = Norway, which has the highest share of electric cars has provided generous incentives to EV buyers and disincentives to the use of conventional vehicles. These include exemption from VAT, tax incentives on import and purchase of EVs, waiver of toll and ferry fees, free parking, etc. Closer home, Chinese government has issued a new energy vehicle (NEV) credit mandate that sets a minimum requirement regarding the production of new energy vehicles (PHEVs, BEVs and FCEVs), with some flexibility offered through a credit trading mechanism in the car industry.

Efforts Needed:

- **Availability** = The market share of EVs is positively related to the availability of chargers and a larger availability of chargers corresponds to a greater adoption of EVs. In India, the limited availability of charging infrastructure seems to be a major impediment to increased adoption of EVs.

- **Time taken for charging** = Another major impediment is that of time taken for completely charging EVs, compared to conventional vehicles. Even fast chargers can take around half an hour to charge an electric car while slow chargers could take even 8 hours. It is, therefore, an important policy issue to come up with universal charging standards for the country as a whole to enable increased investment in creation of such infrastructure.

- **Information** - It is equally important to provide information on public chargers to the users of EVs through online maps and other means such as physical signage. This will encourage increased ease of adoption of EVs.

- **Battery life** - Also, since the battery is the heart of any EV, development of appropriate battery technologies that can function efficiently in the high temperature conditions in India need to be given
utmost importance.

According to NITI Aayog (2019), if India reaches an EV sales penetration of 30 per cent for private cars, 70 per cent for commercial cars, 40 per cent for buses, and 80 per cent for 2 and 3 wheelers by 2030, a saving of 846 million tons of net CO2 emissions and oil savings of 474 MTOE can be achieved.

India’s economic future and prosperity is dependent on her ability to provide affordable, reliable and sustainable energy to all her citizens.
Chapter 10 - Effective Use of Technology for Welfare Schemes – Case of MGNREGS

MGNREGS basics = with effect from February 2, 2006. The programme was initiated to reduce rural distress by providing at least 100 days of manual labour at minimum wages to anyone who seeks employment under the program. Creation of productive assets for prescribed quality and durability, social inclusion, gender parity, social security and equitable growth form the founding pillars of the programme.

Analysis of first decade of MGNREGA:-

- **Problems occurred** – Scheme had been saddled with several inefficiencies, including widespread corruption, political interference, leakage, and significant delay in wage payments.
- **Reviewed with technology** - The programme was reviewed in 2015 and the government initiated major reforms using technology and emphasised on bringing in more transparency and accountability, robust planning and creation of durable productive assets; payment system underlying MGNREGS was streamlined, thereby reducing the scope for delays in payment.
- **Unbanked people** - As per a World Bank report, until 2015, close to 50 per cent of the country’s population did not have bank accounts. The proportion of unbanked population was significantly higher for rural people who are the target group for MGNREGS.

Use of technology in implementation of MGNREGS :-

1. **National electronic Fund Management System (NeFMS)** - was implemented in the year 2016. Under the system, the Central Government directly credits the wages of the MGNREGS workers, on a real time basis, to a specific bank account opened by the State Governments. This initiated the implementation of DBT in the Scheme. As a result of this initiative, the e-payment under MGNREGS has increased from **77.34 per cent in 2014-15 to 99 per cent in 2018-19.**

Impact of delay of payment:-

(i) Delays in payments can materially drive genuinely distressed farmers away from MGNREGS;

(ii) Improvement in the targeting of MGNREGS to genuine beneficiaries can increase the demand for work from distressed workers,
2. **Aadhar Linked Payments (ALP)** - ALP could speed up the wage payment cycle in the following two ways. First, due to stringent biometric requirements, ‘ghost’ beneficiaries were eliminated. Hence, Government officials require less time to verify and audit claims from such accounts. Second, the Central Government, can transfer wages directly to the bank accounts of the beneficiaries, thereby cutting the bureaucratic red tape. **Almost 55.05 per cent** of all the payments under MGNREGS are through Aadhaar Based Payment Systems (ABPS)

3. **NREGAsoft** – local language based e- Governance system to capture all activities under MGNREGA at Centre/State/District/Block level.

4. **GeoMGNREGA**- Space technology based development of database of assets created under MGNREGA using mobile photo based geotagging, GIS based information recording and monitoring.

5. **Increased accountability** – to empower rural citizens, various citizen centric mobile apps like – Gram Samvaad mobile app and JanMnREGA (an asset tracking and feedback app for MGNREGS assets) have been developed.

**Impact of DBT on effectiveness of MGNREGS:**

1. **Coverage** - The filled muster rolls have shown a significant increase after implementation of DBT indicating that more people are reporting for work. Also, total person days for vulnerable section are increasing.

2. **Timely payment of wages** - NREGASoft monitors generation of payment of wages within 15 days. In 2014-15, 26.9 per cent of the payments were generated within 15 days, which has now risen to 90.4 per cent in 2018-19.

3. **Demand for MGNREGS work** – is expected to increase in distressed area due to decline in delayed payment and direct bank linkage.

This chapter highlights the benefits of using technology in welfare schemes to improve **end to end governance**, create a robust evidence based implementation framework in partnership with the States, streamline the processes, **timely transfer of funds** to implementing agencies and beneficiaries, **plugging of leakages, optimum utilization of public funds** and improving overall performance (outputs/outcomes) of the programmes. It also significantly improves **transparency and accountability** and above all, ensuring that right **benefits reaches the right beneficiary** at the right time.

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**Benefits of DBT:**
- Timely payments
- Reduction in corruption and leakages
- Program’s performance increases and builds trust
- Better security, tracking and monitoring
- Streamline the verification process and end to end fund release process.
Suggestion for Policy inputs:-

- **Probable Indicator of distress**: Demand for work under MGNREGS may be used to develop a real-time indicator of distress at the granular district/ panchayat level. At present, it’s difficult. By utilizing information on demand for work under MGNREGS and correlating it with other real-time measures of weather etc., that lead to rural distress, a dashboard can be created which flashes ‘alerts’ from areas under local distress to enable policymakers to act in a timely manner to alleviate such distress. (As NNSO data comes with lag)

- **Expansion of ‘works’ under MGNREGS**: the definition of ‘works’ under the Scheme should be regularly reviewed and amended in light of the requirements. Inclusion of de-silting of canals and water bodies in the Water Conservation Mission would enhance their storage capacity and mitigate the frequency of floods.

- **Up-skilling the MGNREGS Workers**: convergence of DDU-GKY with MGNREGA along with involvement of women from SHGs needs to be strengthened so that supply for skilled wage labour increases. The focus needs to be on the diversification of the livelihoods with multiple sources of income for them to come out of poverty.

- **Expanding use of JAM to other Welfare Schemes**: The experience of increasing the effectiveness of MGNREGS by using DBT and ALP lends immense credibility to adoption of this strategy in other programmes.

- **Use of Digital Infrastructure for microbenefits**: A huge digital infrastructure, linking Aadhaar, bank accounts and mobiles has been created and effectively used for MGNREGS - the largest welfare programme. This can be used to expand the reach of the programmes through provision of micro-insurance, micropensions and micro-credit to people in every corner of the country. = financial inclusion + economic inclusion benefitting the vulnerable and marginalised sections of the society.
Chapter 11- Redesigning a Minimum Wage System in India for Inclusive Growth

Timeline of adoption of National Minimum wages:

- Minimum Wages Act in 1948- covers regular and casual workers. Set by both Central and state government for employees working in selected ‘scheduled’ employment.

- The Indian Labour Conference (ILC) of 1957 recommended determining the minimum wage based on the principle of a household’s needs.

- In 1988, the Labour Minister’s Conference made recommendations for linking minimum wage with the cost of living index, which became mandatory in 1991.

- In 1992, the Supreme Court of India ruled that minimum wage should also be linked with aspects such as children’s education, medical requirements etc.

Over the last 70 years, the minimum wage system in India has expanded and has become complex due to following issues:-

- Coverage- Today, there are nearly 429 scheduled employments and 1,915 scheduled job categories for unskilled workers.

- Lack of uniform criteria for fixing the minimum wage rate. In some states or in specific scheduled employments, minimum wages are linked to the cost of living, through a variable dearness allowance (VDA) whereas other states do not include the VDA component. Similarly, the notified lowest minimum wage rate (per day) varies
Does not cover all wage workers - Some major vulnerable categories such as domestic workers are presently covered only in 18 States and Union Territories. Further, the revision of minimum wage rates has often been delayed.

Gender discrimination - While the Minimum Wages Act does not discriminate between women and men, an analysis of minimum wages for different occupations shows persistence of systematic bias. For instance, women dominate in the category of domestic workers while men dominate in the category of security guards. While both these occupations fall within the category of unskilled workers, the minimum wage rate for domestic workers within a state is consistently lower than that for the minimum wage rates for security guards.

What has been the impact of minimum wage on the labour market in India?

1. Impact on wage levels = It acts as a “lighthouse effect”, i.e., the minimum wage acts as a benchmark that pulls up wages in the low-paid and informal sector by enhancing the bargaining power of vulnerable workers. Specifically, minimum wage seems to have shaped wage bargaining, thereby leading to rise in actual wages.

2. Impact on wage inequality = International experience suggests that greater compliance with minimum wages has led to reduction in wage inequality. This mixed trend of wage inequality – increasing amongst regular workers and declining amongst the bottom and middle level of all workers (mostly women) – can perhaps be explained by the rise of average minimum wages, in consonance with the increase in Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) wages, which were benchmarked to minimum wages.

3. Impact on employment = different studies find different outcomes. Few report a positive effect of minimum wages on employment levels for both men and women. They find that a 10 per cent rise in minimum wages raised the employment level by 6.34 percentage points in rural areas while it had a statistically insignificant impact on urban employment levels for both men and women.
Some policy recommendations for an effective design of minimum wages system are as follows:

- **Simplification and rationalisation** - Rationalisation of minimum wages as proposed under the Code on Wages Bill needs to be supported. This code amalgamates the Minimum Wages Act, 1948, the Payment of Wages Act, 1936, the Payment of Bonus Act, 1965 and the Equal Remuneration Act, 1976 into a single piece of legislation. The definition of wage in the new legislation should subsume the present situation of 12 different definitions of wages in different Labour Acts.

- **Setting a National Floor Level Minimum Wage** - Central government should fix it for different regions of India. Thereafter, states can fix the minimum wages, which shall not be less than the “floor wage.” This would bring some uniformity in the minimum wages across the country and would make all states almost equally attractive from the point of view of labour cost for investment as well as reduce distress migration.

- **Criteria for setting minimum wage** - Code on Wages Bill should consider fixing minimum wages based on either of the two factors viz; (i) the skill category i.e unskilled, semi-skilled, skilled and highly skilled; and (ii) the geographical region, or else both. This key change would substantially reduce the number of minimum wages in the country.

- **Coverage** - The proposed Code on Wages Bill should extend applicability of minimum wages to all employments/ workers in all sectors and should cover both the organized as well as the unorganized sector.

- **Regular adjustment** - A mechanism should be developed to adjust minimum wages regularly and more frequently, similar to countries like Montenegro, Nicaragua, Netherlands, Uruguay, and Costa Rica, where the minimum wage adjustment takes place every six months. Dashboard for the same is needed – to keep track + information dissemination + increased transparency

- **Role of Technology** - The concept of ‘bounded rationality’ in behavioural economics is that there are restrictions to human information processing, due to limits in knowledge (or information)
and computational capacities. Technology can help in overcoming this behavioural bias by making information available in a simple and clear manner. Use of a variety of online, mobile phone and networking technologies have the potential to facilitate the collection and analysis of labour statistics, assist with the dissemination of information about labour laws and policies, reduce costs and improve transparency.

- **Grievance redressal** - Easy to remember toll-free number for anybody to register his grievance on non-payments of the statutory minimum wages + wide publicity for the same to create awareness + Swift action should be taken against the offenders and this action should be flashed on the dashboard without going into specific details.

**Global examples** – take from BRICS countries – take from Survey

- **UAE** – Companies are legally required to pay wages to both national and migrant workers through banks, this system allows government to have a comprehensive wage data base and electronic wage payment monitoring mechanism for companies within country.
- **South Africa** - a system called ‘Impimpi Alive’, which enables workers to send anonymous SMS to Department of labour after which an inspector is dispatched to the employers place of business within 48 hours- to check minimum wage enforcement.
- **USA** – has an app ‘GovDocs Minimum wage’ that provides the most upto date minimum wage related data for all company locations.

**Way forward** = An effective minimum wage policy is a potential tool not only for the protection of lowpaid workers but is also an inclusive mechanism for more resilient and sustainable economic development. In evolution of ILO standards as well, which earlier encouraged the adoption of a select system of minimum wages to groups of workers who are in a weak bargaining position in the labour market, but later promoted a comprehensive approach that covers as many workers as possible.