

# Policy WATCH

**Volume XI, Issue 12**  
**December 2022, New Delhi**

# Special Issue

(COVERING ALL THEMES)

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## Editorial

The Rajiv Gandhi Institute for Contemporary Studies (RGICS) works on five themes:

1. Constitutional Values and Democratic Institutions
2. Governance and Development
3. Growth with Employment
4. Environment, Natural Resources and Sustainability
5. India's Place in the World

We bring out the monthly Policy Watch on each of these themes sequentially and every sixth issue is a Special Issue, where we carry articles from each theme. This is a special issue in which we carry one article on each theme.

The first article is by the undersigned and it gives an overview of laws related to Cooperatives in India, as a background to the 97th Constitutional Amendment. It also explains why the Amendment was partly struck down by the Supreme Court, on the grounds that the Union Parliament cannot make laws on subjects which are in the State List. This article is followed by a link to a podcast conversation by Prof Shambhu Mitra with The Hindu news team, on the proposed Amendment to the Multistate Cooperative Societies Act.

The second and third articles deal with the theme - Governance and Development. One by Ishaan Gera appeared in the Business Standard and explores the increasingly difficult fiscal situation of states and the second, by Neha Shah and Atman Shah, which appeared in the Scroll, discusses how the so-called Gujarat model of development has failed to deliver either equitable growth or higher social development indicators. Taken together, these articles show that it is not beneficial to pursue only a GDP growth strategy as that does not lead to widespread income enhancement nor to better health and education indicators. But if the state governments have to spend more on social development and welfare, they need to improve their fiscal health, which requires increasing the tax base and thus higher economic growth. How to resolve this dilemma.

Part of the answer to the above dilemma is indicated in the fourth article deals with the theme Growth with Employment. Here we reproduce the Executive Summary of the recent report of the People's Commission on Employment and Unemployment, convened by Prof Arun Kumar, Economist, formerly from the JNU. The RGICS had worked on this issue consistently over the last four years and our research articles on this topic are available on the website. Click on <https://www.accessdev.org/wp-content/uploads/2021/07/soil-report-2020.pdf>.

We will also be conducting a webinar of this report on the 30 th Dec 2022 at 5pm.

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The next article is under the theme Environment, Natural Resources and Sustainability by RGICS Fellow Jeet Singh. This article deals with the health of soils in India and is part of the series of articles that the RGICS had been doing on Jal, Jangal, Jameen. The RGICS has recently concluded a year-long eight state study on groundwater, to identify and document locally appropriate solutions for regeneration and sustainable management of groundwater.

(Click on <https://www.rgics.org/event/research-report-groundwater-management-in-india-maharashtra-state-report/>). This article moves from water to soil, the other important natural resource base for ensuring agricultural productivity. Of course, the role of forests in maintaining and building soil productivity is important and thus the Jal, Jangal, Jameen trio has to be understood together.

In the fifth theme, India's Place in the World, we discuss the continuing trade imbalance in India China trade, which according to us is as great a matter of concern as the border skirmishes. This article is reproduced from the Indian Express. The RGICS has done work on this theme over the years and our research reports are available on the website. Click on the links below to see these:

<https://www.rgics.org/wp-content/uploads/India-China-Trade-and-Investment-Study-Paper.pdf>

<https://www.rgics.org/wp-content/uploads/Working-Paper-on-Chinese-Goods-Make-in-India-CREATE-Jobs-I.pdf>

We hope the readers find the above articles enjoyable and informative. We would appreciate any feedback.

**Vijay Mahajan**  
**Director, Rajiv Gandhi Institute for Contemporary Studies**

# **Constitutional Values and Democratic Institutions:**

## **A background on cooperative laws**

*Vijay Mahajan*



A co-operative society is often a voluntary association of individuals who come together with the intention to work together and to promote their economic interest. These societies work on the principle of mutual help for the members. Thus they are the original form of “social enterprises”. The philosophy of cooperatives is best captured by the seven Rochdale Principles which include

1. Voluntary and open membership
2. Democratic member control
3. Member economic participation
4. Autonomy and independence
5. Education and training of and information to members
6. Cooperation among cooperatives
7. Concern for community

The Constitution (97th Amendment Act), 2011 was enacted to reform the over 100 year old Co-operative Societies laws in India. The first laws were the Co-operative Credit Societies Act, 1904 and the Co-operative Societies Act, 1912. Over the years, as state financial support to cooperatives increased, their autonomy got reduced. The successive state governments enacted provisions for suspension and supersession of Boards of cooperatives and takeover of their management by government appointed officials. The elections were not held for many years and when those were held, politically powerful elements cornered most of the Board positions. As a result, the general membership was alienated from cooperatives and increasingly cooperatives became moribund.

There were numerous official attempts to revive cooperatives but eventually in the 1980s, some members of the cooperative movement got together and created an enabling model law which was enacted in Andhra Pradesh as the Mutually Aided Cooperative Societies Act, 1995. It was described as “an Act to provide for the voluntary formation of co-operative societies as accountable, competitive self-reliant business enterprises, based on thrift, self-help and mutual aid, owned managed and controlled by members for their economic and social betterment.”

In furtherance of this, the Multi-State Cooperative Societies Act, 2002 was enacted by the Parliament, to consolidate and amend the law relating to cooperative societies, working in and serving the interests of members in more than one State. The Act was aimed to facilitate the voluntary formation and democratic functioning of cooperatives as people's institutions based on self-help and mutual aid and to enable them to promote their economic and social betterment and to provide functional autonomy and for matters connected therewith or incidental thereto.

The 97th Amendment provided addressed the issue faced by cooperatives in terms of increasing control by the Registrar of Cooperatives. The amendment aimed to provide autonomy of operations to coops, while ensuring democratic functioning with accountability to members and transparency to all stakeholders.

The background of the 97th Amendment was as follows. A conference of Ministers for Co-operatives from all the states was held in December 2004. The main concerns expressed at the conference were: (a) How to ensure autonomous, democratic, and professional operation of Co-operatives? (b) How to ensure that external audit, general body meetings, and elections are held consistently and on time?

The 97th Amendment to the Constitution added the word cooperatives to clause to Article 19(1)(c) which earlier stated only that "All citizens shall have the right to form associations or unions. By including this in the article 19, the Parliament has ensured that the people's right to form Co-operative societies is treated as a fundamental right and this receives the fullest protection from the High Courts and the Supreme Court.

A second important amendment was carried was the addition of a new Article 43B to the Directive Principles of State Policy, stating that "The State shall endeavour to promote voluntary formation, autonomous functioning, democratic control and professional management of co-operative societies.". By doing this the four most important concerns with a large number of the existing cooperatives, which were largely formed and controlled by the State, with only nominal democratic functioning and low quality management, were attempted to addressed. The main operative parts of the Amendment appeared in a new Part IX-B to the Constitution, titled 'The Co-operative Societies' in which new Articles 243-ZH to 243-ZT were added.

The Amendment was approved to professionalise the management of Co-operative societies. It provided a uniform legal framework across the states in matters of incorporation regulation, and dissolution of Co-operative societies, the composition and terms of office bearers, including specifying a maximum of 21 Board members, reserving one board seat for members of Scheduled Castes or Scheduled Tribes and two seats for women, and providing a fixed term of five years in the case of elected members of the board and its office bearers. The amendment also provided for supersession or suspension of the board and interim management but for a maximum period of six months. The General Body Meeting must be convened within 6 months of the end of the fiscal year and any member has the right to information about the Co-operative societies Article 243ZR provided for Multi-State Co-operatives for which Parliament could enact laws.

However, the 97th Amendment was passed by Parliament and notified as law without being ratified by state legislation. This was challenged before the Gujarat High Court in *Rajendra N. Shah v. Union of India* (2013). The Gujarat High Court, ruled that the 97th Amendment Act was unconstitutional on the ground that contested the constitutionality of the 97th Amendment because 'Co-operative Societies' are solely a matter for state legislatures to pass laws as stated in Entry 32 of the State List: "incorporation, regulation, and dissolution of corporations other than those specified in List I, and universities; unincorporated trading, literary, scientific, religious, and other societies and associations; Co-operative societies".

The Gujarat High Court observed that several restrictions have been imposed by incorporating Part IX-B, limiting the authority of state legislatures to enact any Co-operative society laws on those aspects. Though the law governing Co-operative societies was listed in the State List, Parliament has curtailed this power of state legislatures, without moving the subject of Co-operative societies to either the Concurrent or the Union List. As a result, the 97th Amendment Act was ruled unconstitutional because inserting Part IX-B without the necessary ratification of States and was thus ultra vires. Dissatisfied with the High Court's decision, the Union of India filed an immediate appeal to the Supreme Court.

The Gujarat High Court's decision was upheld by a three-judge bench of the Supreme Court, stating "we declare that Part IXB of the Constitution of India is operative insofar as multi-state co-operative societies are concerned.... Part IXB, insofar as it applies to co-operative societies operating within a State, would thus require ratification under Article 368(2) of the Indian Constitution. In the present case, because ratification has not occurred, the Amendment is non-est." According to the Constitution's interpretation, there is a tilt in favour of the Centre and Federal supremacy for the States. According to this principle, States have the sole authority to legislate on matters reserved solely for them. The court clearly stated that Article 243 ZI makes it clear that states can make law on the incorporation, regulation, and dissolution of a society under this Act.

The Supreme Court ruled that as the subject matter of an Amendment falls within the scope of Article 368(2), it should also have been ratified by the legislatures of at least one-half of the states before the Bill containing the Amendment is presented to the President for assent. The Court noted that the 97th Amendment, which adds to the chapter on Co-operative Societies, had not been ratified.

Though the 97th Amendment was rejected on the basis of inadequate legislative process being adopted in terms of ratification by State legislatures, the necessity of the Amendment cannot be disputed. It gave Co-operative societies a proper framework and standards. As the Supreme Court had ruled that the application of the 97th Amendment to Multi-State Co-operative Societies was valid.

Decoding the Multistate Cooperative Societies Bill, 2022 by Prof Shambu Prasad,<sup>1</sup> IRMA

The Union government introduced the Multi-state Cooperative Societies (Amendment) Bill in the Lok Sabha on December 7. The justifications for the Bill given by the government include: strengthening governance, reforming the electoral process, improving the monitoring mechanisms, and ensure ease of doing business, ensure financial discipline, and making it easier to raise funds. But Opposition members have criticized sections of the Bill on the grounds that it encroaches into the jurisdictions of States, and seeks to centralize power with the Central government. There is also the question of whether the changes enhance or dilute the autonomy of the multi-state co-ops. To listen to the podcast, click on the link in the footnote below.



<sup>1</sup> Source: <https://www.thehindu.com/podcast/decoding-the-multistate-cooperative-societies-amendment-bill-2022-in-focus-podcast/article66288436.ece>

# Governance and Development: Indian states, indebted in plain sight

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Ishaan Gera<sup>2</sup>

In the 6th century BCE, Athenians elected Solon to solve the city-state's debt crisis. Solon's reforms led to the abolition of debt slavery and restructured society. In the late nineteenth century, Egypt lost control of state resources to debt. The Ottoman Empire defaulted on its debt around the same time: a crisis that contributed to its demise ultimately.

As the pandemic wanes after two years, countries are counting the cost of debt they took to fund fiscal packages. Sri Lanka's financial crisis prompted the Reserve Bank of India (RBI) to look at the debt of the country's states.

Of the 17 states for which RBI data is available, all but three are set to exceed their outstanding liabilities or debt target of 20 per cent gross state domestic product (GSDP) to be achieved by 2022-23, as per the recommendations of the Fiscal Responsibility and Budget Management Review Committee.

It will not be any better for the next four years, at least. The aggregate debt to GSDP ratio of all states will increase to 27 per cent in 2026-27, compared to 26 per cent in 2019-20. Five states shall exceed the 32.5 per cent target set for 2025-26 by the fifteenth finance commission.

The current method of calculating debt to GSDP ratio may not present a correct picture, and the total liabilities of states are higher, a 'Business Standard' analysis found. A standard calculation of a state's public debt considers outstanding liabilities, including loans from the central government, market borrowings, state development loans, etc. It doesn't consider loans taken by state public sector undertakings (PSUs), which also hold sovereign guarantee. Neither does it consider the debt of power utilities, popularly called discoms. Such guarantees by PSUs and discoms have grown considerably. Andhra Pradesh government's outstanding loan guarantees have increased 11 times in five years. For Bihar, the rise has been five times.

If such guarantees are considered, the debt to GSDP ratio jumps ten percentage points for Andhra Pradesh and three percentage points for Bihar. In the case of Andhra Pradesh, the discom debt alone would add two percentage points to the state's debt to GSDP ratio.

The other problem is interest payments. The interest cost for states has doubled over the last six years. It accounted for 27 per cent of states' own tax revenue in 2021-22. The number was 25.7 per cent in 2015-16.

As states demand further easing of borrowing limits, they need to present a clearer picture of their debt. The central government needs to do that too.

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<sup>2</sup> Source: [https://businessstandard.substack.com/p/indian-states-indebted-in-plain-sight?utm\\_source=profile&utm\\_medium=reader2](https://businessstandard.substack.com/p/indian-states-indebted-in-plain-sight?utm_source=profile&utm_medium=reader2)

**Table 1: Key Fiscal Indicators of States**

(Per cent of GSDP)

State	2020-21	2021-22 RE	2022-23 BE	Relative Size of States (in per cent)	2021-22 RE			
	Debt				Interest Payment to Revenue Receipts (Per cent)	Gross Fiscal Deficit	Revenue Deficit	Primary Deficit
Andhra Pradesh	35.5	32.5	32.8	↓	14.3	3.2	1.6	1.4
Bihar	36.7	38.6	38.7	↓	8.6	11.3	5.5	9.2
Chhattisgarh	26.3	26.2		↓	8.0	3.8	0.3	2.1
Gujarat	21.0	19.0		↓	14.2	1.5	0.0	0.2
Haryana	28.0	29.4		↑	20.9	3.0	1.4	0.8
Jharkhand	34.4	35.0	27.0	↓	8.4	3.0	-0.1	1.3
Karnataka	22.4	26.6	27.5	↓	14.3	2.8	0.4	1.3
Kerala	37.1	37.0	37.2	↓	18.8	4.2	2.6	1.7
Madhya Pradesh	31.0	31.3	33.3	↓	11.7	4.2	0.6	2.2
Maharashtra	19.6	17.9	18.1	↓	11.4	2.8	1.0	1.5
Odisha	20.0	18.8	18.6	↓	4.3	3.5	-3.3	-0.6
Punjab	49.1	53.3		↑	21.3	4.6	1.6	0.7
Rajasthan	40.5	39.5	39.8	↓	14.9	5.2	3.0	3.3
Tamil Nadu	26.9	27.4	27.7	↓	21.0	3.8	2.5	1.9
Telangana	25.2	24.7	25.3	↓	11.3	3.9	-0.4	2.4
Uttar Pradesh	29.1	34.9	32.5	↓	11.2	4.3	-1.3	1.8
West Bengal	37.1	34.4	34.2	↓	20.8	3.5	2.2	1.1

← Higher      Lower →



- Note:** 1. Data for Punjab is based on the Report titled 'State Finances: A Study of Budgets 2021-22' as its budget for 2022-23 has not been presented yet. Though, Odisha's budget for 2022-23 is Vote-on-Account, it has released its FRBM documents for 2022-23. As indicated by the state government, debt stock of 16.98 per cent of GSDP may increase by 3 per cent of GSDP if public account liabilities are incorporated..
2. For other states, data for debt, GFD, RD and PD are reported by the respective state governments in their budget documents and may not match with data to be compiled by the Reserve Bank as the methodology for compilation of these indicators differ.

**Sources:** Budget documents of state governments; Reserve Bank of India; and PRS Legislative Research.

Source: [https://www.rbi.org.in/Scripts/BS\\_ViewBulletin.aspx?Id=21070](https://www.rbi.org.in/Scripts/BS_ViewBulletin.aspx?Id=21070)

## **Governance and Development:**

# **The Gujarat “Development Model” is proof that trickle-down economics is a fantasy**

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**Neha Shah & Atman Shah**<sup>3</sup>

The state’s social indicators lag behind its economic figures, indicating that the gains of growth have not reached a large segment of residents.

As Prime Minister Narendra Modi’s Bharatiya Janata Party has ruled the state since 1995, barring a brief two-year period in between. There is no doubt that Gujarat is among the states with a high growth rate. But income is not – and should not be – the only criterion to measure development. The state’s social indicators show that its progress is not in line with its economic indicators.

The gap between propaganda and the reality of the “Gujarat development model” was brought into the glaring spotlight with the collapse of the newly renovated bridge over the Machchhu River in Morbi on October 30. It highlighted the problem of corruption in a state that claims to be corruption-free.

Gujarat also draws praise for its good infrastructure for businesses. It ranks fifth in terms of per capita availability of power at 1,852 kilowatt per hour, according to the Reserve Bank of India’s Handbook of Statistics on Indian states. It also has a relatively well-maintained urban road network. The Indian government’s Business Reforms Action Plan, 2020, ranked Gujarat second.

The state of Gujarat’s public social infrastructure was brought into the spotlight as Modi was due to visit Morbi to meet survivors and the families of the dead on November 1: the night before, the Civil Hospital in Morbi was hurriedly painted and renovated.

### **Income disparities**

Since 1960, when Gujarat became an independent state, its growth rate has remained above the national average due to the entrepreneurial culture of the state’s business community and the efforts of state governments across party lines.

The Socio-Economic Review of Gujarat, 2021-22, suggests that the average annual growth rate of the Net State Domestic Product has stayed at 9% over the last decade. Gujarat ranked fourth among all states in per capita state domestic product in 2019-'20. In terms of absolute income and growth too, Gujarat has been among the top states.

At the same time, as one of the top employment providers, the state attracts significant migrant labour – but is a poor wage payer. The rural daily wage for non-agriculture labour was Rs 239.30 in 2021 compared to Rs 677 in Kerala and the national average of Rs 315, according to the Reserve Bank of India. Gujarat ranked 17th on the list of average daily wage in rural areas for non-agriculture labour in 20 states and Union Territories.

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<sup>3</sup> Source: <https://scroll.in/article/1038161/the-gujarat-development-model-is-proof-that-trickle-down-economics-is-a-failure>

The National Wage Report-2018 of the International Labour Organisation showed that for 2011-12, the average daily wage for urban workers in Gujarat was Rs 320 against Haryana's Rs 783 and national average of Rs 449. Gujarat was at the bottom of the list of 20 states. It's clear that higher growth has not automatically improved remuneration for Gujarat's working-class people.

### Poor social indicators

In socio-economic indicators, however, the state's rankings are not stellar. With a 78% literacy rate, Gujarat ranks 17th among states and Union Territories, according to the 2011 Census.

Among 30 states, Gujarat ranked 22nd with 77.4% children enrolling in secondary schools and 25th with 43.2% enrolment for higher secondary schooling. The quality of education is a serious concern, especially in government schools.

According to the Annual Survey of Education Report, 2018, carried out by PRATHAM, less than 55% of Class 5 students from government schools could read Class 2-level texts.

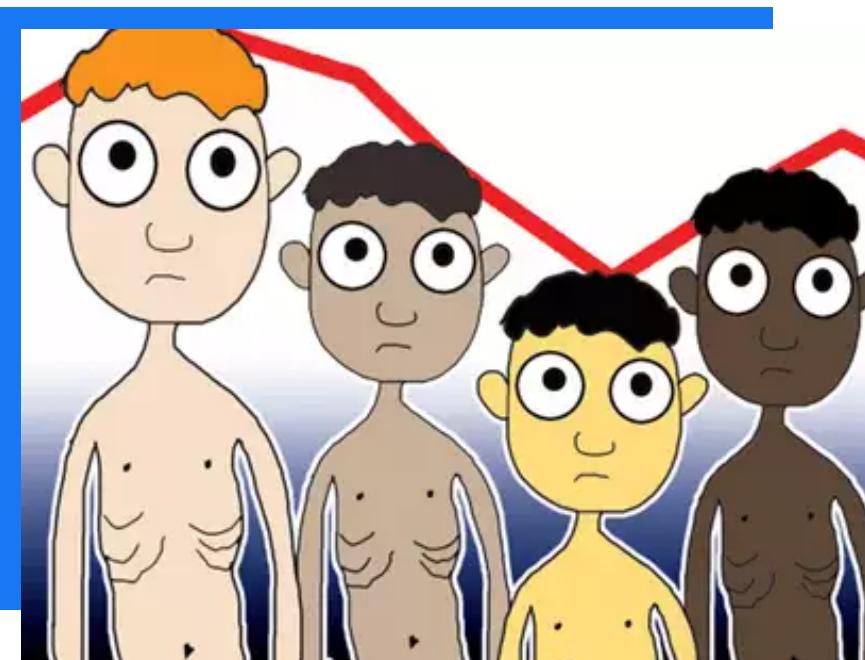
Only 18% of the children in government schools could do mathematical division in Class 5. In 700 government schools there was only one teacher for Class 1-8 to teach all subjects. There is heavy dependency on vidya sahayaks, or assistant teachers, rather than permanent teachers. In the past two years, 86 government schools were shut down while 491 were merged, according to a response submitted in the state legislature in March.

Gujarat's health indicators are no better. According to the Handbook of Statistics on Indian States, life expectancy for 2015-19 was 70.2 years, putting Gujarat below other high-income states such as Maharashtra (72.7 years), Punjab (72.8 years) and Tamil Nadu (72.6).

Infant mortality rate was 25 of every 1,000 live births in 2019. This placed Gujarat at the 12th position among states and Union Territories. Between 2016-2019, the maternal mortality rate was 5.1, higher than other wealthy states such as Karnataka, Maharashtra and Tamil Nadu.

The fifth round of the National Family Health Survey for 2019-'21 showed that the rate of stunted children had not reduced compared to the findings of the previous round of data collection. According to the World Health Organization, stunting or impaired growth among children is the consequence of poor nutrition.

At the same time, the number of underweight children had increased marginally in Gujarat. This signals that undernourishment is rising in Gujarat alongside high economic growth.



## **Low investment in essentials**

Gujarat is an example of the failure of the trickle-down hypothesis – the gains of development have not percolated to a large segment of the population. The state has paid an opportunity cost in terms of its social indicators to attain high economic growth.

The market has responded to government support and progressed well by exploiting profitable opportunities but has kept away, as it would, from non-profitable essentials such as health and education for the marginalised sections.

For the past two decades, Gujarat's education expenditure has been less than 2.5% of the gross state domestic product, or GSDP, despite the Kothari Commission in 1966 and the National Education Policy in 2020 recommending that the figure be 6%.

Gujarat also spends less than 1% of its GSDP on health with the trend continuing after the Covid-19 as well. The state's capital expenditure on health reduced by 31.9% from Rs 1,067.44 crore in 2019-20 to Rs 726.88 crore in 2020-21. The level and nature of government expenditure reflects its priorities. Simply increasing expenditure will not fix the problem. Instead, the state needs quality public expenditure on education and health. This will help persuade citizens to trust government hospitals and schools. True democracy can be established only if growth is inclusive.



## Growth with Employment:

# Executive summary of report of people's commission on employment and unemployment set up

Desh Bachao Abhiyan, Convenor: Prof Arun Kumar

When society faces a problem and is unable to resolve it, it implies that something basic is wrong. One needs to look for its basic causes to solve the problem. The causes may lie in the system that has evolved over time and which conditions the dominant social and political thinking in society. The onus of finding the solution and rectifying the problem is on the rulers. Their failure to do so over time implies a lack of motivation/commitment to solve the problem. All this applies to the issue of employment generation and unemployment in India which has been growing over time and affects the vast majority of the citizens.



### The basic issue

Gandhi said that India is the only country capable of giving a civilizational alternative. Time has come to take this seriously since unemployment has become a critical issue which needs to be urgently tackled. The issue is multi-dimensional since it is a result of multiple causes and has widespread implications. It impacts growth of the economy, inequality, poverty, etc.. It has gender dimension and impacts the marginalized sections adversely reflecting a lack of social justice. It is entrenched among the youth. The more educated they are greater the unemployment they face. Consequently, it has political and social implications, like, on social relations.

The rapidly growing incomes of the top 1% in the income ladder indicates that the economy has the resources but they are mal-distributed. The rich at the top have created a system that enables them to capture most of the gains from development with little trickling down to the rest.

This Report presents a framework which spells out the causes, consequences and possible remedies. Further, it looks at the historical process underlying the evolution of policies so as to understand how they can be changed.

If any form of distortion persists over a long period, as unemployment in India, its origins lie in society's perceptions and priorities. In India, these can be traced to the adoption of state capitalism and persisting feudal tendencies of the elite policy makers who in their own self-interest adopted a trickle down model of development.

Further, Capitalism has globally taken the form of marketization which promotes 'profit maximization'. But is it then legitimate to keep workers unemployed? It implies loss of output and therefore reduces the size of the economy which leads to lower level of profits. So, by the logic of individual rationality, the system should create productive employment for all.

The market's notion of 'efficiency' is status quoist since it seeks to perpetuate the historical injustice in society. 'Consumer sovereignty' implies that individuals should be left free to do whatever they wish to. The collectivity should not intervene in their choices no matter how socially detrimental they maybe. It promotes the notion that if I have the money I can do what I like. The ratio of incomes is 10,000 times and more between the big businessmen and the poor workers. The market sees nothing wrong in this; in fact, society has come to celebrate it.

Marketization is determining society's choices through its principles penetrating all aspects of society. One of these principles is the 'dollar vote'. The policy makers accept it and prioritize the choices of the well-off over those of the marginalized. The well-off dictate the social judgments of policy makers. Consequently, not only equality is not on the agenda even equity is not.

With marketization stripping off the social aspect from life, individuals become automatons. Their individual distress and situation in life is no one's or society's concern. Unemployment becomes just a switching off of a machine. No social concern need be attached to it. In fact, capitalists welcome unemployment as an 'efficient' device to discipline labour and neo-classical economics considers it as natural. Inflation further weakens large numbers of workers as they lose purchasing power.

In essence, whether or not society should aim to give productive employment to all reflects its view of individuals. Society needs to choose what is more important - profits or welfare of the marginalized majority. The Gandhian view, largely rejected by the Indian elite, was 'last person first' which defined what the priority should be.

### **The historical context**

With Independence, the elite rulers wanted to quickly copy 'western modernity' rather than work out an 'Indian modernity'. So, the focus became the development of the modern sector. The urban centric elite policy makers saw this as development. But, this sector generates far less employment than India required to take people out of agriculture and rural areas and out of poverty. Terms of trade at the farm level shifted against the farmers so that surplus could be ploughed into industry and urban areas. Millions of tribals, landless and marginal farmers came destitute to the cities and provided cheap labour both for industry and the well-off sections. The acuteness of the problem faced by the marginalized was exposed during the pandemic in 2020.

The elite have viewed their policies since 1991 as successful in reducing poverty. But, poverty has changed its form since poverty is 'space and time specific' and is a moving target. The connection between poverty and lack of proper work has been known for long and that is why 'Right to Work' has been a continuing concern in India for long.

The top-down policies, pursued after Independence, were moderated by the government intervening to help the poor. This feature of policies was jettisoned in 1991 with the launch of the NEP. It changed the policy paradigm so that the collective was no more responsible for the individual's problems. Policy became 'growth at any cost' with the cost falling on the workers and the environment. Consequently, at a low per capita income, India has some of the most polluted cities and rivers in the world, further impacting the marginalized.

The modern or the advanced sectors being capital intensive cannot offer enough work to the migrants being displaced from rural areas. This has resulted in the creation of a reserve army of labour, which has weakened labour and forced it to accept a wage much below a 'living wage'. The resulting distress has led to social and political strife which suggests that this development paradigm is unsustainable socially, politically, economically and environmentally.

The global economic developments since the end of the Second World War in 1945 are crucially important. Not only did the pattern of globalization in the world change, the internal dynamics of developing countries was getting determined by the global interests of big powers. Policies since the 1980s are based on the idea of 'market friendly state intervention'. They are not about 'free' markets. The World Bank realized that these policies could lead to a social explosion as inequalities increased. So, it proposed 'safety nets' to give capitalism a 'human face', like what 'welfare capitalism' did in Europe in the 1950s.

Global financial capital has been looking for a way out of the crisis. But it is not willing to go for basic changes that could provide a solution. In India since the mid-1960s, there has been an erosion of economic sovereignty as policies have come increasingly under the sway of global capital. Consequently, the government is increasingly less able to deal with India's problems in what could be the most desirable way.

## **Constitutional/Legal aspect**

The Preamble of the Constitution through its noble words promised, 'Justice, social, economic and political'. There is promise of Liberty of thought, expression, belief, freedom of faith and worship. It propagates the Equality of status and of opportunity and to promote Fraternity, assuring the dignity of the individual and the unity and integrity of the Nation. But without proper work, an individual will not be able to earn a 'living wage' and will be poor. This violates the constitutional provisions.

Of the 6 Fundamental Rights provided in the Indian Constitution, 4 are directly linked to economic aspects of incomes and work. These can be used to frame the 'Right to Work'.

## Issues of Youth, Education, Gender and Regional Differences

Four aspects may be noted about unemployment in India:

1. Unemployment is entrenched among the young in the age group 15 to 29.
  2. The more educated the person, the higher the chance of being unemployed.
  3. This is particularly so for women.
  4. Large numbers do not find work commensurate with the degree/skill they have acquired.



The unemployed youth unable to get a proper job, feels she/he has failed the family. There are taunts and frustration all around. Many get sucked into substance abuse, violence in the family, illegalities of various kinds or even suicide.

Teaching is also in crisis. It is unlike an office or a factory job. It requires commitment and originality. Unfortunately, most learning is by rote which prevents absorption of knowledge and damages education. The result is a vicious cycle of indifferent teaching and disinterested students. No wonder general standards of education are poor and businesses complain of unemployability. Further, given the loss of prestige and self-confidence of the research and teaching community, policy making has slipped into the hands of politicians and bureaucrats who do not understand the special milieu of education and try to achieve 'standards through standardization'. This is an anathema, especially for higher education.

The crisis in education has led to growing illegality in the field of education with all manner of fraudulent practices. In brief, the crisis in society is reflected in the field of education and in turn that aggravates the crisis in society by preventing a resolution.

Low participation of women in labour force (LFPR) weakens their position in the household and in society since they hardly have income in their hands. It works against their progress. There are regional diversities regarding employment. The more advanced states generate more work and of better quality than the backward ones. So, the latter are the ones that depend more on public sector jobs.

Youth also expects public sector jobs. The public sector which employs barely 4% of the work force cannot solve the problem of unemployment. Why is there no youth protest on lack of jobs in general? True, a large number of posts in the public sector are lying vacant and need to be filled up. The lack of awareness of the wider issues among the youth is a direct consequence of the decline of the institutions of higher education and of youth politicization. Students are getting more and more alienated and trapped in social media and substance abuse. Many become open to believing in false dogmas, unscientific traditions and religiosity. With little hope for the future they are willing to believe that the past was glorious. And this opens them to right wing ideas.

## **Data issues**

Analysis of the employment situation in India is complicated by data related issues and difficulties with definitions. There is a paucity of data and lack of clarity. Those working in the organized sector of the economy can be counted but they are only 6% of the workforce. What about the 94% in the unorganized sector? Data is patchy. In the Indian context, three definitions are used:

1. Usual status
2. Current weekly status, and
3. Current daily status

Many work for a part of the day or week or year and are counted as employed. India does not have social security for the unemployed and there is poverty. This combination implies that people have to work to survive and therefore get counted as employed. LFPR is low (45.6%) compared to most other big or comparable countries. It has also declined since 1990 from 58.3 to 45.6% in 2021. Currently, it is lower than the figure for some other S. Asian countries.

In brief, India is characterized by under employment and disguised unemployment rather than unemployment. The problem is more acute in rural areas, among women and educated youth. Finally, various kinds of unemployment result in greater poverty, 'social waste' and lowering the potential output of the economy. This is a huge cost to the system and to capitalists. Government in India is grossly understaffed. Per lakh of population, the number of judges, administrators, police, etc. is much smaller than in most countries.

The organized sector employment has dropped as a per cent of the population from 3.32% in 1990-91 to 2.47% by 2011-12. It is not unrelated that the number of people enrolled in the labour exchanges rose from 34.6 million to 40.2 million. In 2014 the promise was 'minimum government, maximum governance'. Sounds good. But it should not mean further reducing employment in government.

### **Growth alone will not solve the problem**

The problem of unemployment will not only remain but get aggravated if the organized sector invests more and grows faster. The focus has to be on generation of work in the small and micro sectors by improving conditions for their growth. 'Growth first' is a self-serving slogan of the elite policy makers to justify their stance. They argue that the pie has to grow before it should be distributed. Idea is that trickle down will deliver and the marginalized need to wait. Question is how long? Equitable growth can be faster than the current growth since demand problem will not keep manifesting itself. It will also be more humane and sustainable.

So, while government cannot directly create enough employment, it can create the milieu for employment generation in the economy by restructuring policies that would enable full employment. The rules of the game have to be set right and that means overhauling policies which do not target employment generation.

Since employment depends on the prevailing milieu, it is a derived variable determined by other variables. Some of them are, demand in the economy, GDP growth, investment pattern, technology, public finance – taxation and expenditures, entrepreneurship, education and skill levels, black economy and social waste. Even in agriculture there is growing mechanization which is displacing labour. People are forced to do whatever they can – the system is not generating work for them and in that sense they do residual work.

There are 6,000 large businesses, 6 lakh small and medium units and 6 crore micro units in the country. Most of the employment is in the micro units. Unfortunately, at present policies are made for MSME as a whole and the benefit is taken mostly by the medium sector. Micro and small units lack three things - Finance, marketing and technology upgradation. When even larger private sector units in India hardly develop technology, it is difficult to imagine that the small or 6 micro units will do so. Government needs to encourage the setting up of producers' cooperatives of businesses in the same line of production.

### **Factors underlying growing unemployment**

The important factors for unemployment are:

#### *1. Employment is a residual:*

Focus is on Investment in the organized sector which generates little employment.

#### *2. Marketization, 'Supply side' policies and weakening of labour:*

NEP have weakened labour and strengthened capital in a variety of ways. Labour is further weakened due to the division not only between the organized and the unorganized sectors but also among the many trade unions representing labour. Policy makers argue that flexibility in employment is needed which is false since 94% are in the unorganized sector and have no protection. Yet, unemployment is rising. These factors that weaken labour prevent it from demanding full employment policies.

#### *3. Growing inequality and demand shortage:*

Rising inequality in the economy results in demand shortage unless investments rise and/or government expenditures increase and/or export surplus rises. One way of overcoming the problem of excess production is to produce armament which is a form of machine. It gets destroyed or becomes obsolete and does not produce more output which remains unsold. In the short run it leads to employment through war and arms, but over time it reduces employment.

#### **4. Technology changing rapidly:**

Some jobs become redundant while new possibilities open up. But, it is often not a zero sum game. Especially when the change is rapid there is little time for the workers to retrain for new jobs. In the last few decades, the rate of technical progress has accelerated with introduction of faster micro-processors and more of artificial intelligence giving little time for retraining.

#### **5. Black economy is large and persisting:**

It results in policy failure, flight of capital and social waste. These factors leave the economy poorer, slows down development and reduces employment generation below the potential. It has slowed down growth by 5%. If the black economy had not existed, the economy could have been 8 times larger. It causes a shortage of resources for development and 'expenditures do not lead to outcomes'. Thus, there is a direct and an indirect impact on employment generation in the economy. For instance, programmes to increase employment do not fulfill their promise.

#### **6. Economic shocks damaging the unorganized sector policies:**

These favour the organized sector. It has been growing at the expense of the unorganized sector and reducing the employment potential of the economy. Of late, flawed policies have administered shocks to the economy which have impacted the unorganized sector. a. First, the demonetization, premised on the incorrect notion that 'black means cash'. b. Second shock came 8 months later in July 2017 in the form of GST. The benefits accrue to the organized sector and the disadvantages to the unorganized sector. c. Third shock in 2018 was the crisis in Non-Banking Finance Companies (NBFC) d. The pandemic and the lockdowns was the fourth shock and a most severe one. Consequently, while the organized sector is doing well the unorganized sector has floundered and that has hit employment.

#### **7. Inadequate attention to the social sectors:**

The private sector has largely undermined greater investment in the social sectors so that they could exploit the business opportunities there. This is extremely short sighted since increased public expenditures on social sectors will not only lead to more employment but also more productive and better trained workers. There will be a positive externality.

#### **8. Poverty and lack of a living wage:**

Poverty has to be defined in terms of the 'social minimum necessary consumption' which can be called the 'living wage'. It changes over time. The economy has split into two circles. One of the well off 5% who are the real consumers and the rest who consume little. Thus, the growth of the economy depends on the former. But this sector hardly generates additional employment in spite of growth. So, elimination of poverty by granting everyone a living wage would set into motion a virtuous cycle of growth, equity and employment generation.

#### **9. Gender dimension of employment generation:**

Labour Force Participation Rate (LFPR) for women is much lower than for men. Globally, India has among the highest and most unequal gender division of unpaid work. Providing suitable work to women will go a long way in eliminating unemployment.

#### **10. Regional dimensions of unemployment:**

This is concentrated in the poorer states so equity will lead to more employment. This will also promote Federalism in the country.

#### **11. Globalization and loss of sovereignty:**

Capital is highly mobile and extracts concessions from society, like, weakening of labour, privatization of public sector and market friendly state intervention. All these have adversely impacted employment generation. Further, rich Indians want to globalize with the rich in the world, consequently, their emotional connect with India and its marginalized has diminished. Society's amnesia about the idea of equity follows the growing self-centeredness of the elite rulers. Globalization is resulting in an international division of labour with polluting production in the developing world. So, even though employment has increased due to polluting industries it is at the expense of the environment and the health of the workers.

## **Current macroeconomic situation: Unemployment a growing problem**

The present situation of high inflation and low growth is characterized as stagflation. For the marginalized, this is a double whammy. The situation has been further complicated by the war in Ukraine, China's zero-COVID policy and Central banks raising interest rates. Government's Solution Invisibilizes the Marginals.

Government has been implementing 'supply side' policies when the problem has been lack of adequate demand. What the ruling dispensation could not implement since 2014 due to the opposition was sought to be imposed on two vulnerable groups – the farmers and workers. Farm Bills and the new Labour code were imposed. These are continuing issues.

The invisibilization of the majority is both in data and policy. They feed into each other. For instance, the declining unorganized sector is proxied by the growing organized sector. So, the growth data is incorrect but policy works on it.

## **Employment and technology**



Technology plays a critical role in determining how much employment will be generated in society. Further, technology is changing at a rapid pace and due to weak R&D in India most of the technology is imported. This technology has a lower employment potential than the pre-existing technology in India and therefore results in growing unemployment.

**Technical Change and Social Policy:** Process of change due to technology is not costless for society or for the sections adversely affected. There is a need to evolve an appropriate mechanism for introducing technical change in society so that its social costs are shared by all.

Since new technology is largely being evolved in the advanced countries and it is appropriate to their needs but not necessarily good for a developing country like, India. Higher technology is supposed to lead to higher profitability of a company. But, the employment potential declines. So, those who import technology and reduce employment need to pay a tax which could be used to finance employment.

## **Elements of a full employment policy**



Achieving full employment cannot be a piecemeal approach. This requires policies that will sustain the new state of the economy. It requires drastic changes in the legal, socio-political and economic aspects of the nation. Some of the key required changes are discussed below. The details can be worked out at the time of implementation:

1. Legal/Constitutional aspects: A 'Right to Work' programme should be chalked out.
2. Socio-political aspects: Youth, farmers, workers, middle classes, women, marginalized sections, etc. should be mobilized to support the proposals.
3. General economic aspects: The changes will result in inflation. So, those who are not indexed to inflation will lose purchasing power. The question will be how much inflation can the system tolerate? If investment becomes buoyant growth will rise. If the black economy gets curtailed, there will be higher efficiency and greater growth and equity.
4. Changes in production structures: As the incomes of the presently marginalized people rises, demand for food and mass consumption items will rise. Demand for semi-durables will also rise to an extent. Demand for the inessentials will rise little. Thus, the structure of production in the economy will change and it will have lower import intensity.
5. Agriculture the biggest employer - What Reforms? If workers in Agriculture get a living wage instead of the paltry wage they get at present, this will increase demand for food and mass consumption items as mentioned above. Declaration of MSP for all crops, based on full cost will help in ensuring higher prices for farmers. So, the incomes of both farmers and workers will rise. This will spur demand for non-agriculture and employment in small and micro sectors. Migration to urban areas will be stemmed. The need for expensive urban infrastructure will decline.
6. Social sectors and services: There is need to rapidly increase investment in social sectors. Since they are labour intensive they will generate much employment. Public expenditure on education should be increased to at least 6% of GDP and on health at least 3% of GDP. Physical infrastructure in the country is weak, especially in the rural areas. This needs investment. Allocation to MGNREGS should be increased to at least 1% of GDP. An Urban Employment Guarantee Scheme needs to be started for the unemployed youth. Budgetary allocations for infrastructure should focus on small local projects rather than big infrastructure projects.

7. Financial services: These play an important role in development. Most of the micro sector and a large part of the farming community depends on the informal markets where the interest rates are high. Self-help groups and micro banking with regulation will help. The banking sector is also a means of siphoning out of funds from the backward to the more advanced parts of the economy and this needs correction.

8. Construction and trade sectors: After agriculture, these are currently the big employers. But their traditional labour intensive mode is being displaced by the automated ones. Public distribution (PDS) has to be strengthened so that prices can be kept in check. Local markets in villages (haats) and near slums in urban areas (weekly markets) need to be systematically promoted. Less capital intensive projects will take longer time to construct but the priority should be employment. A judicious mix of projects would be required.

9. Industry: It has many backward and forward linkages and needs to be promoted, especially in the MSME rather than the big sector. Industries that need to be specifically promoted should be determined by the amount of employment they can create. In these industries also, employment creation should determine the choice of technology. Production in the public sector (PSUs) should be encouraged, especially in critical items. They need autonomy in functioning with accountability to parliament. A strong public sector is also an aid to policy makers and the marginalized during a crisis, as was seen during the pandemic.

10. Reducing import intensity of production: Essentials being less import intensive would require lower amount of imports and more of local inputs. Inessentials, like private four wheel vehicles are import intensive. Their production needs to be discouraged. One mechanism that is leading to greater import intensity is the increasing use of foreign consultancy firms and experts from the international financial agencies. The Liberalized Remittance Scheme (LRS) should be stopped to conserve foreign exchange and stop the flight of capital. India is large enough to work out an alternative path of development which is not autarkic but based on its own special needs.

11. Boosting the tribal economy: Tribals are one of the most deprived section of Indian population whereas they are capable of being highly self-sufficient. If promoted appropriately, they will not need outside support in employment generation.

### **Resources needed for full employment in five years**

Numbers here are indicative. Currently Organized sector workers are 30 million Unorganized sector workers are 398 million. Currently proper work available to 428 m – urban unemployed 9 m – disguised unemployed 19m – under employed 24 m – MGNREGS 36 m 304 million. So, we need work for urban unemployed (9 m) + Disguised unemployed (19 m) + Under employed (24 m) + MGNREGS (36 million) 88 million. Add the missing from Labour Force (190m). Total needing work is 278 million.

To begin with, leave out MGNREGS and under employed 60 million. So, immediately work required is for 218 million 10 At Rs.200/day for 310 days per person need Rs.62,000 per person per annum (about 30% of current per capita annual income).

For 21.8 crore people need per annum Rs.13.52 lakh crore % of GDP of Rs.270 lakh crore 5.0% of GDP. Over 5 years, annual increase in expenditure would be 1% of GDP

### **Financing full employment:**

- Resources are not Short: Often the argument against full employment is that resources are not there. But full employment means full utilization of resources and that will generate more resources in the economy. GDP would rise by 15.5% (half of the production in the non-agriculture unorganized sector). This does not take into account the second round increase in GDP as demand increases in the economy. Even the organized sector incomes would increase. So, achieving full employment would be self-financing.

If there is shortage of resources it is for the consumerism of the rich and upper classes (say 5% of the population) and not the basic needs of the majority. So, it is the political will that is missing to solve the problems of the marginalized and of employment. Could this scheme of full employment trigger flight of capital and flight of the rich to off shore? It is likely. To minimize the impact on the financial markets, policy makers would have to put in place controls on capital account movements.

- Tax Reforms to raise resources: Direct taxes are not inflationary and can get the government much tax revenue. Currently at 6% of GDP, India collects one of the least amount of direct taxes. At a conservative estimate the changes suggested here would yield another 6% of GDP. Additional amounts can be collected through checking black incomes and bringing them into the tax net.

Indirect Taxes are inflationary and regressive. They need to be reduced to lower the direct burden of the tax on the marginalized. GST needs to be reformed by removing it on inputs and essentials. The proposed reform will remove the current disadvantage that the unorganized sector faces and that will revive it which will lead to greater employment generation. To curtail luxury consumption in the economy a cess may be levied on such items. Indirect taxes should be cut by 5% of GDP to begin with. Cess on luxuries should raise about 2% of GDP.

- Demand changes: Impact on Tax Collections: Yes, there will be an impact, as production of higher taxed items will stagnate while other items at lower rates of tax or nil tax will grow.

Reform of Expenditures: The budget expenditures reflect the priorities of the government. There will be direct and indirect effects of expenditures on employment generation. All the three tiers of government need to be taken into account and not just the Central government's budget. The Report presents the expenditure priorities that need to be followed.

- Check black incomes: Redeploying Resources: Black incomes are outside the tax net. This reduces the government's resources for development. At the current rates of direct and indirect taxes it could yield an extra 24% of tax revenue. This would provide all the resources needed for the above mentioned essential expenditures. The steps required to check it were proposed in the Alternative Budget, 1994-95.



## **Alternative towards resolution**

- Moving towards job oriented sustainable growth: For this policy paradigm requires a change and just a few initiatives here and there will not be able to alter the situation. Tinkering only shifts the problem from one front to the other.

**Globalization Related Issues:** Marketization poses a twin challenge. Not only does it promote marginalization of the marginals but also encourages consumerism. Markets fail and that is why there is need for government intervention. Markets not only do not guarantee full employment, especially in the short run, they also want unemployment to prevail so that labour is kept weak.

- Rapid technical change: Technology is proving to be the enemy of full employment. Its introduction in society will need to be calibrated so that the problem of unemployment can be tackled over time. Further, it is constantly changing so there cannot be a one shot resolution. Presently, globalization is forcing choice of technology since the economy has become an open economy and capital is highly mobile. While technology adoption in the country may be moderated, R&D development will have to be given top priority so that India remains abreast of developments in technology. For achieving full employment, the Report suggests reducing the degree of globalization.

- Holistic approach required: This Report suggests the glide path that would be required. There will be resistance from the currently entrenched elite rulers. The Report suggests the need for socio-political-economic movements to change the consciousness of citizens to accept the 'Right to Work'. There is need to create the wider consciousness among people about the highly adverse employment situation. Ultimately the political and social forces in society would be the deciding factors and that would require strong support for the proposals from the marginalized sections.

## **Conclusion**

The unemployed are the losers and a victim of the system put in place and not because they are lazy or undeserving as the gainers try to project to justify their own gains. The proposals in the Report will be segregated into those that can be implemented in the short, medium and long term. Together they will set into motion a paradigm shift in policies but some immediate relief will have to be provided for the marginalized sections.

Increasing employment will result in greater production as well as in increase in demand. The shortage of resources for achieving full employment is an invalid argument since it can be self-financing. This runs counter to the elite perception that full employment would be a negative sum game for them.

It is pointed out that at present about 304 million workers have proper work while 278 million are in one of the four states of unemployment mentioned in the Report. So, even at a low level of productivity they can add 16% to the GDP and the growth rate of the economy will rise. If a workable alternative to the present system imposed by international finance capital is worked out in India, it can be a model which other developing nations can also follow. Achieving a more civilized and democratic society through moving toward full employment is feasible and in the hands of the nation. Let us together move to fulfill this dream.

# **Environment, Natural Resources and Sustainability:**

## **Problems and management of soil health in India**

**Jeet Singh, Fellow, RGICS**

Soils are home to an estimated 25% of the world's biodiversity and merely a teaspoon of healthy soil contains about one billion microorganisms. This richness of the soils is the foundation of life on the earth. Apart from agriculture the top soil is valuable for many other purposes such as construction materials, grasslands and forests. The erosion of topsoil and soil contamination leads to decline in productivity of land in terms of biodiversity. The soil degradation is caused by various factors including adverse climatic conditions and human induced factors such as chemical farming, pollution and deforestation. According to Navdanya Foundation, "industrial chemical agriculture has destroyed soil fertility; depleted the water holding capacity of soil; destroyed the biodiversity that provides food and nutritional security and protects the soil and contributed to 40% of the GreenHouse Gases that are causing climate change."<sup>[1]</sup>

Arresting rapid erosion of soil is highly crucial for countries like India which is second most populous country and second largest producer of food and agriculture. Most people in India are still dependent on agriculture and livestock for their lives and livelihood. Healthy soil is not only important for producing healthy food but also to combat adverse impacts of climate change. The blend of high population, high agricultural production and diverse agro-climatic conditions creates more pressure on land which results in rise in risks related to land degradation.

According to a latest survey by Space Application Centre, Ahmedabad, 97.85 million hectare of India's landmass which accounts for 29.77% of the total geographical area of the country is under degradation and desertification. Compared to the survey conducted in 2003-04 the land under degradation has increased from 94.53 mha to 97.85 mha.

### **PROCESS WISE CHANGES IN DESERTIFICATION/ LAND DEGRADATION STATUS**

Process of Desertification/ Land Degradation	2018-19		2011-13		2003-05		Change (mha)	
	Area (mha)	Area (%)	Area (mha)	Area (%)	Area (mha)	Area (%)	(2018-19)-(2011-13)	(2011-13)-(2003-05)
Vegetation Degradation	30.07	9.15	29.30	8.91	28.28	8.60	0.78	1.01
Water Erosion	36.20	11.01	36.10	10.98	35.61	10.83	0.10	0.49
Wind Erosion	17.94	5.46	18.23	5.55	18.35	5.58	-0.29	-0.11
Salinity	3.64	1.11	3.67	1.12	4.01	1.22	-0.03	-0.32
Water Logging	0.81	0.25	0.65	0.20	0.60	0.18	0.15	0.05
Frost Shattering	3.47	1.05	3.34	1.02	3.11	0.95	0.12	0.23
Mass Movement	0.94	0.29	0.93	0.28	0.84	0.26	0.01	0.08
Manmade	0.64	0.19	0.41	0.12	0.37	0.11	0.23	0.04
Barren/Rocky	1.87	0.57	1.89	0.57	1.88	0.57	-0.02	0.00
Settlement	2.27	0.69	1.88	0.57	1.48	0.45	0.39	0.40
<b>Total Area under Desertification</b>	<b>97.85</b>	<b>29.77</b>	<b>96.40</b>	<b>29.32</b>	<b>94.53</b>	<b>28.76</b>	<b>1.45</b>	<b>1.87</b>
<b>No Apparent Degradation</b>	<b>225.06</b>	<b>68.46</b>	<b>226.73</b>	<b>68.97</b>	<b>228.68</b>	<b>69.57</b>	<b>-1.67</b>	<b>-1.95</b>
<b>Total Geographical Area (mha)</b>					<b>328.72</b>			

Source: [https://vedas.sac.gov.in/static/atlas/dsm/DLD\\_Atlas\\_SAC\\_2021.pdf](https://vedas.sac.gov.in/static/atlas/dsm/DLD_Atlas_SAC_2021.pdf)

Land degradation and desertification in India is majorly caused by vegetation degradation, water erosion and wind erosion. These three factors together contribute to the degradation of more than 84 mha land mass of the country. Other than the above estimate of land degradation, there have been several other estimates using different methodologies to calculate land degradation in India.

#### Assessment of land degradation in India by different agencies/organizations

Agencies/Organizations	Year	Area (million hectares)
National Commission on Agriculture	1976	148.09
Ministry of Agriculture (Soil and Water Conservation Division)	1978	175.00
National Remote Sensing Agency (NRSA)	1985	53.28
Ministry of Agriculture	1985	173.64
Ministry of Agriculture	1994	107.43
ICAR-National Bureau of Soil Survey and Land Use Planning (NBSS&LUP)	1994	187.70
ICAR-NBSS&LUP (Revised)	2004	146.82
Indian Council of Agricultural Research, National Academy of Agricultural Sciences (NAAS) based on harmonized database	2010	120.70
Space Applications Centre (SAC), Indian Space Research Organization (ISRO), Ahmedabad (based on Indian Remote Sensing Satellite (IRS) Advanced Wide Field Sensor (AWFiS) data	2016	96.40
Department of Land Resources in collaboration with the National Remote Sensing Centre (Wastelands Atlas of India)	2019	55.77

Source: <https://pib.gov.in/PressReleasePage.aspx?PRID=1810912>

The first official assessment on land degradation was conducted in 1977 by the National Commission on Agriculture. It estimated that 148.09 mha of landmass was under degradation. Several other agencies have since then assessed land under degradation. These assessments are way different from one another because of the different methodology and technology adopted by each agency. The assessment conducted by National Academy of Agricultural Science (NAAS) in 2010 estimated cultivable land under soil erosion. As per this estimate 92.4 mha cultivable land in India is threatened by soil erosion.

#### **Soil health and agricultural production:**

The top most layer of earth's crust is known as soil and it is formed due to several physical, organic and chemical processes. The soil is an important terrestrial resource like water, which is largely neglected. The good health of soil is not only important for the high value crop production but also important for sustenance of ecosystem services. Humans worldwide obtain more than 99.7% of their food from the soil. Further the ever deterioration of soil health across the globe has reduced the productivity of all natural ecosystems such as agriculture, water availability, forest and pasture ecosystems. The reduced productivity of ecosystems has also affected the nutrition level of human beings. According to an estimate today around 66% of the world population is malnourished.<sup>[2]</sup> Therefore, for the wellbeing of human, wildlife and various other ecosystems keeping good health of soil is important.

The term soil health refers to properties of soil and critical function of the soil. J.W Doran and his colleagues in 1996 defined soil health as "the continued capacity of soil to function as a vital living system within ecosystem and land-use boundaries, to sustain biological productivity, maintain the quality of air and water environments, and promote plant, animal and human health." Major functions of soils related to agriculture are infiltration and storage of water, retention and cycling of nutrients, pest and weeds suppression, detoxification of harmful chemicals, carbon sequestration and production of food and fibre.<sup>[3]</sup>

### Extent of Soil Erosion in India

Sl. No.	Degradation type	Arable land (Mha)	Open forest (Mha)
<b>Soil Erosion</b>			
1	Water erosion	73.27	9.30
2	Wind erosion	12.40	
	<b>Sub-total</b>	<b>85.67</b>	<b>9.30</b>
<b>Chemical Degradation</b>			
3	Exclusively salt affected soils	5.44	
4	Salt affected and water eroded soils	1.20	0.10
5	Exclusively acidic (pH <5.5)	5.09	
6	Acidic (pH <5.5) and water eroded	5.72	7.13
	<b>Sub-total</b>	<b>17.45</b>	<b>7.23</b>
7	Physical degradation	1.07	
	<b>Total</b>	<b>104.19</b>	<b>16.53</b>
	<b>Grand total</b>	<b>120.72</b>	

Source: <https://icar.org.in/files/Degraded-and-Wastelands.pdf>

The Indian Council of Agricultural Research and National Academy of Agricultural Sciences in 2010 published a detailed data set on soil erosion and major factors affecting soil health. The data set reveals that nearly 86 mha of the arable land is deteriorating due to water and wind erosion. Further more than 17 mha of arable land is deteriorating due to chemical degradation. In total 120.72 mha of arable land and open forest is under soil erosion due to various factors.<sup>[4]</sup>

Scientists associated with ICAR A.K. Patra, N.K. Lenka and A.K. Biswas in one of their research papers published in 2015 listed the following five major causes of soil health deterioration in India.<sup>[5]</sup>

Wide spread soil erosion: soil erosion is a major cause of deterioration of soil health. According to an estimate of ICAR in 2010, out of 143 mha of arable land 104 mha land is eroded.

Imbalance nutrient use: Both in high and low fertilizer using regions, the imbalanced use of fertilizer is common. The N:P:K ratio is currently at 8.0:2.7:1 as compared to the ideal level of 4:2:1. This nutrient imbalance has aggravated over the decades from 7.9:0.9:1 in 1951-52.

Change in land-man ratio: Due to intensification in agriculture the food production in India has increased by five times. This has happened due to fertilizers, high yielding cultivars, pesticides and irrigation. This has immensely increased the pressure on agriculture land leading to deterioration of soil health.

Nutrient mining: The cultivation of crops leads to extraction of soil nutrients. The replenishment of the harvested nutrient is necessary for the maintenance of soil fertility. Nutrient mining is referred to as an imbalance between removed nutrients during crop cultivation and quantity of nutrient added to the field. The nutrient mining is also responsible for high imbalance of NPK in India.

Reduced use of organics: organic fertilizers such as compost are important for maintenance of soil nutrients. However, Indian agriculture has increasingly relied upon chemical fertilizer over time.

Agriculture contributes around 17-18 percent to national GDP and more than 58% of India's population is dependent on agriculture and allied occupation. To feed healthy food to all and ensure economic security for more than 58% of the population of India, soil health is important. A group of scientists published a paper in July 2022 in Science Direct reveals that more than 70% of soil in India suffers either from acidity or alkalinity<sup>[6]</sup>. The continuous deterioration of soil health in India leading to deficiency in plant nutrients and large scale malnutrition in the country.

### **Soil health management:**

The soil health is directly connected with the plant and animal health. It further affects human health. All these together contribute to the environmental health and health of the planet. The United Nations Convention to Combat Desertification (UNCCD) recognizes these interrelationships originated from soils and recommends three broad principles to manage soil health. According to the UNCCD the first principle of the sustainable management of soil is protection of the natural ecosystem. This principle provides for restoring the pristine state of natural wealth. The second principle is to manage land that is under cultivation through sustainable agricultural practices. The third principle suggested by UNCCD is to restore land that is already deteriorated through right incentives to farmers, new technology and tools.

The UNCCD further suggest 10 point soil health management guidelines as follows:<sup>[7]</sup>

- 1- Minimize soil erosion
- 2- Enhance soil organic matter content
- 3- Foster soil nutrient balance and cycles
- 4- Prevent, minimize and mitigate soil salinization and alkalinisation
- 5- Prevent and minimize soil contamination
- 6- Prevent and minimize soil acidification
- 7- Preserve and enhance soil biodiversity
- 8- Minimize soil sealing
- 9- Prevent and minimize soil compaction
- 10- Improve soil water management

The UNCCD further argues that these strategies can be modified and improved based on local conditions and requirements. A group of three scientists of ICAR namely A.K. Patra, N.K. Lenka and A.K. Biswas in their paper published by Indian Journal of Fertilizer in 2015 suggested a fivefold approach to manage soil health in India. These approaches are as follows:<sup>[8]</sup>

**Soil health assessment-** soil health assessment is to detect soil productivity through measurement of key physical, chemical and biological properties of soil.

**Containing nutrient mining-** The balanced NPK ratio is important to harvest crops high in nutrients. To ensure availability of NPK in the field for next harvest must be met through organic and non-organic manure. Adequate amounts of manure/fertilizer will help in containing nutrient mining.

**Balanced fertilization and increasing fertilizer use efficiency-** Access use of chemical fertilizer has adversely affected soil health across the country. Therefore mechanisms need to be developed to balance fertilization and ensure fertilizer efficiency.

**Maintaining soil physical structure-** physical structure of soil can be improved by organics and crop residue. Such in-situ practices need to be conserved and promoted.

**Reducing soil erosion loss-** In-situ techniques of keeping soil physical structure and methods of soil reclamation may be promoted and incentivized.

### **Reclamation of problem soils scheme:**

About 50% irrigated land in arid and semi-arid regions has some degree of soil salinization problem. The access accumulation of salt/acid is known as problem soil (alkali, saline, acid). According to the ICAR estimate there is 24.36 million hectare of problem soil across the country. For the reclamation of the problem soil the government of India has launched the 'Reclamation of Problem Soils' as a sub scheme under the Rashtriya Krishi Vikas Yojana. This scheme adopts following strategies to reclaim the problem soil:<sup>[9]</sup>



### **Reclamation and development of alkali, saline & acid soils in contiguous manner:**

Implementation of various need based land improvement interventions like, peripheral/marginal bunds, check bunds, hydraulic sluice gate, surface and subsurface drainage systems, farm ponds/water harvesting structures, on farm development, prevention of water logging by construction of bioengineering measures for prevention of ingress of sea water;

Application of soil amendments, leaching of salt by allowing water impounding with conserved rain water and ensuring sustainability of reclaimed areas by continuous cultivation of recommended salt tolerant crop varieties;

Capacity building of farmers for continuous cultivation of salt tolerant crops/horticultural crops along with soil test based judicious application of fertilizers and micro nutrients to prevent reoccurrence of such problem soils; and

Adoption of a definite withdrawal strategy for maintenance of the drainage network & other assets created to ensure the production system is sustainable.

The Reclamation of Problem Soils scheme was started in financial year 2016-17 and as of financial year 2020-21 an amount of Rs. 58.76 crore (share of union government) was released to state governments. In this period about 0.24 lakh hectare agricultural land has been developed. Moreover bio-engineering soil and water conservation measures, watershed management interventions, soil reclamation measures for saline, alkali, waterlogged and acid soils, selection of suitable crop and such other activities have been carried out under the scheme.<sup>[10]</sup>

## **Conclusion:**

The process of soil formation is long and complex but once it is formed the physical, chemical and organic processes within soils creates a more complex ecosystem. A living soil is the soil which has maintained all these processes. Living soil is thus the foundation of life on the earth. The living soil provides almost all our food calories, regulates water supplies, supports biodiversity and helps in stabilizing the global climate.<sup>[1]</sup> Despite its huge importance like water, the soils remain a neglected resource.

The latest data released by the Space Application Centre in 2021 reveals that more than 29% of the total geographical area is facing serious problems of land degradation and desertification. There are a number of ways by which soil health is deteriorating. Soil erosion is a major factor that affects the health of the soil. Factors such as water, wind, overgrazing and poor agricultural practices lead to the erosion of soil.<sup>[12]</sup> Soil deterioration is also caused by excessive use of chemical fertilizers/pesticides, mono-cropping, acid rain and water pollution.

The first policy attempt to manage soil health was made in 1920 by the British administration through launching 'Soil and Moisture Conservation Programmes'. After independence various five-year plans stressed on the importance of combating soil erosion and land degradation.<sup>[13]</sup> In the decade of nineties the government of India launched the 'National Watershed Development Project for Rainfed Areas (NWDPRA)' project to combat soil erosion through watershed development approach. Moreover, in 2006 onward watershed management activities were integrated with MGNREGA.

While there have been some attempts at the level of public policy to conserve soils and combat degradation and desertification of land, yet more attention is required to maintain soil health. India's Prime Minister Mr. Narendra Modi in his speech in COP 14 of UNCCD in 2019 committed that India will restore 26 million hectare degraded land from 2019 to 2030.<sup>[14]</sup> To achieve this ambitious goal, India has to accelerate its speed and enhance the scale of activities related to management of soil health.

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[1] <https://www.navdanya.org/living-soil/what-is-soil>

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[4] <https://icar.org.in/files/Degraded-and-Wastelands.pdf>

[5] [https://www.researchgate.net/publication/289538576\\_Soil\\_Health\\_Assessment\\_and\\_Management\\_Issues\\_and\\_Strategies](https://www.researchgate.net/publication/289538576_Soil_Health_Assessment_and_Management_Issues_and_Strategies)

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[9] [https://agricoop.nic.in/sites/default/files/rps\\_guidelines%20%282%29.pdf](https://agricoop.nic.in/sites/default/files/rps_guidelines%20%282%29.pdf)

[10] <https://pib.gov.in/PressReleasePage.aspx?PRID=1810912>

[11] [https://www.unccd.int/sites/default/files/2022-10/AG2\\_Soil%20Health\\_final%20for%20web.pdf](https://www.unccd.int/sites/default/files/2022-10/AG2_Soil%20Health_final%20for%20web.pdf)

[12] [http://clubofrome.in/downloads/Booklet\\_on\\_Forests\\_Land\\_and\\_Soils\\_for\\_All\\_CoR.pdf](http://clubofrome.in/downloads/Booklet_on_Forests_Land_and_Soils_for_All_CoR.pdf)

[13] <https://india.mongabay.com/2022/06/commentary-100-years-of-saving-indias-soil-what-needs-to-change/>

[14] <https://pib.gov.in/PressReleasePage.aspx?PRID=1584542>

# **India's Place in the World: Amid bilateral chill, India-China trade marks record surge in 2021**

Karunjit Singh<sup>4</sup>



Source: <https://images.indianexpress.com/2022/01/trade.jpg>

DESPITE INDIA'S efforts to reduce dependence on imports from China amid an increased emphasis on self-reliance as well as escalating tensions along the border, [bilateral trade grew 43.3 per cent in 2021](#) — a year that marked a record high in exports to and imports from China, according to Chinese government data.

India's imports from China rose to \$97.5 billion in the calendar year 2021, up 46.1 per cent from \$66.7 billion in 2020, which was impacted by Covid restrictions, as per data from the China General Administration of Customs. Imports in 2021 were up 30.3 per cent over 2019.

India's exports to China also grew to a record high of \$28.1 billion in 2021, up 34.9 per cent from \$20.9 billion in 2020. Exports to China in 2021 were 56.5 per cent higher than in 2019.

According to the data, India's total trade with China in 2021 was worth \$125.7 billion.

The sharp uptick in imports on a large base has pushed India's trade deficit with China to a record high \$69.4 billion in 2021, up from \$45.9 billion in 2020 and \$56.8 billion in 2019. The record high trade numbers between India and China in 2021 come even as the militaries of both countries have been unable to resolve the protracted boundary dispute despite 14 rounds of border talks.

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<sup>4</sup> Source: <https://indianexpress.com/article/business/economy/amid-bilateral-chill-india-china-trade-marks-record-surge-in-2021-7741805/>

The widening trade deficit, with India's imports from China now nearly four times its exports in value terms, is a cause for concern, too, alongside the fact that India's export basket comprises mainly primary goods while imports from China are dominated by value added items.

According to data from the Union Commerce Ministry, China was India's second largest trading partner in the April-November period, after the US. The UAE, Saudi Arabia, Iraq and Hong Kong were the other top trading partners for India during the period. India's official statistics on bilateral trade with China are updated only till November 2021.

Some of India's key imports from China include smartphones, components for smartphones and automobiles, telecom equipment, plastic and metallic goods, active pharmaceutical ingredients (APIs), and other chemicals.

The sharp increase in imports has come despite moves by the Centre to hike tariffs on key imports from China, including components for electronic goods such as smartphones. The Government has, in the past two fiscals, hiked import duties on printed circuit board assemblies, mobile charger components, display assemblies and other components used in the assembly of smartphones in India.

Experts have pointed out that players in the Indian electronic goods space were still largely focussed on the assembly of products and did not have much discretion in sourcing of components.

Officials at the Commerce Ministry had said earlier this fiscal that growth in India's trade with other key trading partners, including the US, UAE and Australia, was even higher than that with China. India is currently in the process of negotiating Free Trade Agreements (FTAs) with the UAE, EU, UK and Australia.

Raw material exports constituted a significant portion of India's outbound trade with China, with iron ore, organic chemicals and cotton figuring among key export items. Other key exports to China included iron and steel, seafood and engineering goods.

The increase in trade comes despite moves by the Government to reduce India's dependence on Chinese imports after clashes between troops of both countries along the Ladakh border.

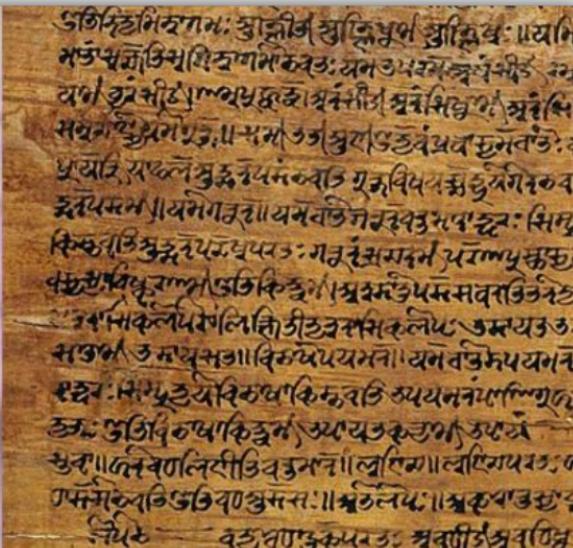
In June 2020, 20 Indian soldiers and several Chinese troops were killed in a violent border clash in Ladakh's Galwan Valley. Soon after, the Union Power Ministry imposed a de facto ban on the import of power equipment from China, citing cybersecurity concerns. The Government also asked state-owned telecommunication companies, BSNL and MTNL, to exclude Chinese telecom equipment firms, including Huawei and ZTE, from its network upgrading process.

The Centre thereafter blocked social media app TikTok and 58 other Chinese apps in India, calling them "prejudicial" to India's sovereignty, integrity and national security. Other apps that were banned include We Chat, Alibaba's UC Browser, Club Factory, and PUBG mobile. The blocks were converted into permanent bans by the Ministry of Electronics and Information Technology (MeitY) in 2021.

The Government also modified foreign direct investment (FDI) rules, making its approval a must for any FDI in Indian firms from neighbouring countries — apparently aimed at preventing opportunistic takeovers of domestic firms by Chinese companies during the pandemic.

India has also tightened its watch on dumping of goods from China in the domestic market. In December 2021, India imposed anti-dumping duties on five Chinese products, including certain aluminium goods and chemicals, for five years to protect local manufacturers.

# Indian Student, who received a scholarship from Rajiv Gandhi Foundation to study at the Cambridge University, Solves a 2,500-Year-Old Sanskrit Puzzle



Mr Rajpopat, is a PhD student at the faculty of Asian and Middle Eastern Studies in St. John's College, Cambridge.

An Indian Ph.D. student at the University of Cambridge has finally solved a [Sanskrit grammatical problem](#) that has baffled scholars since the 5th century BC. 27-year-old Rishi Atul Rajpopat, reportedly decoded a text written by the Sanskrit language master Panini, a master of the ancient Sanskrit language who lived around two-and-a-half-thousand years ago, according to a report by [BBC](#).

Notably, Mr Rajpopat, is a PhD student at the faculty of Asian and Middle Eastern Studies in St. John's College, Cambridge.

According to Independent, Panini taught a "metarule" which is traditionally interpreted by scholars as meaning: "in the event of a conflict between two rules of equal strength, the rule that comes later in the grammar's serial order wins". However, this often led to grammatically incorrect results.

This traditional interpretation of the metarule was rejected by Rajpopat with the argument that Panini meant that between rules applicable to the left and right sides of a word respectively, Panini wanted us to choose the rule applicable to the right side. He concluded that Panini's "language machine" produced grammatically correct words with almost no exceptions.

"I had a eureka moment in Cambridge. After nine months of trying to crack this problem, I was almost ready to quit, I was getting nowhere. So I closed the books for a month and just enjoyed the summer, swimming, cycling, cooking, praying, and meditating. Then, begrudgingly I went back to work, and, within minutes, as I turned the pages, these patterns started emerging, and it all started to make sense," he told the Independent. It took him another two years to solve the problem.

Elated at the news, Prof Vergiani said, "My student Rishi has cracked it - he has found an extraordinarily elegant solution to a problem which has perplexed scholars for centuries. This discovery will revolutionise the study of Sanskrit at a time when interest in the language is on the rise."

Sanskrit is only spoken in India by an estimated 25,000 people out of a population of more than one billion, Cambridge University said.



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INSTITUTE FOR CONTEMPORARY STUDIES

### **Rajiv Gandhi Institute for Contemporary Studies**

Jawahar Bhawan,  
Dr Rajendra Prasad Road,  
New Delhi 110 001  
India

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