

Justice System and Jail Overflow

CS 752: System Dynamics

by

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Chapter 1

Introduction

To acquire wealth: Make the people prosper;
To make people prosper: Justice is the means.
O Kirti Narayana ! They say that justice is the treasury of kings
- *Baddena 12th - 13th C*

The justice system is a fundamental aspect of any society. It is designed to maintain law and order by enforcing laws and punishing those who violate them. However, one of the most significant challenges faced by the criminal justice system globally is the issue of prison overcrowding. Overcrowding in prisons is a problem that is more often a consequence of the way criminal justice is administered rather than a result of rising crime rates. The overuse of pre-trial detention, along with strict sentencing practices, are two of the main contributory factors. The problem of overcrowding undermines the ability of prison systems to meet the basic needs of prisoners, such as healthcare, food, and accommodation. This not only endangers the basic rights of prisoners, including the right to have adequate standards of living and the right to the highest attainable standards of physical and mental health but also creates several problems for prison administration. It causes severe strain on essential services, results in serious health hazards, and disrupts penal reformation and rehabilitation programs. Therefore, addressing prison overcrowding is a complex problem that requires a multi-faceted approach.

1.1 Understanding Prison Overcrowding

Prison overcrowding is a situation where the number of prisoners in a correctional facility exceeds its authorized capacity. According to the National Crime Record

Bureau, as of December 31, 2008, there were 384,753 prisoners in various prisons of India against its total authorized capacity of 297,777 prisoners. Out of this, the number of undertrial prisoners was 257,928, which constitutes 67 of the total prison population. The prison in India is overcrowded to the extent of 129. The primary cause of prison overcrowding is the excessive use of pre-trial detention. In India, the vast majority of those in prison are undertrials, who are awaiting trial or have not been convicted of any crime.

1.2 Challenges Faced by Overcrowded Prisons:

Overcrowded prisons face several challenges, which include security problems, severe strain on essential services, serious health hazards, and disruption of penal reformation and rehabilitation programs. Overcrowding also makes the segregation of hardened criminals and their separation from mild offenders impossible, which further increases the risk of violence.

Prison overcrowding also compels prisoners to be kept under conditions that are unacceptable to the United Nations Standard Minimum Rules for the Treatment of Offenders to which India is a signatory. Overcrowding leads to cramped living conditions, inadequate sanitation facilities, and poor-quality food, which can have a severe impact on the physical and mental health of prisoners.

1.3 Factors Contributing to Prison Overcrowding

There are several factors that contribute to prison overcrowding. One of the primary reasons is the overuse of pre-trial detention. Pre-trial detention refers to the imprisonment of a person before their trial, where the accused is detained in jail due to the perceived risk of their flight or the commission of further offenses. Pre-trial detention is often used excessively in India, leading to a high number of undertrial prisoners in jails.

Another significant factor contributing to prison overcrowding is the strict sentencing practices. In India, the courts are known for handing out harsh sentences, even for minor offenses. This has led to an increase in the prison population, leading to overcrowding.

1.4 Addressing Prison Overcrowding:

Addressing prison overcrowding requires a multi-faceted approach. The government of India has taken several administrative and legislative measures to address the issue. The establishment of Fast Track Courts for expeditious disposal of long-pending cases, the introduction of the concept of plea-bargaining, the launch of the National Mission for Justice Delivery and Legal Reforms, and the creation of additional capacity of prisons through the Scheme of Modernisation of Prisons are some of the measures taken.

1.5 Prison Reforms in India

- The Supreme Court appointed **Justice Amitava Roy (retd.) Committee** has given the following recommendations to reform prisons.

– *For Overcrowding:*

Speedy Trial	Speedy trial remains one of the best ways to remedy the unwarranted phenomenon of overcrowding. Lawyer to Prisoner Ratio: There should be at least one lawyer for every 30 prisoners, which is not the case at present.
Special Courts	Special fast-track courts should be set up to deal exclusively with petty offences which have been pending for more than five years. Further, accused persons who are charged with petty offences and those granted bails, but who are unable to arrange surety should be released on a Personal Recognizance (PR) Bond.
Avoid Adjournment	An adjournment should not be granted in cases where witnesses are present and the concept of plea bargaining, in which the accused admits guilt for a lesser sentence, should be promoted.

– *For Prisoners:*

Accommodative Transition	Every new prisoner should be allowed a free phone call a day to his family members to see him through his first week in jail.
Legal Aid	Providing effective legal aid to prisoners and taking steps to provide vocational skills and education to prisoners.
Alternatives	The courts may be asked to use their "discretionary powers" and award sentences like "fine and admonition" if possible instead of sending the offenders to jails. Further, courts may be encouraged to release offenders on probation at pre-trial stage or after trial in deserving cases.

– *Filling Vacancies:* The Supreme Court should pass directions asking authorities to start the recruitment process against permanent vacancies within three months and the process should be completed in a year. *For Food:* Modern cooking facilities and canteens to buy essential items.

- In 2017, the Law Commission of India had recommended that undertrials who have completed a third of their maximum sentence for offences attracting up to seven years of imprisonment be released on bail.

Chapter 2

Background

Overcrowding in prisons has been a longstanding issue in India, and it is a problem that the government has been trying to address. In a directive issued by the Ministry of Home Affairs, the government has recognized that prison overcrowding undermines the ability of prison systems to meet the basic needs of prisoners, such as healthcare, food, and accommodation. Furthermore, it endangers the basic rights of prisoners and creates serious problems for prison administration, including security problems and severe strain on essential services.

According to the National Crime Record Bureau, as of December 31, 2008, there were 384,753 prisoners in various prisons in India against its total authorized capacity of 297,777 prisoners. This means that the prison system in India is overcrowded to the extent of 129%. The number of undertrial prisoners was 257,928, which constitutes 67% of the total prison population. The high number of undertrial prisoners is a major contributor to prison overcrowding.

According to an article (8), In 2016, it was discovered that many prisoners were unaware of the Section 436-A of the Code of Criminal Procedure, 1973, which stipulates that if the punishment for an offense is not death, and an individual has been detained for a duration equivalent to half of the maximum imprisonment period, then they are eligible for release on bail. However, in Out of 1,557 undertrial prisoners who were deemed eligible for release under Section 436A, only 929 were actually released. Furthermore, Amnesty India's research has revealed that prison authorities are often ignorant of this provision and disinclined to implement it.

To address this issue, an all-India Conference of Correctional Administrators was held in New Delhi on 8th-9th September 2010. One of the main topics of discussion was the issue of "Overcrowding- Reducing the number of undertrials." The participants strongly felt that the States need to take measures to reduce

overcrowding in prisons. The government of India has taken various administrative and legislative measures, such as the establishment of Fast Track Courts for expeditious disposal of long-pending cases, the introduction of the concept of plea-bargaining, launch of National Mission for Justice Delivery and Legal Reforms, and creation of additional capacity of prisons through the Scheme of Modernisation of Prisons.

The COVID-19 pandemic has further highlighted the need to address prison overcrowding in India. In response, the Supreme Court of India ordered the interim release of eligible prisoners in view of the uncontrolled second surge in the raging Covid-19 pandemic. The Court's order aims to decongest jails and protect the right to life and health of the prisoners.

Prison overcrowding brings with it a host of serious problems to prison administration. It not only creates security problems but also causes severe strain on essential services, results in serious health hazards, and disrupts penal reformation and rehabilitation programs. In overcrowded prisons, segregation of hardened criminals and their separation from mild offenders become impossible. Prison overcrowding compels prisoners to be kept under conditions unacceptable to the United Nations Standard Minimum Rules for treatment of offenders to which India is a signatory.

To address the issue of prison overcrowding, it is necessary to adopt a multi-faceted approach. Measures such as the establishment of Fast Track Courts for expeditious disposal of long-pending cases, the introduction of the concept of plea-bargaining, and the launch of National Mission for Justice Delivery and Legal Reforms can help in reducing the number of undertrial prisoners. Additionally, creating additional capacity of prisons through the Scheme of Modernisation of Prisons and the use of technology can help in addressing the issue of prison overcrowding in India.

In conclusion, addressing prison overcrowding is a complex problem that requires a multi-faceted approach. By addressing it, we can help to ensure that the justice system is fair, effective, and able to fulfil its important role in maintaining a safe and just society.

Chapter 3

Literature Review

The use of statistics to produce evidence and influence policy is becoming more common in India, thanks to increased data and technological availability, as well as the Right to Information Act of 2005. It is crucial to emphasise, however, that data can only tell part of the picture and can occasionally be misleading. For example, in 2017, Uttar Pradesh had a high percentage of police vacancies, but has since reduced these vacancies through recruitment efforts, resulting in a higher ranking in the police force. While statistics can provide useful information, they cannot fully account for cultural, attitudes, bias, and public perception.

In recent years, police forces in India have shifted from being keepers of law and order to frontline service providers during the pandemic. However, state police forces' capacities vary depending on indicators such as resource availability, staffing, diversity, budget allocation, and usage. In many states, rising vacancies, insufficient diversity, and poor accessibility continue to impede policing capacity. Diversity in the police force is not just a legal requirement, but it is also a practical necessity.

Prison funding continues to be a low priority for many Indian states, with most major and mid-sized states allocating between 3 and 5 percent of their overall budget to policing. However, depending on their circumstances, some states spend as much as 6-13

It is important to consider the limitations of relying solely on statistics when making policy decisions. While data can provide valuable insights, it is important to take into account other factors that can affect the implementation and success of policies. For example, cultural attitudes towards law enforcement, accessibility of resources, and public perceptions of the police can all play a role in determining the success of policing policies.

Furthermore, it is important to prioritize diversity in the police force. A diverse

police force can better reflect the population it serves and improve community relations, which can ultimately lead to more effective law enforcement. State governments must allocate sufficient resources towards recruitment and training programs that aim to diversify the police force.

It is essential to balance punishment and rehabilitation to ensure that the justice system is effective and fair. The key is to create a justice system perceived as legitimate by the public while effectively deterring crime, protecting human rights, and promoting the rehabilitation of offenders. The goal of rehabilitation is to create a justice system that is more effective and humane than simply punishing individuals for their past actions. By addressing the root causes of criminal behavior and promoting positive change, rehabilitation programs aim to reduce recidivism rates and prevent future harm to individuals and society.

In the Indian judicial system, Jail data shows that three out of four prisoners are acquitted criminals but are waiting for their trial and have been denied bail, which leads to prison capacity utilization above 100%. This demonstrates a significant shortage of courts and inefficiency within the judicial system. Another factor contributing to the inefficiency of the judicial system is the prioritization of certain cases. While there are millions of pending cases in court, it is a common occurrence for powerful politicians and individuals to influence court proceedings, resulting in expedited resolution of their cases while the cases of ordinary citizens languish for extended periods. Many individuals may find themselves incarcerated while waiting for their trial to commence, while powerful people can resolve their cases in weeks or months. This disparity underscores the issue of unequal treatment before the law, as well as the difficulties that those without access to authority or resources confront when navigating the legal system.

In terms of jail spending, states must devote adequate resources to ensure adequate living conditions and access to basic needs such as healthcare, food, and housing. Furthermore, prisons should prioritise rehabilitation programmes aimed at lowering recidivism rates and promoting successful reintegration into society.

In conclusion, while the use of statistics to develop evidence and educate policy is vital, other elements that can effect policy success must be considered. To maintain suitable living conditions and successful rehabilitation programmes, policymakers must prioritise diversity in the police force and give sufficient funding to prison spending.

Like IJR 2019, in most states, the increase in spending on these pillars of justice is not keeping pace with the increase in the size of the overall state expenditure. So, for example, the average 5-year increase in Bihar's police spend was 11.93%, while its overall expenditure increased 15.56%—a difference of -3.63 percentage points. In the graphic below, a higher rate of increase in allocation is highlighted in purple—as shaded boxes for IJR 2020 data and as upward arrows for IJR 2019 data.

■ Increase in pillar spend exceeds increase in total state expenditure

	Average difference in spend: pillar vs state (percentage points, FY '14-'18)			Performance in IJR 2019		
	Police	Prisons	Judiciary	Police	Prisons	Judiciary
Large and mid-sized states						
Bihar	-3.63	2.23	-6.54	↓	↑	↓
Chhattisgarh	-1.79	-1.68	-0.30	↓	↑	↓
Gujarat	1.53	-2.43	3.96	↓	↓	↓
Haryana	0.17	-1.12	-0.93	↓	↓	↓
Jharkhand	-4.75	0.83	-5.21	↓	↓	↓
Karnataka	-1.94	-6.69	-4.91	↓	↓	↓
Kerala	-0.88	-5.73	0.94	↑	↑	↓
Madhya Pradesh	-2.60	-7.25	-4.62	↓	↓	↓
Maharashtra	-1.87	-2.05	-1.95	↑	↑	↓
Odisha	-2.16	-6.05	-3.35	↓	↑	↓
Punjab	-1.33	-4.11	0.75	↑	↑	↑
Rajasthan	-4.47	-2.02	-4.71	↓	↓	↓
Tamil Nadu	-0.45	1.45	0.51	↓	↑	↓
Uttar Pradesh	-3.31	0.75	-3.75	↓	↓	↓
Uttarakhand	-0.32	-3.99	-4.26	↓	↑	↓
West Bengal	-3.21	-6.15	-6.36	↓	↓	↓
Small states						
Arunachal Pradesh	0.67	3.29	40.79	↑	↑	↑
Goa	4.43	-22.24	-1.10	↑	↑	↓
Himachal Pradesh	1.72	3.15	-1.00	↑	↓	↓
Meghalaya	2.44	2.2	32.04	↑	↑	↑
Mizoram	-6.15	110.22	-0.08	↓	↑	↓
Sikkim	-0.98	-5.43	3.49	↑	↑	↑
Tripura	0.74	-9.96	20.34	↓	↓	↓

Data source: Combined Finance and Revenue Accounts of the Union and State Governments in India, Comptroller and Auditor General of India; Open Budgets India
Note: Andhra Pradesh and Telangana are not included as their 5-year data was not available separately.

Figure 3.1: Budgets for the justice system (7)

Prison occupancy has increased in 25 states and Union Territories. Part of the reason is the high proportion of undertrials. In 35 of 36 states/UTs, they exceed 50% of inmates.

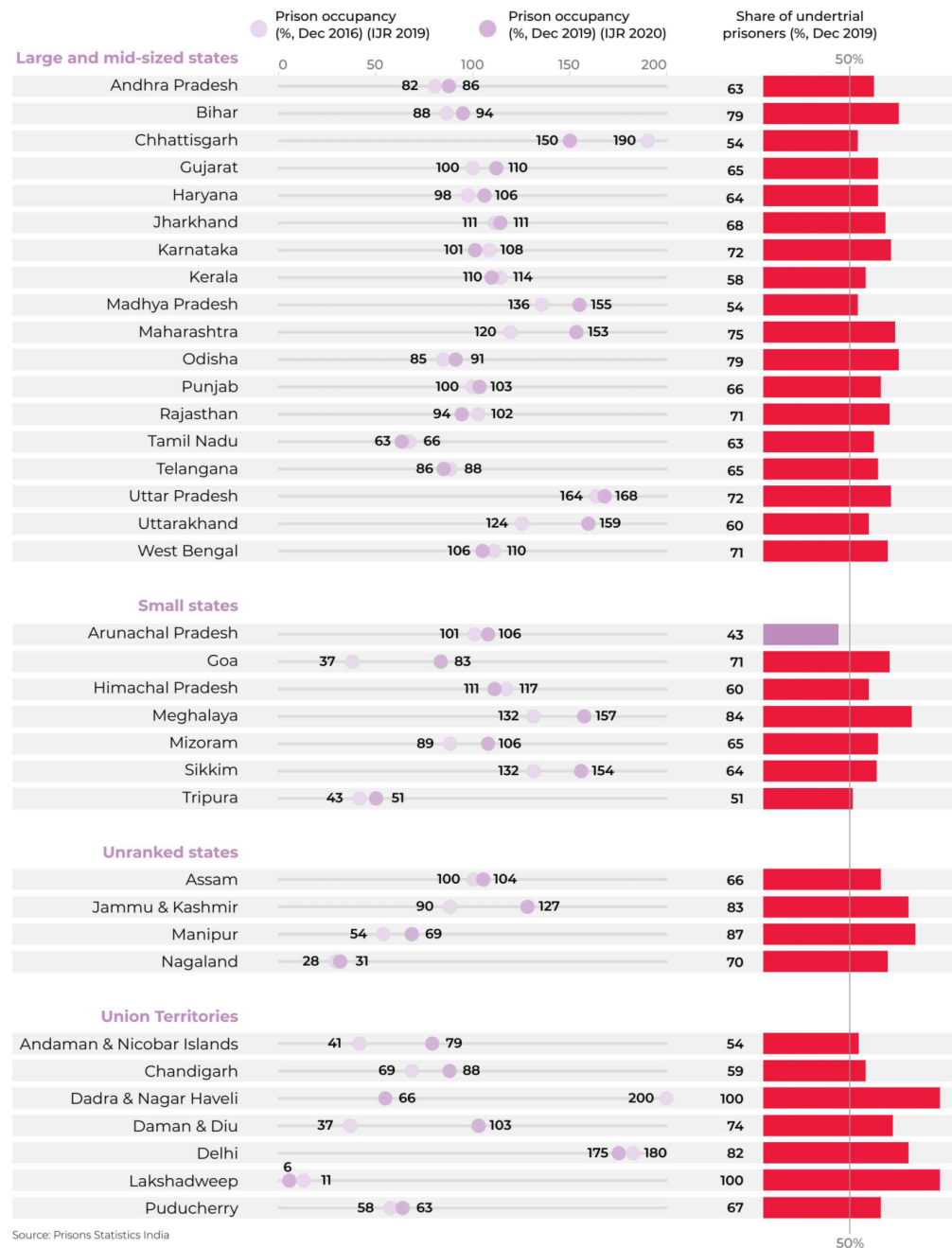


Figure 3.2: Prison occupancy goes up, along with undertrials (7)

At a glance - IPC Crimes over the years 1981 - 2021

S. No.	Year	Total IPC Crimes			S. No.	Year	Total IPC Crimes		
		Crime Incidence	Crime Rate	Charge-sheeting Rate			Crime Incidence	Crime Rate	Charge-sheeting Rate
1	1981	1385757	200.8	61.3	22	2002	1780330	169.5	80.0
2	1982	1353904	192.0	65.3	23	2003	1716120	160.7	80.1
3	1983	1349866	187.4	67.3	24	2004	1832015	168.8	79.8
4	1984	1358660	184.7	67.9	25	2005	1822602	165.3	80.7
5	1985	1384731	184.4	70.2	26	2006	1878293	167.7	80.6
6	1986	1405835	183.5	71.1	27	2007	1989673	175.1	80.1
7	1987	1406992	180.1	72.4	28	2008	2093379	181.5	79.8
8	1988	1440356	180.8	70.7	29	2009	2121345	181.4	78.4
9	1989	1529844	188.5	72.3	30	2010	2224831	187.6	79.1
10	1990	1604449	194.0	70.2	31	2011	2325575	192.2	78.8
11	1991	1678375	197.5	71.3	32	2012	2387188	196.7	78.8
12	1992	1689341	194.7	72.2	33	2013	2647722	215.5	79.5
13	1993	1629936	184.4	72.5	34	2014	2851563	229.2	79.6
14	1994	1635251	181.7	74.1	35	2015	2949400	234.2	77.7
15	1995	1695696	185.1	74.3	36	2016	2975711	233.6	72.9
16	1996	1709576	183.4	76.9	37	2017	3062579	237.7	70.7
17	1997	1719820	180.0	77.5	38	2018	3132955	236.7	68.1
18	1998	1778815	183.2	77.8	39	2019	3225597	241.2	67.2
19	1999	1764629	178.9	78.0	40	2020	4254356	314.3	75.8
20	2000	1771084	176.7	78.4	41	2021	3663360	268.0	72.3
21	2001	1769308	172.3	78.6					

Figure 3.3: Crime Rate in India 1981 - 2021

Chapter 4

System Dynamics Model

4.1 Casual Loop Diagram

- **Crime Rate Loop B1:** The crime loop depicts how impunity and punitive justice affect the crime rate. It demonstrates the impact of impunity and punitiveness on crime rates. When there is impunity and people believe they can engage in criminal behaviour without being punished, crime rates might rise.
- **Prison Building loop B2:** The prison construction loop depicts the rate at which jails are constructed. It also shows the rate at which new jails are built to accommodate the rising demand for incarceration. This loop demonstrates how new jail building can contribute to the expansion of the prison system and a rise in the prison population.
- **Prison Capacity Loop B3:** The prison capacity loop represents the rate of increase in jail construction per rise in prison capacity utilisation. This loop shows how the construction of additional prisons may become a self-perpetuating cycle, with increasing capacity leading to increased incarceration and a stronger demand for new prisons.
- **Bail Population Loop B4:** Bail-population illustrates the impact of the court bail system on the prison population. When bail is set too high or the system is skewed towards detaining individuals, the number of people detained pretrial rises, contributing to the general prison population.
- **B5:** Crime Justice loop shows the effect of the whole system, including the judicial system and public perception impacts crime rates. When the system

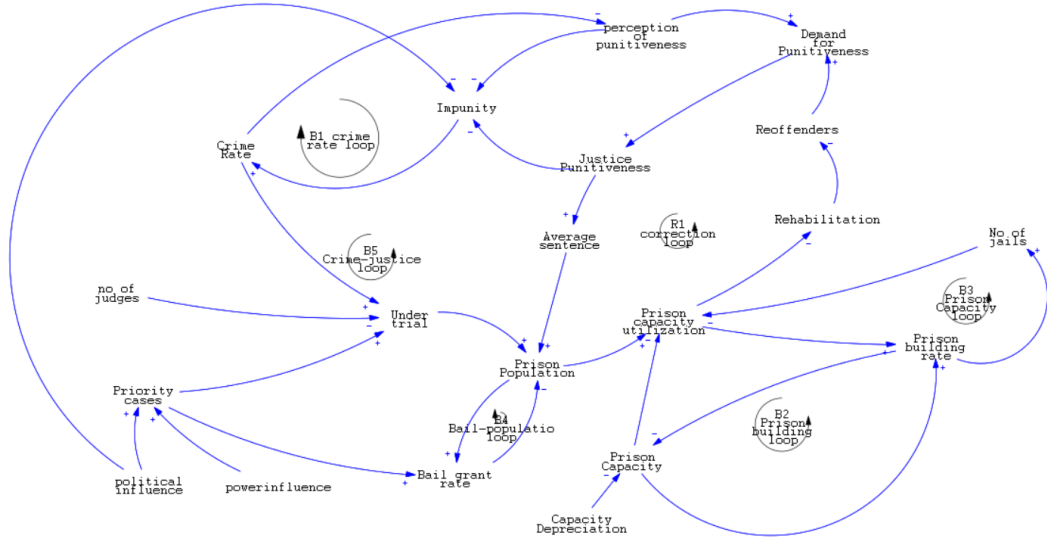


Figure 4.1: Causal Loop Diagram(CLD)

is perceived as just and effective, it can deter criminal behavior and contribute to a reduction in crime rates. Conversely, when there is a lack of faith in the system, it can lead to an increase in crime rates.

- **Correction Loop R1:** Correction loop represents how effective the judicial jail system working in correcting offenders. When the system is effective in providing rehabilitation and addressing the underlying causes of criminal behavior, it can lead to a reduction in recidivism rates and a more successful reintegration of offenders into society. However, when the system is focused solely on punishment without addressing the root causes of criminal behavior, it can contribute to a cycle of reoffending and a growing prison population.

4.2 Stock Flow Diagram(SFD)

4.2.1 SFD:View1

The stock-flow diagram (SFD) includes four stocks: Undertrial Population, Convicted Population, Released Offenders, and On Bail. The diagram also includes several flows that affect the size and composition of each stock.

The first stock, Undertrial Population, is affected by two inflows: first-time offenders, which is influenced by both arrest rates and crime rates indirectly or directly. The second inflow is from On Bail. There are also two outflows from

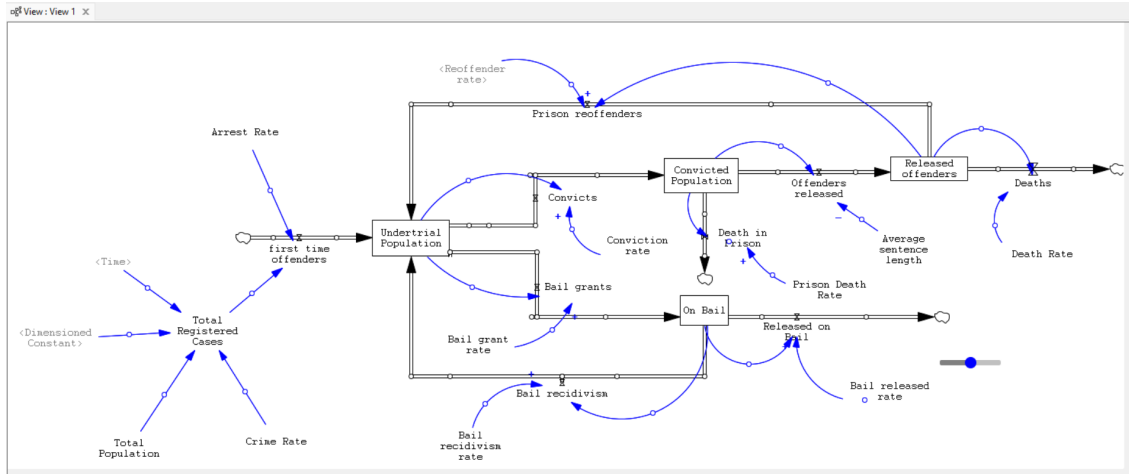


Figure 4.2: Stock Flow Diagram(SFD View 1)

Undertrial Population: the inflow to Convicted Population, which represents the number of undertrial prisoners who are convicted and transferred to the convicted population stock, and other the inflow to On Bail which represent undertrial population which was granted bail .

The second stock, **Convicted Population**, receives inflows from the Undertrial Population and outflows to the Released Offenders stock. The inflow from the Undertrial population is affected by the conviction rate, while the outflow to Released Offenders is affected by the average sentence and death of prisoners in Jail.

The third stock, **Released Offenders**, receives outflows from the Convicted Population stock. There are two Outflows from Released offenders: the inflow to Undertrial Population, which represent the reoffenders and is affected by the reoffender rate from View 2.

Finally, the fourth stock, **On Bail**, receives an inflow from the Undertrial Population and an outflow back to the Undertrial Population. The outflow from On Bail to the Undertrial Population is affected by the rate at which offenders violate their bail conditions or are again called for trial, which is affected by the bail recidivism rate.

In summary, the SFD illustrates the relationships between different stocks and flows that affect the size and composition of the undertrial population, convicted population, released offenders, and offenders on bail. It shows how different factors, such as arrest rates, crime rates, conviction rates, and average sentence length, affect the movement of offenders between these stocks.

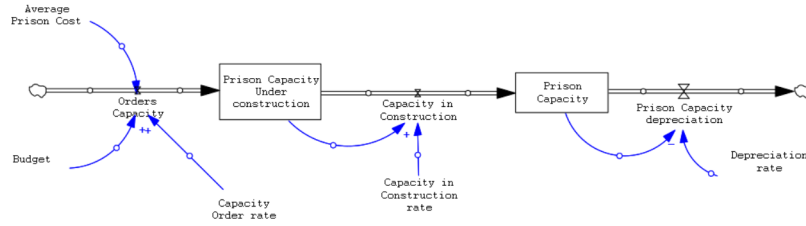


Figure 4.3: Stock Flow Diagram(SFD View 2)

4.2.2 SFD: View2

The Stock Flow Diagram consists of two stocks - Prison Capacity under Construction and Prison Capacity. The inflow to the Stock Prison Capacity under Construction is Order capacity, which is influenced by the budget and average Prison Cost. The outflow from Stock Prison Capacity under Construction is the inflow to Prison Capacity, which is influenced by Capacity in Construction rate. The outflow from the stock Prison Capacity is the Prison Capacity Depreciation rate.

The first stock, Prison Capacity Under Construction, shows the capacity that is now being built or is in the process of being built. The inflow to this stock, Order capacity, indicates the new capacity ordered for construction, and it is determined by the construction budget and the average cost of building a prison.

The inflow to Prison Capacity reflects the new capacity that has been completed and added to the current prison capacity. This is governed by the Capacity in Construction rate, which governs the rate at which new jails are built.

The second stock, jail Capacity, indicates the total number of available jail beds. The Prison Capacity Depreciation rate, which measures the rate at which the prison's capacity deteriorates over time owing to wear and tear or other factors, represents the outflow from this stock.

Overall, the Stock Flow Diagram represents the capacity of the prison system, with one stock representing the capacity that is currently under construction, and the other stock representing the total capacity that is available for use. The diagram highlights the factors that affect the construction of new prisons and the depreciation of existing capacity over time, which are important considerations for policymakers and prison administrators.

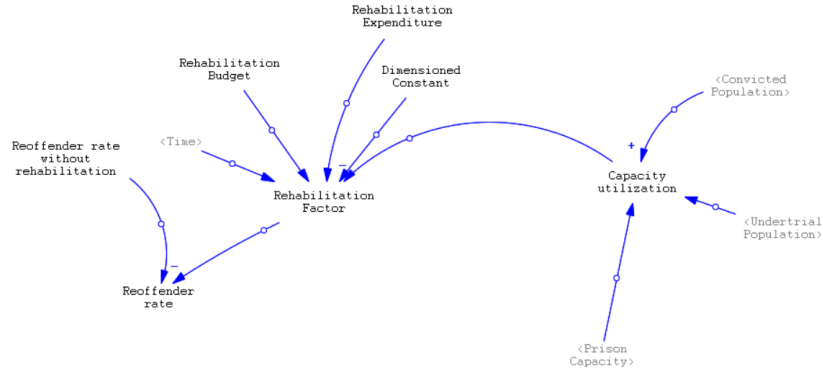


Figure 4.4: Stock Flow Diagram(SFD View 3)

4.2.3 SFD: View3

This Stock Flow Diagram depicts the relationship between numerous elements relevant to the criminal justice system. The total number of convicts that the system can accommodate is represented by the Prison Capacity. The Variable Capacity Utilisation reflects the percentage of available prison capacity that is currently in use.

The Convicted Population and the Undertrial Population, which indicate the number of people who have been convicted and those who are awaiting trial, respectively, have an impact on Capacity Utilisation. The capacity in construction rate, which reflects the number of new prisons being created, and the Prison Capacity Depreciation rate, which indicates the number of prisons being decommissioned, define prison capacity.

The Capacity Utilisation factor influences the Rehabilitation factor, which measures the criminal justice system's success in rehabilitating convicts. The rehabilitation budget and spending, which represent the number of resources committed to rehabilitation programmes, have an impact on the Rehabilitation factor. The Reoffender rate, which measures the percentage of offenders who commit new crimes after being released, is also affected by the Rehabilitation factor.

The Reoffender rate without rehabilitation, which shows the percentage of prisoners who would re-offend if they did not receive any rehabilitation, also has an impact on the Reoffender rate. This data can be used to assess the effectiveness of rehabilitation programmes and identify areas for improvement in order to reduce recidivism. Overall, this provides a visual picture of the complicated interactions among various elements in the criminal justice system, which can be utilised to drive policy decisions

and resource allocation.

4.3 Flows and Graph

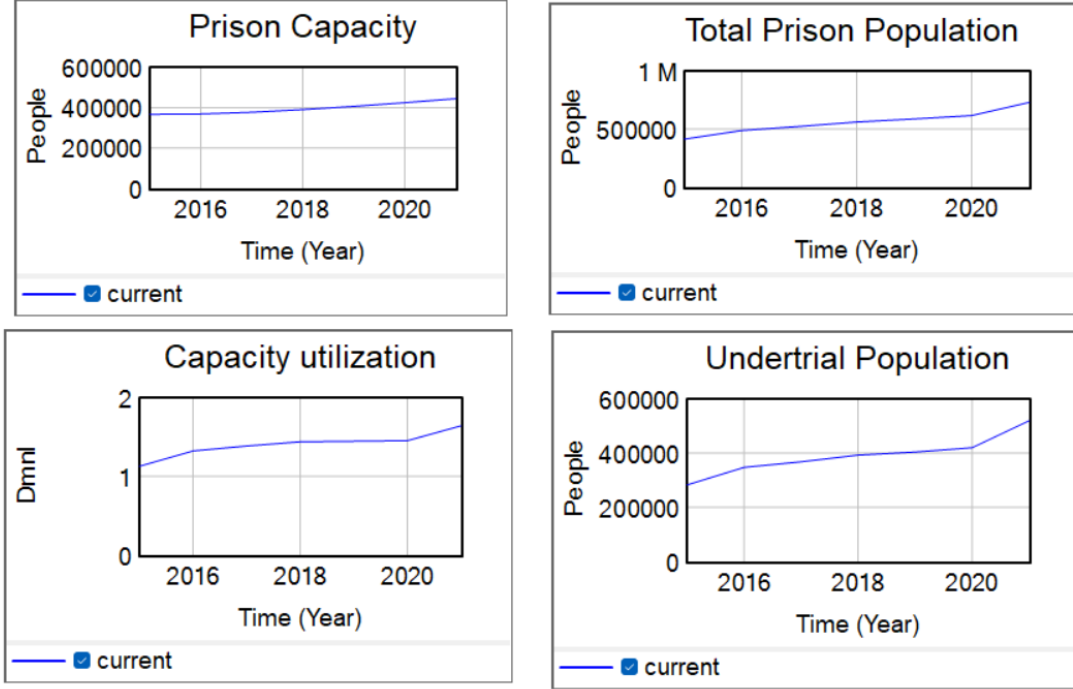


Figure 4.5: Simulation of SFD (4.2)(4.3)(4.4)

Year	No of Prison	actual capacity of prison	Prison population	Occupany rate	convicted	undertrial	detenues	others	Death
2015	1407	366781	419623	114.4	134168	282076	2562	817	1584
2016	1412	380876	433003	113.7	135683	293058	3089	1173	1655
2017	1361	391574	450696	115.1	139149	308718	2136	693	1671
2018	1341	397138	466802	117.5	139488	323537	2384	675	1845
2019	1351	400934	481387	120.1	144567	332916	3223	681	1764
2020	1306	414033	488511	118	112852	371848	3590	484	1887
2021	1319	425609	554034	130.2	122852	427165	3470	547	2116

Figure 4.6: Table 1 of Data Collected from Various Source(2015-2021)

We have used Lookup function for Total Population, crime rate, Rehabilitation Expenditure, and rehabilitation Budget created using data from 2015 and 2021. We have written the equations for other stocks and auxiliary variables. More details about equations and lookup function can be found in the model submitted along with the report.

Year	cases reported	crime rate	Convicted Released	total undertrial released	undertrial released on bail	Reoffenders
2015	2949400	234.2	183653	1292357	1157581	5576
2016	2975711	233.6	198686	1312800	1170577	5,589
2017	3062579	237.7	194367	1445023	1315239	6,582
2018	3132955	236.7	192409	1535871	1427942	7865
2019	3225597	241.2	184962	1598218	1499028	6,756
2020	4254356	314	109516	1291504	1232469	3908
2021	3663360	268	91364	1469627	1395635	3,333

Figure 4.7: Table 2 of Data Collected from Various Source (2015-2021)

In Fig(4.6), graph displays the analysis of various indicators in the SFD from 2015 to 2021. The graph shows that there has been an increasing trend in the Prison capacity, Total Prison Population, Capacity utilization, and Undertrial population. This implies that the number of people incarcerated in the prison system has been on the rise, along with an increase in the capacity of prisons to accommodate more individuals.

The trend in the prison capacity indicates an upward trend in the overall infrastructure of prisons, with more investment being made towards expanding and upgrading prison facilities. The trend in total prison population indicates a steady increase in the number of incarcerated individuals, which may be due to several factors such as an increase in the number of criminal offenses, stricter law enforcement, or changes in the legal system.

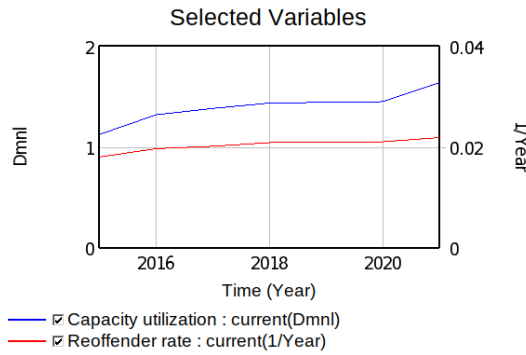
The trend in capacity utilization indicates that the overall capacity of prisons is being efficiently utilized, which may imply that there is a need for further expansion in the infrastructure to accommodate more individuals. The trend in undertrial population indicates a rise in the number of individuals who are incarcerated while their cases are still ongoing in the legal system.

Overall, the graph reflects a growing demand for prison infrastructure and resources to support an increasing prison population, which may require policy interventions to manage the growth sustainably and effectively.

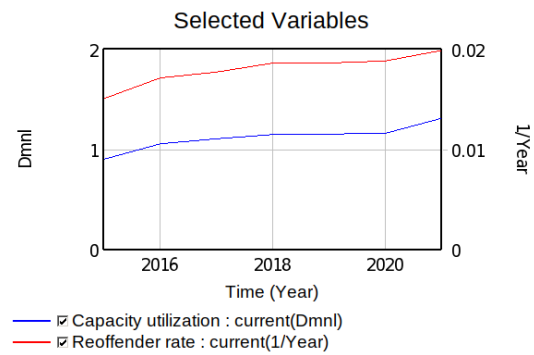
We can increase the Bail grant rate to reduce capacity utilization and undertrail Population. Increasing Rehabilitation Expenditure, and rehabilitation Budget will decrease the reoffending rate and essentially reduce the undertrial population.

Chapter 5

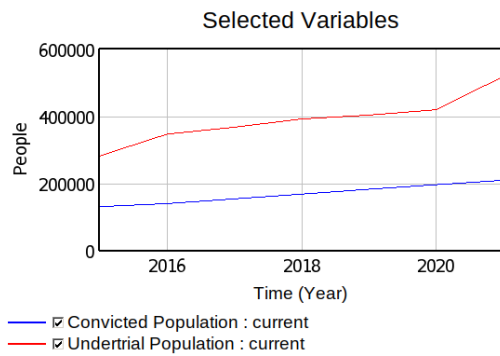
Observations



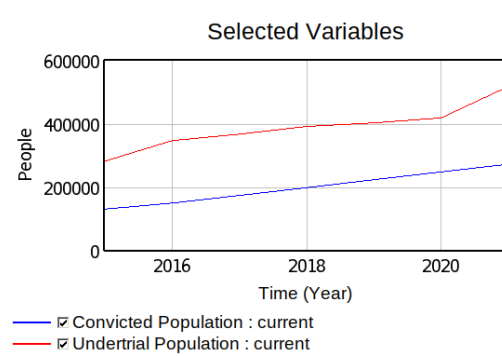
(a) Capacity utilization vs Reoffender Rate



(b) Capacity utilization vs Reoffender Rate (After decreasing Capacity utilization by 25%)



(c) Convicted Population vs Undertrial Population



(d) Convicted Population vs Undertrial Population (After Increasing Average sentence by 40%)

Figure 5.1: Capacity utilization and Average Sentence Length observed.

From this SFD model fig(4.2) and Graphs fig(5.1a&b) , We observed that decreasing capacity utilization has a positive impact on the reoffender rate . This is because the capacity utilization is affected by the total prison population, undertrial population, and prison capacity. By reducing the capacity utilization, the pressure on the prison system is eased, which in turn can lead to better rehabilitation and reduced reoffending rates. Therefore, it is essential to ensure that the prison system operates at optimal capacity utilization levels to achieve the goal of effective rehabilitation and lower reoffender rates.

From this SFD model fig(4.2) and Graphs fig(5.1c&d), According to the SFD model explained above, if we increase the average sentence rate, it is expected that the conviction population will increase, since the outflow from the convicted population to released offenders will decrease. However, there may not be much change in the undertrial population as the inflow of undertrial population is primarily affected by the arrest rate and crime rate. It is possible that with an increase in average sentence rate, the number of undertrial cases may decrease as more cases are disposed of by the courts, but this cannot be assumed without further analysis of the specific factors influencing the undertrial population. Overall, increasing the average sentence rate can have a positive impact on reducing the prison population, but its impact on the undertrial population may be limited. This suggests that policymakers need to focus on addressing the root causes of crime and reducing the overall crime rate, rather than simply relying on punitive measures.

Chapter 6

Conclusion

The Stock and Flow Diagram (SFD) model presented above depicts the dynamics of the criminal justice system in relation to the population of undertrial, convicted, and released offenders. The model highlights the factors that the main reason for Prison Overcrowding in India is under trail Population(as of December 31st 2021 it was 4,27,165 (4.6). According to the data collected from In this conclusion, we will discuss the insights gained from the SFD model and its implications for policy and practice.

One of the key insights gained from the SFD model is that the undertrial population is affected by both the arrest rate and crime rate. This suggests that efforts to reduce the undertrial population need to focus on reducing both the rate of arrests and the overall crime rate. Furthermore, the model suggests that increasing the capacity of the justice system, such as by building more prisons or improving the efficiency of the courts, can reduce the undertrial population. However, this may not be a sustainable solution in the long run and may only lead to overcrowding and other problems.

Another insight gained from the SFD model is that the average sentence has a significant impact on the conviction population. This implies that increasing the average sentence may lead to an increase in the number of convictions, but it may not have a significant impact on the undertrial population. This suggests that policy makers need to focus on addressing the root causes of crime and reducing the overall crime rate, rather than simply relying on punitive measures.

The SFD model also highlights the importance of rehabilitation in reducing the reoffender rate. The model suggests that increasing the rehabilitation factor can lead to a reduction in the reoffender rate. This implies that policy makers need to invest in effective rehabilitation programs that address the root causes of criminal

behavior and provide offenders with the skills and support they need to reintegrate into society.

Overall, the SFD model provides a useful framework for understanding the dynamics of the criminal justice system and the factors that influence its performance. The model suggests that policy makers need to take a holistic approach to reducing crime and improving the justice system, focusing on prevention, rehabilitation, and addressing the root causes of criminal behavior. The model also highlights the need for evidence-based policy making, where policies are based on rigorous analysis of the available data and are continually evaluated and refined based on their impact.

In conclusion, the SFD model provides a valuable tool for understanding the criminal justice system and its dynamics. The model highlights the importance of addressing the root causes of crime and investing in prevention and rehabilitation programs. The model also emphasizes the need for evidence-based policy making and continuous evaluation and refinement of policies based on their impact. By adopting a holistic approach to crime prevention and justice system reform, policy makers can create a more effective and just criminal justice system that benefits society as a whole.

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