Regulating India’s resources, be it land, water, ecology or the Internet, remains one of key challenges confronting the government today. In each case, the system is burdened with archaic legal structures, cumbersome judiciary and bureaucracy and the inability or the lack of desire to adapt quickly. Be it an age-old problem like land ownership or an emerging domain like digital technologies, the Indian state’s Achilles heel remains the same – lack of rational and overarching regulatory frameworks. In the following essays, CPR faculty offer broad principles and specific suggestions to develop holistic approaches to deal with the challenge of regulating India’s resources.
An estimated 7.7 million people in India are affected by conflict over 2.5 million hectares of land, threatening investments worth $200 billion. Land disputes clog all levels of courts in India, and account for the largest set of cases in terms of both absolute numbers and judicial pendency. About 25% of all cases decided by the Supreme Court involve land disputes, of which 30% concern disputes relating to land acquisition. Again, 66% of all civil cases in India are related to land/property disputes. The average pendency of a land acquisition dispute, from creation of the dispute to resolution by the Supreme Court, is 20 years. Since land is central to India’s developmental trajectory, finding a solution to land conflict is one of the foremost policy challenges for India.

Understanding Incidence and Pendency of Land Conflict in India

Legislative and administrative factors are responsible for the high incidence of legal and extralegal conflicts over land, and judicial factors are behind the pendency of land disputes. Competing historical and current policy narratives of property rights over land, have resulted in the coexistence of numerous, conflicting laws leading to legal disputes over land. This is the legislative factor. This problem is compounded by administrative failure to comply with the rule of law. This is the administrative factor. The pendency of conflict, in turn, is a result of legal and evidentiary barriers in bringing land disputes to court, largely due to administrative and judicial incapacity; this prevents expeditious resolution of land disputes. This is the judicial factor.

Conflicting narratives, policies and land laws create land disputes

There are two conflicting narratives about ownership and management of land in India. The first narrative— inherited from the British colonial state — views common land, or land that is not privately owned, as merely
a commodity, no different from labour and capital, with the state as the ultimate owner. This claim to ultimate ownership gives the state the power to redistribute land at will, as largesse to selected beneficiaries. Such state acquisition of land has historically been the source of considerable dispute. According to estimates by CPR’s Land Rights Initiative (LRI), these disputes constitute 30% of all land litigation in the Supreme Court over the past 70 years. LRI’s comprehensive study of land acquisition litigation before the Supreme Court over a 66-year period, from 1950 to 2016, reveals that all litigation is with respect to privately held land. In contrast, data from the Land Conflict Watch project reveals that the vast majority of current, on-ground, extralegal conflict over land is with respect to common lands. Thus, it is clear that in the face of state acquisition of land, when people have legally recognized land rights, they go to court. Where their rights are insufficiently recognized by law, they protest on the ground.

The second narrative – articulated by the ‘people’, including farmers, both landowners and tenants; and other traditional communities, such as cattle grazers, forest dwellers, tribals and fisherfolk – views land as an economic, social and cultural resource over which multiple groups exercise property rights. Usually, after intense on-ground contestation, the property rights of certain groups like Scheduled Tribes (STs) and tenants have been protected by the Constitution and statute, while in case of other groups like fisherfolk, their rights are protected by custom and, often, executive action.

As a consequence of these two historically competing policy narratives, the constitutional, legislative and administrative framework governing land is as fragmented as the land holdings in India. Enacted at different points of time, land laws clash with each other, because they seek to articulate in law these two competing narratives. For instance, the provisions of the Forest Rights Act, 2006, are in conflict with those of the Indian Forest Act, 1927, and the Forest Conservation Act, 1980, and are also threatened by proposed amendments to the Indian Forest Act. Legal conflicts also arise when laws are enacted or amended at different times to appease different stakeholders. For instance, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act has, in the five years since it came into force, been amended by seven state legislatures. This will likely create more legal disputes with respect to land acquisition, because the original RFCTLARR Act provisions had been included with a view to addressing growing conflict over land acquisition. Moreover, in many states, we find laws that provide for eviction of unauthorized occupants over public lands coexisting with laws that provide for regularization of unauthorized occupation, thereby creating potential for dispute/conflict at the level of law itself.

Finally, the legislative landscape is complicated by the fact that many subjects pertaining to ‘land’ are in the ‘state’ and ‘concurrent’ lists of the Constitution, leading to a multiplicity of original and active land laws. Yet, there is no official comprehensive database of all land laws in India. A first of its kind, ongoing LRI study estimates that India has over a thousand original and active central and state land laws.

The problem of ‘multiple laws’ is exacerbated by the fact that these laws are administered by numerous government ministries at the central level, and departments at the state level. These include, for instance, the ministries of Law and Justice, Rural Development, Mining, Industries, Infrastructure, Urban Development, Tribal Affairs, Home Affairs and Defence.

**Administrative non-compliance with law also creates and prolongs land disputes**

Where laws are clear, disputes and conflicts arise because of administrative non-compliance with the rule of law due to both unwillingness and incapacity. The LRI study of all Supreme Court cases on land acquisition during 1950-2016 shows that 95% of the disputes arose because of administrative non-compliance with the legal procedure for acquisition of land, including the process of computation of market value compensation for land acquired. Around 34% of the disputes involved irregularities in completion of the procedure for acquisition. Almost half of such cases concerned with procedural irregularities involved administra-
tive unwillingness to comply with the rule of law. The remaining half of the cases involved administrative incapacity to comply with the rule of law, in part because of governmental failure to regularly update administrative manuals based on changes in the law. Moreover, the government was more likely to lose than win these land disputes before the Supreme Court. Additionally, since colonial times, land in India has been broadly administered by the revenue and forest departments. But there also always existed disputes between both departments as to which land belongs to which department. This in turn creates and prolongs land disputes.

Finally, legal disputes over land are also created by evidentiary barriers for establishing rights over land in the absence of documentary proof because of outdated/no land surveys and inaccurate/outdated land records in most states. The Department of Land Resources has sought to resolve the problem of inaccurate land records through the ‘Digitisation of Land Records Modernisation Programme’. However, unless the government makes a serious attempt to update land records on the ground to reflect the property rights of all landowners, digitizing them would not eliminate the problem of inaccurate land records.

**Judicial reasons cause pendency of land disputes**

Once a land dispute goes to court, serious judicial incapacity leads to pendency of disputes. First, a major cause for pendency of all disputes is India’s low judge-to-people ratio. Land cases form more than half of all civil cases and constitute over a quarter of cases before the Supreme Court; they also have the longest pendency compared to other cases. Hence low judge-to-people ratio particularly prolongs resolution of land disputes. Second, the judiciary, particularly at its lowest levels, lacks the financial, technical and infrastructural capacity necessary to resolve disputes quickly. Finally, poor enforcement of court decisions by the government, and limited judicial capacity to follow up on such enforcement, especially when such decisions go against the government, also lead to prolonging of land disputes.

### Policy Recommendations for Reducing Incidence and Pendency of Land Disputes

**Eliminate legal conflicts.** No government has ever attempted an exercise to rationalize existing land laws. But this is the need of the hour. The Law Ministry and Law Commission are best positioned to conduct or commission such an exercise. This would involve, first, the creation of an exhaustive database of all land laws in India. Once such a database of laws is created, the Law Ministry and Law Commission must identify, and Parliament must repeal, laws that deny rights of certain groups of people, particularly women, and eliminate genuine conflicts between laws.

**Improve administrative willingness and capacity to implement the rule of law:** The government must take steps to ensure greater administrative capacity and willingness to implement the rule of law. In addition, we need greater coordination between government departments dealing with land, transparency of land administration, and better access to land data. This can be achieved by undertaking the following measures.

- The Department of Land Resources, currently under the Ministry of Rural Development, is the nodal agency for coordination of land policy across states. But land is not merely a rural concern. As India becomes increasingly urbanized, the government needs to have a more comprehensive imagination of land requirements for rural and urban populations. The creation of a separate Ministry of Land to serve as the nodal agency for coordinating land policy across different types of land is critical.

- There needs to be a coordinated effort between the Ministry of Law and Justice, Department of Land Records, Ministry of Environment and Forest, Ministry of Tribal Affairs, state boards of revenue, and state forest departments to resolve conflicting land laws and streamline land administration.

- All government departments dealing with land, and particularly those involved in land acquisition, must update administrative manuals in accordance with changes in legislation and judicial precedent.
Through dedicated interdepartmental meetings and other coordination, government must resolve land boundary disputes between the revenue and forest departments.

The government must devote financial and technical resources to conduct land surveys and update paper records to reflect property rights of all the people, as opposed to digitization of existing records that are substantially inaccurate.

The government must ensure better skills training so that officials dealing with land have both the knowledge and the capacity to implement the rule of law. Institutional mechanisms should be designed to incentivize compliance with, not defiance of, the rule of law.

Given the low success rate of government appeals, the government must carefully evaluate the likelihood of success of an appeal before pursuing it. Government officials must be incentivized to not appeal cases that have little likelihood of success following such an evaluation. This would go a long way in reducing pendency of land disputes.

The government must wholly commit to transparent land administration and comply with its obligations under the Right to Information Act, 2005, to make digitally accessible all land laws, executive notifications, rules, circulars, etc. pertaining to land administration. In addition, the government must open up to public scrutiny departmental data on compliance with land laws.

In addition to legislative and administrative reforms, judicial reforms can go a long way towards reducing the pendency of land litigation in India. The first step in this direction would be the implementation of key recommendations of the Law Commission. These include:

- Changing the base for determining sanctioned posts for judges from ‘Judge: Population Ratio’ to ‘Rate of Disposal Method’
- Filling up all existing vacancies
- Increasing the retirement age of subordinate judges to 62, and those of High Court and Supreme Court judges to 65 and 68 years respectively.
- Greater financial allocations to the lower and higher judiciary, to enable infrastructure, technical and skills upgradation

Some states like Bihar have created separate land tribunals for expeditious resolution of land revenue cases. This model should be studied, and if found effective, should be replicated in other states.

Conclusion

Land conflict in India, both legal and extralegal, has existed from colonial times because of the imposition by the British state of the notion that all land not privately held belongs to the ‘state’. This concept has been continuously resisted by the ‘people’ who were disempowered by the colonial state’s deprivation of their legal property rights under precolonial administration. Over time, competing ‘state’ and ‘people’ narratives over land have led to conflicting policy and legal interventions. This has, in turn, led to legal disputes over land. Even when laws are clear, administrative failure to comply with the rule of law, due to unwillingness and incapacity, contributes to the incidence and pendency of land disputes. Serious judicial incapacity in turn prolongs pendency of land disputes.

Due to the increasing population pressure on land, and the corresponding demand for land to fuel the development engine, the scale and scope of land conflict today has assumed gigantic proportions, stalling development projects and threatening livelihoods and investments. Equitable and efficient intergenerational management of land is necessary not just for India’s economic development, but also for its political and social stability. Therefore, working towards resolving land conflict, in light of the above policy recommendations, is an imperative agenda for the new government.
2. This is based on preliminary findings from a CPR Land Rights Initiative study, and is also consistent with findings from a comprehensive quantitative study of the Supreme Court’s caseload between 1993 and 2011. See Nick Robinson, ‘A Quantitative Analysis of the Indian Supreme Court’s Workload’, *Journal of Empirical Legal Studies*, 10(3) (2003): 570-601.
5. Articles 294 and 295 of the Indian Constitution stipulate that the Indian state succeeds to all property, claims and assets of the British state.
7. An LRI study estimates that there are 102 laws of land acquisition alone, including state amendments to the Land Acquisition Act, 1894. *Supra* note 4.
9. Article 244(1) and Article 244(2), read with the Fifth and Sixth Schedules respectively, create special protections for land rights of Scheduled Tribes in geographically demarcated areas, known as Scheduled Areas.
10. Starting with the Bengal Tenancy Act, 1885, almost each agrarian state has laws protecting tenancy rights. Similarly, the Forest Rights Act, 2006, recognizes land rights of Scheduled Tribes and other forest dwelling communities.
11. A prolonged movement has sought the enactment of a Fishing Rights Act, along the lines of the Forest Rights Act.
12. 86.21% of all land holdings in India are small and marginal holdings taken together (0.00-2.00 ha). See Census of India.
17. Article 246 read with the Seventh Schedule of the Constitution of India.
19. Wahi et al., ‘Land Acquisition in India’.
20. Ibid. p. 28.
21. Sections 61-64 of the Indian Evidence Act, 1872, emphasize that documents must be proved by primary evidence, that is, presentation of the document itself. However, many people with legally recognized land rights do not have documentary proof for the same. This makes judicial resolution of land disputes extremely difficult.
22. Much of the northeastern part of India, including the state of Assam, has never been fully surveyed. The last full land survey for the state of Bihar happened in 1950s-1960s.
23. Former Minister for Rural Development notes that the state’s failure to fairly compensate those who lost land under the 1894 Act arose due to inaccurate land records, rampant undervaluation of sale deeds, and absence of land markets in many rural areas. See Ramesh et al., *Legislating for Justice*.
25. Ibid.
27. *Supra* note 24. (Q. Pl give direct source)
India is facing an increasingly dire water situation. The NITI Aayog in 2018 warned that the country is facing the ‘worst water crisis in its history’. This is a crisis of availability of water with various states facing increasingly frequent and/or acute water scarcity for at least some part of the year. With increasing water use and more erratic monsoons, per capita water availability in the country is progressively decreasing. An associated challenge is the country’s dependence on groundwater. This is particularly significant because the overwhelming majority of the population depends on groundwater for its domestic water needs; for crores of people water is a source of constant worry in a context where water tables are rapidly falling and water quality rapidly diminishing. It is also a concern for irrigators since the bulk of irrigation today depends on groundwater. Juxtaposed against this water scarcity challenge is a crisis of abundance reflected in the frequent floods that afflict several states on a regular basis.

However, the most critical challenge of all is that of governance of water. On the one hand, the governance of water is organized largely around laws and institutions tasked with allocating and regulating use of water among various claimants. On the other hand, water protection is seen as an environmental mandate that remains largely distinct from water governance, even though water is an integral part of environmental governance. This makes for poor outcomes since protecting water is necessary to ensure availability today and in the future and thus conditions water use. The failure to effectively protect water is an increasingly significant cause of conflicts among different water users.
The challenge of water governance primarily emerges from an inappropriate and insufficient legal framework. This challenge can be broken into different components.

» The rules governing access to water are often drawn from old case laws that gave primary control over water to landowners. This is problematic because there is no mechanism to coordinate the cumulative use of a river by all riparian landowners, leading to potential over-exploitation. It is also inappropriate because it gives only landowners rights over a resource that every person needs to use on a daily basis for drinking, food and domestic needs. In addition, it precludes any basin-wide or aquifer-wide protection measures since control over water is organized around the claims of individual landowners. This is particularly problematic for groundwater where each individual landowner has the right to take as much groundwater as they please, to the extent of depriving other users of the same aquifer and without considering the need to avoid use beyond replenishment.

» One of the specific problems with the above scheme is that the rules for surface water and groundwater are not the same. It was determined in the nineteenth century when the connections between the two were not well understood. This has led to the very unfortunate situation where rules for surface water and groundwater are different. Moreover, most water laws centre around issues related to surface water, leaving groundwater unregulated, even though this is the critical issue today. The largest use of water, irrigation, is mostly governed by laws that consider irrigation to be sourced from surface water when in reality farmers rely overwhelmingly on groundwater for irrigation.

» The responsibility for governing water is divided between different institutions, from panchayats/municipalities to states and the Union. The Constitution gives primary responsibility to states, while the local dimensions of water governance have been confirmed in the 72nd and 73rd constitutional amendments and the Union has some powers concerning matters that go beyond the state level. The recognition that water needs to be addressed at all levels is an excellent starting point. In practice, however, even though the Supreme Court has repeatedly stated that the state at each level is a ‘public trustee’, this is not yet reflected in legislation, leading to unnecessary governance conflicts.

» The rules in place for drinking water supply are separate for urban and rural areas, with different supply norms for rural and urban residents. This fragmented governance is problematic since urban areas increasingly rely on water from beyond the municipal limits, thus making it imperative to address problems arising jointly.

» As we have seen, the rules treat surface water and groundwater separately. They also view pollution as an environmental matter and usage as a water sector matter.

As this brief description highlights, there are vast gaps between regulation and practice, as well gaps between the existing parts of the regulatory framework. These issues have been critical concerns in the water sector and policymakers at different levels have tried to address them. This has led to various law-making initiatives at the state and central levels. In keeping with the constitutional mandate, states have adopted a number of water laws over the past couple of decades. This is commendable since it reflects a recognition that a number of issues can only be effectively addressed if legislation is adopted. At the same time, states have generally not engaged independently in developing new water laws and have tended to react to policy priorities set elsewhere. The resultant patchwork of laws does not necessarily address the most critical issues.
The new government needs to focus, in particular, on two initiatives: a framework water legislation and a model groundwater law. Both of these have been in the making since the beginning of the decade, having been proposed and developed by the last two governments at the Centre. They need a much stronger push to ensure a strong legal framework for water that allows India to face the challenges of the 2020s.

Towards Framework Water Legislation

The medley of water laws that exist in most states is deficient in that these laws are not centred around any set of principles governing the water sector as a whole. Principles have been laid down by the higher judiciary over time but they have not been enshrined in legislation. This is a gap that impedes effective governance of water and prevents water conflicts from being resolved on bases that are clear for all users.

In the absence of framework legislation in any state, the Planning Commission of India took the initiative of drafting such a law in 2011. The underlying idea was to ensure that all institutions concerned with water could rely on a single frame of reference so that water governance becomes more transparent and accessible. The drafting of framework legislation was taken up again by the Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWRRDGR) in 2015, leading to an updated draft known as the National Water Framework Bill, 2016.

There is a strong need to ensure that all water and all water uses are governed by the same principles, and that protection and use principles are clearly linked. The new government must ensure that this draft is taken up and adopted so that the country is better prepared to face the increasing number of water crises that are likely to beset a number of states in the 2020s.

Need for Comprehensive Groundwater Legislation

Groundwater is and will remain the primary source of water for most water uses for many years. Existing groundwater regulation is extremely dated; the principles were laid out in the 19th century and have not been updated. Recent regulatory interventions focus on top-down attempts to control usage; they are failing because they neither consider the broader aquifer-level protection nor reflect the fact that groundwater use is, first, a local issue to be addressed at the local level. The rapidly deepening groundwater crisis calls for an entirely new perspective on groundwater protection and groundwater rights.

The central government has played an important role in providing models that states can use to develop their own legislations. A first generation of model legislation promoted between 1970 and 2005 focused essentially on introducing new control measures for groundwater use without addressing either the rights to groundwater or the need to protect, manage and regulate groundwater at aquifer level. In 2011, the Planning Commission of India took up the challenge of drafting a comprehensive groundwater model law addressing protection and use from the local level to the state level. In 2015, the MoWRRDGR decided to go back to the draft of the Planning Commission and requested an updated version. This was delivered in 2016, and submitted for comments to states and the NITI Aayog; a revised version incorporating comments was submitted in 2017.

The new government should ensure that the Model Groundwater (Sustainable Management) Bill, 2017, is taken forward at the earliest. Where it exists, state groundwater legislation based on the old model legislation is woefully incapable of addressing today’s challenges, in any case most of these Acts exist mostly on paper. The Bill is an appropriate template that the central government must formally adopt and promote to address the rapidly worsening situation in terms of falling water tables and diminishing water quality besetting vast areas of the country.
Priorities for the New Legislature

The water sector has been the object of much attention from policymakers for several decades. Most regulatory interventions have, however, been largely piecemeal as reflected in the fact that most water laws are sectoral (for instance, irrigation-specific) and fail to address the unavoidable connections amongst different uses and between surface water and groundwater. Some of the most glaring gaps, such as a missing framework of principles governing the water sector, have been partly filled by the Supreme Court and the high courts. This is an appropriate start but does not affect the governance of water on a daily basis at the local level, which is determined by the laws in place. Further, the lack of comprehensive legislation to address groundwater leads to a situation where the most important aspect is not regulated by comprehensive regulation, contributing to the increasingly dire situation in many states.

The new government should immediately make use of the two existing drafts prepared in the previous legislature and take them forward:

» The adoption of the model law for groundwater – the Model Groundwater (Sustainable Management) Bill, 2017 – is crucial to ensure the equitable and sustainable use and protection of groundwater.

» The adoption of a framework legislation based on the National Water Framework Bill, 2016, will ensure that there is a set of overall principles for the entire water sector reflecting legal developments in recent decades. This will ensure that all actors in the sector have the same point of reference in their interventions.

END NOTES

1. NITI Aayog, Composite Water Management Index (2018), 27
2. For example, Debi Pershad Singh v. Joy Nath Singh (1897) L.R. 24 I.A. 60 (Privy Council, 7 April 1897) for surface water and Acton v Blundell (1843) 152 ER 1223 for groundwater.
4. NITI Aayog, Composite Water Management Index, 46.
Safeguarding the Fragile Ecology of the Himalayas

SHYAM SARAN

The states of India which share the Himalayas are also its principal sentinels. Adaptation to climate change must become an integral part of their development strategies. The special vulnerabilities of this ecologically fragile region need to be recognized, as much as its rich natural resources in terms of forests, water wealth, biodiversity and tourism potential. While a number of long-term measures are included as part of the National Action Plan on Climate Change, 2008, several key and urgent interventions are vital to prevent the further degradation of the Himalayan ecology and to preserve their life-sustaining role for millions of our citizens. This includes those residing not only in the Himalayan states, but also in the entire Indo-Gangetic Plain. It is the perennial rivers arising from the snow mountains that sustain livelihoods in the plains. The new government must prioritize the safeguarding of the fragile ecology of the Himalayas among the issues requiring urgent attention.

Sustainable Urbanization in Mountain Habitats

The cities in the Himalayan mountainous zones are increasing in size and number. They exhibit the same degradation that plagues our cities in the plains: growing dumps of garbage and plastic, untreated sewerage, chronic water shortages, unplanned urban growth, and heavy pollution from increasing vehicular traffic. This phenomenon will only exacerbate the impact of climate change. The following immediate interventions by all the concerned states, supported by the Union government, are necessary:

(i) Town planning and adoption of architectural norms

Given the ecological fragility of mountainous areas, it is imperative to halt the unplanned growth of new settlements. Instead, there should be consolidation
of existing urban settlements to be governed through land-use planning incorporated in a municipal master plan. These designated settlements would be provided with all basic urban facilities, such as water supply, waste disposal and power, before further civilian growth is permitted. State authorities will prescribe regulations taking into account the particularities of the local ecosystem, including seismic vulnerability, the need to respect local aesthetics and harmony with nature, and the optimum population load the settlement can sustain, given the availability of water and power. Consolidation of urban settlements would also preclude the need to construct a larger number of road links to a multiplicity of destinations, which would cause further damage to the fragile ecology.

There are 12 Himalayan towns included in the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), which could serve as models in this regard.

Further action points may include:

(a) Municipal by-laws to be amended, wherever required, to prohibit construction activity in areas falling in hazard zones or across alignments of natural springs, water sources and watersheds near urban settlements. There will be strict enforcement of these by-laws, including through imposition of heavy penalties and compulsory demolition of illegal structures.

(b) The National Building Code will be revised by the central government, in consultation with the concerned state governments, to take into account the specific requirements of urban settlements in the Himalayan zone, including recommendations on the use of local materials and local architectural practices.

(c) The state governments concerned will set up state-level urban arts councils, under relevant legislation, to oversee the implementation of the National Building Code for mountain areas and of respective master plans for designated urban settlements.

(d) The compulsory use of solar water heaters, rainwater harvesting and appropriate sanitation facilities will be incorporated in the National Building Code and municipal by-laws in the concerned states.

(e) Construction activity will be prohibited in catchment areas of cities, including along mountain lakes and other water bodies. Their feeder channels will also be kept free of building activity.

In order to enable these decisions to be implemented urgently, it is necessary to draw up, as soon as possible, a comprehensive state-wide inventory of such water resources and their channels, which could then be declared fully protected zones.

(ii) Solid waste management

The following policy directives could be considered:

(a) The use of plastic bags should be banned in all hill towns and villages. This has been done with commendable success in the states of Himachal Pradesh and Sikkim.

(b) Potable local water, certified by a designated state authority, may be provided through all commercial outlets, such as local shops and restaurants. This would discourage the use of bottled water, which adds to toxic plastic litter in hill towns and along trekking routes. This has been done successfully in Leh and promotes local employment. More recently, the use of water ATMs to dispense clean drinking water at affordable rates is being popularized and would be especially suitable in hill towns, pilgrim centres and tourist locations.

(c) Each state must establish facilities for the composting of biodegradable household waste and recycling, and reuse of other types of waste. This may be done through public-private partnership wherever feasible. This will be followed by amendments to municipal by-laws that make the segregation of household waste mandatory, to be
accompanied by a focused awareness and public education campaign.

(d) An appropriate state tax or levy on all major commodities using plastic and/or non-biodegradable packaging that enter hill towns must be explored. This will create incentives to manufacturers of these goods to use/develop environmentally friendly packaging.

**Promotion of Sustainable Pilgrimage**

The following measures to promote the healthy and sustainable development of religious pilgrimage to the many sacred and holy sites scattered all over the Himalayas may be considered:

(i) A comprehensive inventory of key pilgrimage sites in each state would be drawn up, which would include analyses of the ecological capacity of each site, based on its location and fragility. The Union government will assist in this exercise, which would be carried out by multidisciplinary teams including engineers, scientists, ecologists, cultural anthropologists and respected NGOs.

(ii) In advance of the results of the above exercise, a plan must be developed to harmonize the inflow of pilgrims with the local environment’s capacity to cater to the needs of pilgrims. These include the sources of several Himalayan rivers, sacred lakes and forest groves. The selected sites would be listed through public consultation and consensus, and publicly announced. There may also be restrictions on the months of the year when these sites would remain open, to allow recovery of the ecology during the off-season, or on the numbers of visitors. Uttarakhand, for instance, has recently issued guidelines restricting the daily number of pilgrims to the Gangotri glacier (Gaumukh) to 150. In this context, plans to allow year-long access to high-altitude pilgrimage sites at Badrinath and Kedarnath should be abandoned.

(iii) The construction of roads should be prohibited beyond at least 10 km from protected pilgrim sites, thereby creating a much-needed ecological and spiritual buffer zone round these sites. These areas, like national parks and sanctuaries, could be maintained as special areas with minimal human interference, respecting the pristine nature of these sites. Where there are existing roads within the 10-km buffer, vehicular traffic should be allowed only beyond this limit.

(iv) Each designated pilgrimage site should have a declared buffer zone where development activity will be carefully regulated. Local communities residing in or around these sites must be given a role in the management of the buffer zone and encouraged to benefit from pilgrimage activities through providing various services to pilgrims. This has been tried out with some success in the Periyar Tiger Reserve in Kerala.
(v) At all entry points to designated buffer zones, pilgrims will be advised to take back all waste, in particular non-degradable items. Provision may be made to sell them waste collection bags, which could be made by local communities using local materials. Such waste may be collected and sorted out at special collection points outside the buffer zone, for disposal. A fee may be charged for the same.

Commercial and Adventure Tourism

The measures listed for regulation of pilgrim traffic in the Himalayan zone would also apply, to a large extent, to the promotion of ecologically sustainable tourism in the Himalayan region as a whole. The following interventions may also be considered:

(i) Homestead tourism could be promoted in this area and commercial hotel tourism of the three- to five-star variety discouraged or prohibited. Local communities will be encouraged and enabled to provide homestead-based tourist facilities, through a package of incentives and capacity building. The successful experience with homestead tourism in Ladakh is a good example.

(ii) Each state will set up a homestead tourism audit and certification agency to promote standardized and quality practices in designated tourism zones. These would include key environmental guidelines, such as the use of solar energy, use of organic produce, recycling of waste, cleanliness and hygiene, courtesy, knowledge of local culture and landscape, among others. This will also help educate tourists about the importance of safeguarding the Himalayan ecology.

(iii) Recognizing the adverse impact on Himalayan ecology of unrestrained expansion in vehicular traffic, each state should impose an entry tax for vehicles entering important hill towns. A similar tourism tax or trekking charge may be levied for all ecologically fragile zones. The proceeds from such taxes should be used for creating better facilities (for example, clean toilets, tourist shelters) and for benefiting local communities.

(iv) Parking fees for private vehicles in hill markets and hill towns need to be raised substantially to discourage such traffic, thereby reducing both congestion and pollution. Each hill town will designate the central parts of the town as walking areas, with access provided by pollution-free electric or CNG buses.

Green Road Construction

Roads are the lifeline of this remote and inaccessible region. However, the construction of roads must fully take into account the environmental fragility of the region. The concerned state governments must consider promulgating, as soon as possible, the following guidelines for road construction in hill areas.

(i) Environmental Impact Assessment should be made mandatory for the construction of all state and national highways, and expressways of more than 5 km length, including in the extension and widening of existing roads. This will not apply to inter-village roads.

(ii) Road construction must provide for the treatment of hill slope instabilities resulting from road cutting, cross drainage works and culverts, using bio-engineering and other appropriate technologies. Cost estimates for road construction in these areas should henceforth include estimates on this account.

(iii) Plans for road construction must provide for disposal of debris from construction sites at suitable and identified locations, so as to avoid ecological damage and scarring of the landscape. Proposals for road construction must henceforth include cost estimates in this regard.

(iv) Hot mix plants must only be set up at least 2 km away from settlements. These sites should have a minimum open area of 200 sq metres and should be already devoid of vegetation.
(v) All hill roads must provide adequate roadside drains and, wherever possible, be connected to the natural drainage system of the area.

(vi) Alignment of proposed roads should avoid fault zones and historically landslide-prone zones. Where this may not be possible, adequate measures must be taken to minimize associated risks, in consultation with experts.

Water Security

The importance of the Himalayas as a natural storehouse and source of water must be acknowledged fully. The region is already under water stress, with the drying up or blockage of many water sources and natural springs. The following immediate actions are necessary:

(a) Each Himalayan state must initiate a state-wide programme for rejuvenation of Himalayan springs and protection of high-altitude lakes.

(b) The government must provide legislative protection for mountain lakes, natural springs and key water sources, and prohibit construction activities along these water bodies.

(c) Relevant bodies should inventory mountain springs (active and dormant) and also carry out detailed geological mapping to identify spring recharge zones.

Building Environmental Awareness

(a) Local festivals and fairs must be utilized to spread environmental awareness, with the protection of the environment being linked to local cultures and festivals.

(b) Central and state governments must together organize an annual festival of the Himalayas to celebrate local cultures, which demonstrate ways of sustainable living for resilient societies in harmony with the pristine nature of the Himalayas. This will also expose the rest of the country to the importance of the Himalayas in India’s national life.

Safeguarding the Himalayas: A National Endeavour

There are grave concerns about the challenge the country faces from the impact of climate change on the fragile and life-sustaining ecology of the Himalayas. This spectacular mountain chain is inextricably linked with India’s civilizational ethos and the spiritual and cultural sensibility of our people. It is necessary to initiate and develop a truly national endeavour to safeguard the pristine ecology of the Himalayas. A coordinated approach between the Union and state governments in the Himalayan states is imperative if we are to successfully meet this challenge. It is in this spirit that the prime minister should convene a meeting of the chief ministers of the Himalayan states. The deliberations at the meeting, and the adoption of certain urgent and specific guidelines and decisions, would be the first step in formulating a comprehensive and ambitious national mission for sustaining the Himalayan ecosystem. The prime minister and the chief ministers should meet annually to exchange views, share experiences, review progress and evolve practical and effective measures to make this national mission a success.
Regulating New Technologies: Three Central Principles

ANANTH PADMANABHAN

Technology has significantly driven India’s growth over the past decade. Be it the rise of well-funded startups and ‘unicorns’, the imaginative use of technology for governance, or the emergence of India as a hub for R&D activity and a test bed for product innovation, technology is an important driver for growth in India. A 2018 report by the Startup India Initiative states: ‘The ecosystem comprises of over 14,600+ Startups, approximately 270 incubation & business acceleration programs, 200 global & domestic VC firms supporting home-grown Startups, and a fast-growing community of 231 angel investors and 8 angel networks. India also boasts of being home to the 3rd largest unicorn community, with over 16 high valued Startups having raised over $17.27 billion funding, with overall valuation of over $58 billion.’

But with this exponential growth comes a set of policy and regulatory challenges. First, government policy and the regulatory framework need to be aligned to enable the growth of a robust technological ecosystem, rather than impede it. The global competition for leadership positions in emerging technology domains, such as artificial intelligence, drones, gene editing and other areas, has become aggressive, with China becoming a lead contender. This global race demands impactful innovation policies that ease up creative and inventive activity, but in a responsible manner.

Second, as various incidents post 2016 demonstrate, the rise of the digital has created new vulnerabilities and new types of harm to individual and group rights. A digitally connected ecosystem is rife with security concerns, which are exacerbated when digital literacy
does not keep pace with digital use. Moreover, with personal data becoming a critical tool for monetization and profiling, the incentive for both industry actors and the state to secure such data and respect individual privacy is quite low. Both the Facebook–Cambridge Analytica controversy and the unrestricted seeding of Aadhaar data in multiple databases to build a 360-degree view of citizens indicate distinctive kinds of threats to individual and community rights. Therefore, respect for privacy and individual/community rights must be externally imposed, with regulations playing a part in this process. In short, developing an indigenous regulatory framework for new technologies is a pressing need for India. Three central principles are integral to this transition.

Three Central Principles

The first principle for regulators and policymakers to bear in mind is clear identification of the problem that regulation must address. While this is not unique to the technology context, there are a few specificities in this field that make this principle worth emphasizing. Often, technological change affects sectors that are under an existing regulatory apparatus, as seen in the case of online cab aggregators or food delivery services. When regulators attempt to transplant this apparatus to a new factual reality, a common mistake is to assume that regulations must address the same set of problems as witnessed in the earlier non-tech scenario. But in doing so, the regulatory response addresses more problems than required, because technology-enabled models are likely to sort out at least some concerns. This response also presents the danger of under-inclusion as new challenges raised by technology-based models may be missed in the process. Therefore, it is imperative to clearly identify surviving and new problems caused by technology, separate those that demand immediate regulatory attention from others that may only require a wait-and-see approach, and then develop targeted regulatory and monitoring strategies for each of these concerns.

For instance, the draft e-commerce policy released for discussion in 2019 defines ‘e-commerce’ as including (i) goods, including digital products and (ii) services, through electronic network. Evidently, this is an extremely wide definition that brings within regulatory control a wide range of activities from online retail to app-based health delivery. The document also attempts to outline policy for a host of different problems: data; infrastructure development; e-commerce marketplace regulations such as anti-counterfeiting, anti-piracy and foreign direct investment; consumer protection; payment related issues; export promotion; and content liability exemption, among others. The concerns of social media are far removed from fashion retail, and consumer woes pertaining to online travel booking differ vastly from digital health solutions. The unfortunate result is a heavily diluted effort that portends regulatory overreach. To avoid this in the future, regulatory approach must shift course from deciding in advance the range of business activities that need regulation to identifying the specific problems that proposed regulations must address, under the first principle discussed above. Inability to do so would only cause apprehension and uncertainty for businesses, and extremely ineffective and diluted protection for citizens.

The second principle is to prioritize a risk-based and responsive regulatory approach. When regulating unfamiliar territory, as is mostly the case with new technologies, proclivities to entirely ban an activity or create restrictive pre-activity licensing models are high. The bureaucratic instinct to play safe and apply a ‘precautionary principle’ comes at the cost of innovation and entrepreneurship. Moreover, because many new technologies have cross-cutting impact, even these decisions are taken in silos with one agency or regulator taking a more pro-technology view while another acts more restrictively.

The changing stance on data localization in India suffers from failure to adopt such a risk-based approach. At the heart of this debate is whether private entities must be compelled to store the data of Indian citizens in servers located within India. A compelling rationale offered in support of this measure is that law enforcement officials find it difficult to investigate criminal misconduct when data resides in servers located else-
where. Another rationale offered is the threat to national security because of the possibility that foreign governments can spy on Indian citizens, taking advantage of the fact that their data resides in servers within their jurisdictions. A third rationale argues that localization can help advance a domestic artificial intelligence and data ecosystem, as done by China previously. But amidst these multiple narratives, there is no clear study from the Government of India or any of the regulators about the extent of harm caused because of servers residing outside India, the less restrictive measures that could equally address any of these concerns.

To address these concerns, the regulation of emerging technologies should be risk-based and responsive. This new approach involves detecting undesirable or non-compliant behaviour, responding to that behaviour by developing tools and strategies, enforcing those tools and strategies on the ground, assessing their success or failure, and modifying approaches accordingly. By valuing these processes, the overall approach towards regulation changes in an organic manner. Risk assessment involves multi-stakeholder conversations and an engagement with data that goes beyond projected fears and growth narratives. It entails creating a mechanism meant to gather the requisite information, including engagement with technical bodies. Finally, it also brings about some consensus among different regulatory bodies regarding the kind of enquiry involved, if not the answers to such enquiry. A healthy debate on the risks surrounding a new technology is essential for the creation of a proportionate regulatory framework that balances innovation and protection effectively.

The third principle is to value democratic principles and fundamental rights. The rise of the Internet and digital technologies has resulted in a loss of traditional state power and authority, leading to reassertion of control on the part of the bureaucracy. This reassertion now presents itself in the form of various regulatory controls such as demands to keep the privacy baseline low so that the state can easily access private communications, attempts to monitor online speech and to impose criminal and civil liabilities upon those expressing unpopular or undesirable views, and restrictive business requirements on private actors such as data localization. These controls, increasingly justified on the basis that China has relied on similar interventions to successfully build its innovation ecosystem, carry extremely harmful consequences for the future of democracy in India.

While many of governmental interventions do not come from a place of mala fide intent, it is important to be reminded often, as a polity, and especially so for policymakers and regulators, that India is built on a foundation of democratic values and crucial constitutional safeguards. As our experience with Section 66A of the Information Technology Act, 2000—subsequently struck down by the Supreme Court in Shreya Singhal v. Union of India—a demonstrates, the impetus to regulate online behaviour or technological innovation should not emanate from a deep-seated desire to command and control. Such a desire is likely to result in unconstitutional behaviour and impermissible inroads into the fundamental rights of citizens, including free speech and expression and the freedom to do business. While realities such as the virality of fake news in the age of social media raise serious concerns, responses cannot be built on the assumption that a strong state (like China) can put a stop to these concerns. Moreover, often responses of this kind change the very dynamic of citizen-state engagement in a democracy, leading to possible misuse and a surveillance architecture that evokes fear.

Recommendations

The regulatory interventions coinciding with India’s period of technology-led growth have been a mixed bag. Privacy may have found its ally in the Indian Supreme Court, but the data protection bill has long been in the works without much-needed push from the government to formalize it as a legislation. Moreover, many of the safeguards against misuse of Aadhaar data, emphasized by the Supreme Court when upholding the validity of the Aadhaar Act, have been watered down through a recent ordinance that bypassed legislative scrutiny. The data localization debates reveal uncoordinated action between different power centres within
the government, resulting in both business unpredictability and the fear of censorship through architectural changes to the Internet. Recent proposals in the realms of e-commerce and intermediary liabilities do not indicate well-thought-out measures of regulation that factor in the capacity for enforcement, the impact on fundamental freedoms including speech and business autonomy, or the proportionality of state action.11

Yet, there have been some green shoots as well. The drone policy is one such, coming as it did from a place of outright ban on the technology in 2014 to a state-of-the-art reg-tech solutions like Digital Sky and Regulations 1.0, in 2018, that leave room for further iterations that match the pace of technological advances in this sector.12 The Telecom Regulatory Authority of India’s position on net neutrality has been largely well received across the range of different stakeholders. On digital payments, the government has displayed considerable sensitivity towards various concerns ranging from innovation in the sector to consumer dispute redressal mechanisms and competition concerns. In all these cases, what comes through is some degree of mindfulness to the central principles outlined here. The government should now build on these early successes to develop appropriate regulatory toolkits.

Any regulatory intervention in the field of technology policy must begin with an insistence on a clear outlining of the harms involved and a mapping of the various alternate policy measures that could be potentially taken to address these harms. This is a good starting point for citizens and other stakeholders to develop awareness of the challenges that the state wishes to address, and the fit between these challenges and the proposed regulatory measures. The European Union has insisted on similar measures as part of its ‘Better Regulation’ principles.13 The responsibility cast on the regulator to explain why it is regulating in the manner it proposes can make a significant contribution towards providing certainty, accountability and curbs on arbitrary intervention.

Regulation of new technologies should also enable experimentation with bespoke regulatory approaches and tools, as well as with innovative market solutions, both in a contained low-risk environment. ‘Experimental regulation’ seeks to achieve this objective by providing exceptions to, or exemptions from, existing regulation in a ring-fenced environment.14 In many countries, experimental regulation has taken the form of sandboxing schemes. The UK Financial Conduct Authority’s Project Innovate is a live example of regulatory sandboxing for financial technologies. Other jurisdictions such as Australia, Singapore, Switzerland, Hong Kong, Thailand, Abu Dhabi and Malaysia have also been experimenting with similar initiatives.15 India needs to create more comprehensive thinking across multiple regulators about the efficacy and modalities of such regulatory sandboxes.

As many of the new technologies cannot be confined in clear terms to the regulatory jurisdiction of any one regulator, India also needs to develop strategies for better inter-agency coordination. The data localization controversy revealed how different regulatory and recommendatory bodies were at odds with each other on how to address this issue. Because data is a cross-cutting asset across multiple sectors, it is imperative to build better coordination and some uniformity in decision-making on matters of data governance. In the US, the Obama administration had created an Emerging Technologies Interagency Policy Coordination Committee to tackle the problem of siloed decision-making. Israel has established an inter-agency team to coordinate regulation of virtual assets. India must learn from these exercises and build a more coordinated regulatory strategy for data governance as well as other realms of new technology.

Finally, important regulatory interventions should also carry the mandatory requirement of a rights impact assessment. The current relationship between regulators and civil society is mostly one of direct acrimony and distrust, especially when it comes to regulating the Internet and digital technologies. The only way to usher in a structured change is to mandate a clear rights impact assessment, where the regulator must necessarily gauge the implications of the proposed regulatory approach on fundamental and human rights. Many instances of excessive and harsh regulations can be pre-empted at an early stage if this mechanism is built into the regulatory process.
Regulation and Resources


6. Compare, in this regard, the Reserve Bank of India Directive RBI/2017-18/153 dated 6 April 2018 with the draft National E-Commerce Policy.


