

Knowledge Society Debates: Roundtable Conference, New Delhi

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Session 1: Democracy or technocracy?

Public Science for Public Ends: Rethinking Democracy in a Technological Age

Sheila Jasanoff - Pforzheimer Professor of Science and Technology Studies, Harvard University, USA

It has become an axiom of good government in most democratic societies that public support for science and technology advances the public good. States routinely vie with one another to increase the portion of GDP spent on science, to identify and support key technologies, and to educate their publics to become more scientifically literate. Missing from much of the science policy debate, however, is a deep consideration of the changes that have fundamentally reshaped the production of science and technology over the past century. These changes include increasing specialization, the growth of military as well as civilian science and technology, the rise of mission-oriented science, the increasing involvement of the private sector in designing both the goals and the products of innovation, and the political and environmental challenges of globalization. Drawing on examples such as nuclear power, stem cells, and GM crops, we will explore how these seismic shifts in the landscape of scientific and technological production have reconfigured relations between states and citizens, so that the first premise of science policy—that more public science means more public good—can no longer be unquestioningly accepted. The model of the knowledge-able citizen will be advanced as democracy's best answer to these contradictions and challenges.

The new regulatory politics of electricity in India

Navroz Dubash - Centre for the Study of Law and Governance, Jawaharlal Nehru University, New Delhi

Newly created regulatory bodies in India are the site for emergent consumer politics around electricity. Forged as a means of attracting private capital, these bodies have nonetheless become potential spaces for consumer and citizen engagement around electricity. Recent examples of consumer and citizen action on electricity, and particularly protests over a tariff hike following privatisation in Delhi, suggest that regulation as an institution is poised between being absorbed into politics as usual and creating a genuinely new space for consumer action and political engagement in India.

Democracy versus technology: Understanding the modern large dam in India

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For several decades following 1947, the large dam in India presented itself as a political conundrum. A conundrum that caused many a political imagination to be often voiced in strange tongues. Jawaharlal Nehru, India's first Prime Minister (1947-64), offered one such tone in an oft quoted speech made in July 1954 in which he likened the large dam to a 'modern temple'. Subsequently, in a less remembered speech made before a gathering of engineers and technocrats in 1958, Nehru, as if contrition, bemoaned the quest for big dams as a 'disease of gigantism'. Overwhelmingly however, the large dam appeared class neutral, if not beyond politics. Such was the apolitical allure that Henry C. Hart, an American academic and commentator on India, declared with much gusto in a book published in the late 1950s that the large dam with its multi-purpose reservoir had 'correctly come to symbolize the engineering of the era of nation-building'. Put differently, the 'development of rivers' seemed to have charged decolonizing nations with a new technological mission: the giant quest to transform fluvial powers into national assets — hydro-electricity, navigation, irrigation and flood control.

But underlying the project of nation building lay the challenge of getting modern technology to debate the idea of democracy. My brief presentation will essentially take us through this debate by showing how the modern large dam as a political artifact has variously impacted the idea of democracy in Indian.

Politics of ethics: do ethics committees represent the civil society?

Mariachiara Tallacchini - Faculty of Biotechnology, University of Milan (Italy)

Though the law has played a special role in the EU context, helping the harmonization of the different Member States' legal systems, the regulatory needs of the so-called Knowledge Society have gone beyond the traditional features of the law. In this context ethics has increasingly emerged and become a valuable political resource, capable of overcoming the original economic foundation and to shape the EU political and epistemic identity. In this perspective 'institutionalized ethics' has been performed primarily as a politics of ethics, namely as a way to rule society without formal rules. The presentation explores the main features and limits of this "soft normative tools".

Biometrics identification

*Usha Ramanathan - Programme Director for India, IELRC and Lecturer in Law,
Indian Law Institute*

Just look over your shoulder, overhear a conversation, trip into a session for policy making, and biometric identification hoves into view. Beggars, criminals,

encroachers and the poor who are to be nourished by the public distribution system are all fair game for being tagged and monitored. As are passport holders and possibly those seeking driving licences. What is the magic of this technology that gives it this unquestioned popularity? What is its logic? Why have constitutional experts thought nothing of introducing this method, and in all kinds of circumstances? Does this have any resonance with the logic of leaving 'no place to hide', which has moved from mass crimes to terrorism to the routinising of a formula? What is won, and what is lost, in this adoption of a technology? Is it that privacy is no longer relevant? Is this a version of sovereignty and a distorted extension of eminent domain -- in this case, over all people within and in its extended territory -- that a state is presumed to possess? What does it do to power, control, authority?"

Session 2: Whose innovation counts?

Innovation as Commercial Value: Imagining Knowledge, for what social ends?

Brian Wynne - Associate Director of the UK ESRC, Centre for Economic and Social Aspects of Genomics, Lancaster University

The new global knowledge-economy weaves molecular bioscientific knowledge together with physical and information sciences, in the interest of competitive extraction of economic value from what is selectively defined to be science-based innovation. In these processes, the forces of concentration and control, legal ownership and exclusion combine as influences which reach further and further upstream in the life-cycles of scientific R&D in many fields of research. These intensifying and increasingly systematically global investment factors have created a so-called basic science agenda which tacitly reflects imaginations of private commercial value as if this normative horizon were natural. Even, perhaps most especially in domains such as agriculture, these political-economic forces of concentration have created monolithic trajectories of scientific innovation which have become inflexible to social – and environmental sustainability - demands for diversity and distribution in terms of the social grounding of innovation in existing, rooted social and environmental worlds of agricultural knowledge-practices. This presentation will describe European research policies in crop plant sciences which have created a degree of crisis for science, thanks to their own self-defined imaginations of what counts as 'innovation' and the unaccountable commercial-corporate techno-social imaginaries which underpin these.

Innovating for whom? A critical look at global energy innovation

Ambuj Sagar – Professor of policy and technology at Indian Institute of Technology, Delhi.

There has been increasing interest in energy innovation in recent years, spurred by a variety of challenges ranging from climate change to Millennium

Development Goals to energy security. But a closer examination of the scholarly discourse and policy-making in this area reveals some disconcerting disconnects: between actual and perceived energy innovation needs, between the rhetoric and reality of energy innovation efforts, and between the promise of and progress on sustainable development. While innovation certainly offers the potential for significant societal gains and thereby serves as a neutral meeting ground for contending views, I suggest that it can also allow for the diversion of attention away from the social and political complexities that underlie these developmental challenges. This in turn constrains both the possibility of broader gains from innovation as well as discussion of its limitations.

**Linking of science, technology and innovation to development:
Negotiation and contestation in India**

Dinesh Abrol - National Institute of Science, Technology and Development Studies (NISTADS)

Mainstream discourse on the impact of the ways of linking of science, technology and innovation (STI) to development remains focused on the question of achievement of performance of pre-liberalization period national system of innovation (NSI) vis-à-vis the NSI of post-liberalization period in India. Debate is centered on the question of what kind of role can be assigned to the state apparatus with regard to the governance of STI and limited to discussing the impact on extent of achievement of the kind of growth, national competitiveness and autonomy in policy and decision making. Negotiation and contestation on the selection of pathway of development is significantly lacking in the focus to be introduced for addressing directly the question of who-whom of science and technology and of the mobilization of marginalized and excluded from the processes of social design of innovation. Apart from deliberating on the issue of why the discourse between the proponents and critics of market governance model of NSI and STI is failing to focus on the question of who-whom in STI, the paper discusses the experience of implementation of the approaches taken within the various kinds of peoples' movements on the social design of innovation for sustainability and development. It reflects on how the peoples' movements are addressing the questions of socio-technical transition management and with what kind of framings of the connection between development and STI with a view to draw lessons for theory, policy and practice of STI management.

Innovation, Regulation and the Law: Insights from a case-study of reforms in the Indian telecom sector (1991-2001)

Arun K. Thiruvengadam, Assistant Professor, Faculty of Law, National University of Singapore

In an important critique of contemporary practices of legal education, the Scottish legal historian, Alan Watson, has described the law as a 'backward-focused' discipline, which relies primarily on historical and legal precedents to make

advancements. Watson's critique has important ramifications for the law and legal systems more broadly. We have to consider the fact that the law is required to keep up with a staggering number of scientific, technological, sociological and other changes in disparate fields in order to be able to effectively regulate them. If Watson's critique is correct, the law's capacity to respond to innovation is restricted at a very fundamental level.

In my brief presentation, I will seek to show why Watson's claims may bear out in the way the story of telecom regulation unfolded in the first decade of post-liberalization India. Telecom was one of the first sectors to be 'deregulated' and the changes that took place here, were sought to be copied in other important sectors. The use of the 'independent regulatory authority' ("IRA") model was attempted in this sector in a significant manner, which went on to become a trend in several other sectors. Yet, several of these changes were first introduced under the aegis of a law passed in 1885, whose legislative scheme did not anticipate the invention of the telephone, leave alone the more sophisticated telecom technologies that were sought to be regulated in the 90s. Moreover, the IRA model is one that has worked in the U.S., whereas much of independent India's parliamentary and governance model owes its inspiration to the models prevalent in the UK. The imposition of an IRA model on a system of parliamentary governance which was quite unsuited for it, led to predictable clashes and rapid changes in institutional structure and design in the telecom regulator in a bid to counteract ensuing tensions. All along, the actual providers of technological services kept complaining that the regulatory model in place was wholly unsuited for the actual needs of the telecom industry. By reflecting upon the causes that may have led to such tensions in the volatile arena that telecom regulation between 1991-2001 proved to be, I seek to draw insights that may help law in accounting for innovation more effectively.

Session 3: Risk and uncertainty

Science, precaution and participation in governance of technological risk: from tension to synergy?

Andy Stirling - Professor and Director of Science at SPRU and Co-Director of STEPS Centre, University of Sussex, UK

In current high-profile debates over the management of technological risk, many see a contradiction between science and innovation on the one hand and precaution and 'public engagement' on the other. Moves in either of these latter directions are often seen alternatively (positively) as matters of democratic principle or (negatively) a reflection of 'political correctness'. Either way, there appears to be a tension with the role of objective expertise and rigour in the governance of technology. Likewise, increasing prominence of the precautionary principle is sometimes represented as a capitulation to irrational public anxieties over new technology. Where no distinction is made between different pathways for technological innovation, there arise strong fears that precaution presents a

threat to technological progress itself. Starting from a broad view of the nature of technological progress - and using examples drawn from debates over energy technologies and agricultural strategies – this presentation will explore some of the gaps and misunderstandings in current high level policy discourses over science, precaution, participation and progress. A number of practical implications will be explored both for appraisal methods and general policy making.

Risks, uncertainties and the institutions of agricultural knowledge

Rajeswari Raina - Centre for Policy Research, New Delhi

Governing institutions (rules, norms, laws, habits) have yet to confront socially and politically constituted and constructed nature of agricultural science and technology. The assessments of risks (when outcomes are evident or known) and uncertainties (when outcomes are not knowable) are meaningless, if they do not relate to socio-political and cultural contexts. This presentation will draw from the examples of arsenic pollution of rice cultivation, including from the debates on GMOs and climate change and argue that institutional reform is imperative if knowledge, emerging from both natural and social sciences, should enable better human and ecological systems.

Cultural sub-politics of agrarian risk: Coping with death, dearth and debt

Esha Shah – Institute of Development Studies, University of Sussex, UK

The grotesque images of hunger related vulnerability were commonly deployed for a myriad of political purposes since the mid nineteenth century. It has been now a well-known chapter in the history of liberal state that famine and hunger were ultimately equated with scarcity and this causation has fundamentally shaped the agrarian technological change over the period of century and half, if not more. After half a century since the introduction of green revolution, the tropes of vulnerability and associated scarcity in India have returned once again. Recent incidents of farmers' suicides in various parts of India are linked to what is widely called agrarian crisis which is associated with the shortage or decline of –growth, productivity, yield, price, credit, resources, subsidies, and state welfare – all variants of political economy of scarcity calling for relevant institutional change. Compared with these institutionalist approaches, the cultural sub-politics of vulnerability and its relationship with scarcity are barely theorised in the current academic practices.

In my presentation, I will first show that the culture of agrarian vulnerability and rural alienation symbolised by suicides, paradoxically, is also the culture of considerable social, political and material influence and even dominance. Those farmers who have been principally benefited from the green revolution and whose voices have been politically well-represented are at the core of agrarian distress. This contradiction counters the liberal assumption that scarcity and vulnerability are reciprocally related. Secondly, I will argue that the epicentre of

agrarian vulnerability and rural alienation may not be entirely located in scarcity but intimately rooted in the historically bounded cultural imagination of the self and other, glued by the ideologies of hierarchies. For the vulnerable experiences, whether scarcity actually or really exist is less relevant than how the idea of scarcity is translated in the cultural milieu. The fear of pauperisation translates in cultural milieu as a threat of violence and humiliation and the imagination of a life not worth living for which the idea of scarcity is hypothetical and metaphorical. Thus, I ultimately intend to show that contrary to the assumptions of liberal institutions, the relationship between real scarcity and agrarian vulnerability is not straightforward but highly contrived.

The future of our cities: The risk of going ahead as usual

Dinesh Mohan - Centre for Biomedical Engineering, Indian Institute of Technology New Delhi

In a few decades a vast majority of the world's population will be living in cities. At present people in urban areas face multiple health threats due to our mobility patterns. These include: injuries and deaths due to traffic crashes, illnesses from pollution, obesity from lack of exercise, irritation and disturbance from noise, social exclusion and lack of job opportunity due to barriers created by busy roads and distances, family tension due to less time at home, and threat to our very existence by global warming. All these issues are interrelated and complex with counter-intuitive cause and effect relationships. Technological innovations alone are unlikely to solve these problems. The scientific basis for analysing the phenomena is weak. This presentation will attempt to highlight the complexity of the problem and point a way forward.