

The Power of Uncertainty

Reflections on the Nature of Transformational Initiatives

Malcolm Adiseshiah Centenary Lecture

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Mihir Shah¹

It is indeed a great honour for me to deliver the Malcolm Adiseshiah Centenary Lecture. Dr. Adiseshiah was one of the great humanists and institution builders of our time. The Madras Institute for Development Studies is, of course, a living testament to his vision, dynamism and generosity. But what I find truly fascinating is the breadth of institutions he was deeply associated with. For he was also Chairman, Centre for Development Studies, Thiruvananthapuram, Tata Institute of Social Sciences, Mumbai, Bharat Gyan Vigyan Samiti and the International Institute of Educational Planning, Paris. And President, Tamil Nadu Council for Science and Technology for over a decade. This is an incredible range to span not only in disciplinary terms but also in the kinds of diverse engagements it represents. I see my lecture today as a tribute to this richness of Dr. Adiseshiah's concerns and commitments. I say this especially because, as will be evident towards the end of my lecture, it is the coming together of precisely these kinds of diverse institutions that holds the key to a more hopeful future for India's most disadvantaged people.

I spent the last 20 years of my life living and working with the tribal people of central India, trying with them to forge concrete solutions to some of the most difficult challenges of our time -- of water and livelihood security. Over the past 10 months, I have been working as Member, Planning Commission handling Rural Development, Water Resources and Panchayati Raj. This lecture is an attempt to put together some of my reflections as a participant in the struggle for change, to share with you some of what I have learnt in this process.

My central question before you today is one that has repeatedly arisen over the years and with even greater urgency in the recent past -- what is the way to act in a world beset by

¹ Member, Planning Commission, Government of India. Views expressed are personal.

fundamental uncertainty? If uncertainty (of many kinds, as I will elaborate) is at the heart of the knowledge of the world that is possible for us, what implications does this have for transformational initiatives, whether by government, social activists or citizens? The question gains renewed attention thanks to the grave crisis the world economy has just been going through. And due to the emergence of climate change as a central issue defining our time. This is, therefore, as opportune a moment as any to revisit some of the most fundamental questions regarding Economics as a Science. I will reflect on the nature of knowledge that Economics provides by *inter alia* drawing upon the work of some of the greatest economists the world has ever seen. I will, therefore, be speaking today as an economist but will also perforce draw upon insights from other disciplines, without which I believe we cannot do full justice to the questions on hand.

1. Three Kinds of Uncertainty

Uncertainty related to Time

The natural starting point for an economist dealing with uncertainty is Knight (1921) which introduced the distinction between risk and uncertainty. Briefly understood, risk describes a future outcome whose probability can be reasonably determined, while uncertainty refers to an event whose probability cannot be known in advance. We could even call it a distinction between calculable and incalculable uncertainty.

The most important text that took uncertainty seriously was Keynes' *General Theory*. But Keynes' clearest statement on the matter is to be found in an article in the *Quarterly Journal of Economics* in February 1937, which he wrote in response to critics of the *General Theory*:

“... our knowledge of the future is fluctuating, vague and uncertain. . . By ‘uncertain’ knowledge, let me explain, I do not mean merely to distinguish what is known for certain, from what is only probable. The game of roulette is not subject, in this sense, to uncertainty. Or, again, the expectation of life is only slightly uncertain. Even the weather is only moderately uncertain. The sense in which I am using the term is that in which the prospect of a European war is uncertain or the price of copper and the rate of interest twenty years hence. About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know.”

It is stunning to read perhaps the greatest economist of the 20th century affirm radical uncertainty in no uncertain terms! Of course, Keynes laid the foundations of the modern welfare state whose interventions he saw as correcting the fallibility of the market mechanism.

Arguing from the opposite end of the ideological spectrum but agreeing with Keynes fundamentally on the nature of knowledge in Economics was Friedrich von Hayek. In his classic 1945 piece *The Use of Knowledge in Society* and his 1974 Nobel Lecture *The Pretence of Knowledge* Hayek questions the very possibility of rational calculation by central planners. Hayek was highly critical of what he termed scientism: a false understanding of the methods of science, which has been forced upon the social sciences – such as the view that all scientific explanations are simple two-variable linear relationships. Hayek points out that much of science involves the explanation of complex multi-variable and non-linear phenomena. Of course, the irony is that Hayek had a touching faith in the power of unrestrained markets, assigning them near omniscience, quite ignoring his own insights into the nature of knowledge and also ignoring the fundamental revolution in Economics inaugurated by the work of Keynes.

Perhaps the economist who captures most beautifully the insights of both Keynes and Hayek is the relatively unsung G.L.S. Shackle. In a much more radical position he questions both Hayek's naiveté about markets and Keynes' simplistic optimism about state intervention. Shackle introduces the notion of inceptive choice, where the person who chooses cannot "foreknow what the sequel of his present choice will be, for if his own choices are inceptive, if his own choices are non-implicit, in some degree, in their antecedents, so are the choices of others and so are all the choices-to-come of himself as well as others" (Shackle 1975, p.23). Since "the ultimate permissive condition of knowledge is the repetition of recognisable configurations" (Shackle, 1972, p.6), this limits the possibilities of knowing the courses of action that will be chosen in future. Shackle criticises his teacher Hayek for not fully acknowledging the implications of the decision-maker's "unknowledge" for the possibilities of self-regulation in a market economy.

Shackle's work potentially takes economics into novel territory such as the role of imagination to assess the plausibility of alternative outcomes while taking economic decisions.

But the very freedom that is the basis for imagination makes perfect knowledge an impossibility. Shackle, therefore, posits a fundamental hiatus between freedom and knowledge, as also between time and reason. In an incredibly insightful, less than 3-page long, Chapter 2 of his 1972 work *Epistemics and Economics* titled *Time, Novelty, Geometry*, Shackle writes:

“Time is a denial of the omnipotence of reason. Time divides the entirety of things into that part about which we can reason and that part about which we cannot. Yet the part about which we cannot reason has a bearing on the meaning of the part that is amenable to reason. The analyst is obliged to practice, in effect, a denial of the nature of time. For he can reason only about that which is *in effect* complete; and in a world where there is time, nothing is ever complete.” (p27).

We must immediately recognise, however, that Shackle’s work has remained on the fringes of mainstream economic theory. The standard response to uncertainty in Economics can be traced to von Neumann and Morgenstern’s (1944) expected utility theory, which led on to Nash’s (1951) non-cooperative equilibrium and game theory, Savage’s (1954) reformulation of expected utility theory and climaxed in Arrow and Debreu’s (1954) derivation of the necessary and sufficient conditions for existence and optimality of general equilibrium under uncertainty. Of course, these formulations were challenged by Allais (1953) and Arrow (1963) himself acknowledged the empirical implausibility of the relevant necessary and sufficient conditions in the face of uncertainty. Indeed, even more recently, Arrow has warned that “vast ills have followed a belief in certainty, whether historical inevitability, grand diplomatic designs or extreme views on economic policy. When developing policy with wide effects . . . caution is needed because we cannot predict the consequences” (Arrow, 1992, p46).

Over the last 40 years, but especially following the work of the psychologist and 2002 Economics Nobel Laureate Daniel Kahneman with Amos Tversky on prospect theory, the expected utility hypothesis has been under attack and alternatives proposed. For our purposes, however, it is important to recognise that all of this work is concerned with one project – finding probabilistic solutions aimed at taming uncertainty, attempting to collapse the radical distinction between risk and uncertainty first postulated by Knight and later developed by Keynes and Shackle. For as Keynes has said, “The calculus of probability was supposed to be capable of reducing uncertainty to the same calculable status as that of certainty itself. Actually, however, we

have, as a rule, only the vaguest idea of any but the most direct consequences of our acts” (Keynes, 1937).

Before going on to elaborate the other sources of this inescapable uncertainty, I will close this section with a most telling example of the point I am making. Long-Term Capital Management (LTCM) was a U.S. hedge fund founded in 1994, with 1997 Economics Nobel Laureates Myron Scholes and Robert Merton on its Board of Directors. LTCM used complex mathematical models to take advantage of trading strategies such as fixed income arbitrage, statistical arbitrage and pairs trading, combined with high leverage. LTCM was initially highly successful with annualized returns of over 40%. But it lost \$4.6 billion in less than four months in 1998 and collapsed by early 2000. The failure of LTCM is a classic case-study of the impossibility of accurately anticipating unforeseen and relatively unforeseeable events such as the 1997 East Asian financial crisis and Russia’s 1998 default on its sovereign debt. LTCM collapsed despite having the best economists on its Board because it mistakenly thought it could conjure away an uncertain and unknown future by turning it into a set of calculable risks (Lowenstein, 2000). Similar mayhem has occurred across the world in the latest economic crisis.

Uncertainty related to Context

Apart from the “time” dimension of uncertainty which has found recognition in Economics, we need to also acknowledge the existence of a contextual element in uncertainty, which disciplines like Anthropology have best brought to the fore. The question they ask is: how do we understand the “Other”? Or, what happens when we try to understand the other? One of the most evocative treatments of this question is to be found in the work of the Brazilian anthropologist Eduardo Viveiros de Castro (2003).² As de Castro explains,

“The real problem lies in knowing which are the possible relations between our descriptive practices and those employed by other peoples. There are undoubtedly many possible relations; but only one impossible relation: the absence of a relation. We cannot learn these other practices — other cultures — in absolute terms; we can only try to make explicit some of our

² I thank Mekhala Krishnamurthy for guiding me to this reference.

implicit relations with them, that is, apprehend them in relation to our own descriptive practices.” (p11).

de Castro cautions us against “the fantasy of an intellectual intuition of other forms of life ‘in their own terms,’ for there is no such thing. ‘Their terms’ are only determined as such in relation to ‘our terms,’ and vice-versa. Every determination is a relation. Nothing is absolutely universal, not because something is relatively particular, but because ‘everything’ is relational” (ibid.).

One of the richest descriptions of this relationality is to be found in the work of the German philosopher Hans-Georg Gadamer. In his 1960 magnum opus *Truth and Method* Gadamer expresses the matter through his notion of the fusion of horizons:

“What do we mean by ‘placing ourselves’ in a situation? Certainly not just disregarding ourselves. This is necessary, of course, in that we must imagine the other situation. But into this other situation we must also bring ourselves. Only this fulfils the meaning of ‘placing ourselves’. This placing of ourselves is not the empathy of one individual for another nor is it the application to another person of our own criteria but it always involves the attainment of a higher universality that overcomes not only our own particularity but also that of the other. To acquire a horizon means that one learns to look beyond what is close at hand, not in order to look away from it, but to see it better within a larger whole and in truer proportion. Understanding is always a fusion of horizons which we imagine to exist by themselves.”(pp. 271-3).

Our knowledge thereby loses the certainty of its own voice by acknowledging the need to listen to and understand the knowledge produced by the other whose situation we claim to be trying to transform. Thus, the acknowledgment of the otherness of the other demands recognition of at least 5 different elements that shape our knowledge:

a. The context where we are trying to intervene is not a blank canvas or as the Roman legal term goes, *terra nullius* (“land belonging to no one” or “empty land”). These are situations and contexts with a dynamic of their own. The impact of what we do is mediated through the ongoing dynamic of the context where our initiative rolls out. We need to study and understand this dynamic.³

b. What is more there is a great diversity to this dynamic across the contexts where we intervene. So our initiatives need to be sensitive to the variety of dynamics that we encounter.

³ Much of the devastation wrought by colonial settlers in their assignation with the aboriginal/indigenous people across the globe had to do with the presumption of *terra nullius*.

- c. These contexts also have also knowledges of their own that are often paradigmatically different from ours and from each other. An appreciation of these and an effort to understand them will greatly benefit the course of our own initiative.
- d. Whether we like it or not, however unaware we may be of this, our interventions are not unidirectional or omnipotent. They, willy-nilly, transform those who seek to bring about change – beyond their wanting, doing or even knowing. Change will, therefore, never flow univocally from one direction.
- e. The presence of the other also compels the question: who is the calculator? Is there at all a decision-maker acting in pristine isolation and autonomy? What is the meaning of studying the calculation of the individual, atomistic *homo economicus*, in a world characterized by deep interdependencies?
- f. Finally, we need to recognise that transformational initiatives are generally located in contexts of deep inequalities and discrimination, some historically inherited, others created anew, whether based on gender, caste, ethnicity, race, community or class. Every intervention inhabits a contested terrain and itself becomes a site for further contention and contestation. This makes outcomes profoundly uncertain and indeterminate. It also demands an understanding of questions of power and justice and the articulation of an appropriate approach towards them.

Uncertainty related to Nature

Nature has its own dynamic and autonomy that circumscribes and shapes human action. The current crisis of global warming is an example of what happens when we act as if Nature does not matter. The roots of the crisis may be traced to the way Economics has sought to conceptualise itself and its relationship with Nature.

The founders of neo-classical economics, on their own testimony, aspired to create a science patterned exactly on Newtonian Mechanics. Newtonian Mechanics could visualize change only as locomotion, which is both qualityless and reversible. The economic process is seen here as a circular flow between production and consumption, with no outlets and no inlets.

This flow is isolated, self-contained and ahistorical, neither creating nor being affected by qualitative changes in the natural environment within which it occurs. Keynesian macro-dynamics (starting with Harrod) and all its concepts of national income, investment and incremental capital-output ratio also find no place for physical entities. Even the Classical Political Economy of Ricardo expressly saw land as a factor immune to qualitative degradation ('the original and indestructible powers of the soil'), and though Marx was centrally concerned with dynamics, viewing the economic process as essentially historical and qualitative in character, he also did not integrate natural resources into his main analysis. It is true that Marx speaks of labour as a "process between man and nature" (Marx, 1976, p. 283). But the terms of this interaction are that "man, through his own actions, mediates, regulates and controls the metabolism between himself and nature" by working on "objects of labour that are spontaneously provided by nature" (ibid, p. 284). This dual conception of "free gifts of nature" and the imperative to exercise "control over nature" runs through the entire gamut of thinking in Economics. Progress is seen as co-terminus with the conquest of nature.⁴ Allied to this is the presumption that unlimited quantities of waste can be costlessly dumped into the bottomless sink of the environment. Along with the assumption of free gifts goes also the assumption of free disposal.

Following Debreu (1959), the neo-classicals posited the 'rational expectations hypothesis'⁵ which presumes that decision-makers in the market know the probability distribution of future outcomes, the future being visualized as stationary and stochastic (Davidson, 1982, p. 182).⁶ "At the initial date there should exist a complete set of forward, contingent commodity markets, on

⁴ "It is the necessity of bringing a natural force under the control of society, of economizing on its energy, of appropriating or subduing it on a large scale by the work of the human hand, that plays the most decisive role in industry" (Marx, 1976, p. 649)

⁵ The hypothesis entails "supposing that the entire sequence of future prices will be 'announced' at the initial date in order that the inter-temporal equilibrium is sustained" (Dasgupta and Heal, 1979, p. 337). They deploy the hypothesis despite an awareness that "we simply do not know how expectations are formed. But we do know that rational expectations yield tidy formulations. These are easy to work with. This forms the motivation for the constructions that follow. But it is worth bearing in mind that as a description the rational expectations hypothesis is likely to be way off the mark here" (ibid.). Quite clearly, considerations of neatness and ease weigh more heavily than those of accuracy of description.

⁶ A stochastic process is stationary if the random variables are well-defined for all points in time and if their cumulative probability distributions are independent of time.

which it is possible to buy or sell goods for delivery in any future time-period and state of the world” (Dasgupta and Heal, 1979, p. 472). Such an approach can provide accurate predictions only if the stochastic process is ergodic—but that is ruled out when we are dealing with irrevocable ecological phenomena which produce a whole range of effects unobservable by the price system.⁷ As Shackle has shown there are a range of phenomena for which no ‘pre-image’ exists in our minds. We have no previous observations on the basis of which probability distributions can be constructed since the phenomena we are dealing with are unprecedented. This means that we cannot have an “omni-competent classificatory system” for listing hypothetical scenarios which are endless and beyond human imagination (Shackle, 1972, p. 18).⁸

Another neo-classical device of dealing with the problem of uncertainty is to discount the future. This approach could be said to derive from the contributions of Gray (1914) and Hotelling (1931).⁹ The market mechanism supposedly mirrors the preferences of individual economic agents while allocating resources efficiently. When the problem is inter-generational, we run into the ontological difficulty that many of the relevant economic agents are not yet in existence to be able to express their willingness to pay!¹⁰ And in discounting the future it is assumed that the future will be brighter than the present. But a high rate of discount will also imply a faster rate of depletion,¹¹ which could mean that the growth path becomes unsustainable and that the future ends up being bleaker than today. The key problem here is again uncertainty. For “the discounting of time is at one and the same time the discounting of uncertainty”

⁷ After their analysis is complete, Dasgupta and Heal add with complete honesty: “it is clear that the foregoing construction is of very little use for analysing resource markets in the world we know’ (op. cit., p. 349). At another point they say, “the rational expectations hypothesis . . . is so far-fetched. Each individual is required to possess the correct theory of how the economy behaves in order to make the hypothesis credible. Such a requirement is, however, not credible” (ibid., p. 436).

⁸ Methodologically, this leads Shackle to advocate an exciting diachronic approach for unraveling the ‘broad current of self-determining, or organically evolving history’ (ibid.).

⁹ Right from the start, however, there was a lively recognition of the fact that the whole procedure entailed serious ethical problems, because of which it was not found acceptable by most economists till as late as the 1960s. Ramsey was the first and most trenchant critic: “we do not discount later enjoyments in comparison with earlier ones, a practice which is ethically indefensible and arises merely from the weakness of the imagination” (Ramsey, 1928, p. 543). Harrod regarded it as “a polite expression for rapacity and the conquest of reason by passion” (Harrod, 1948, p. 30). See also Pigou (1932) for similar observations.

¹⁰ See Martinez-Alier (1987, Ch.11) for a brilliant exposition of the consequences of methodological individualism for the inter-generational allocation of resources. Standard discounting procedures do little more than ensuring a ‘trickle ahead’ for future generations. See Norgaard and Howarth (1991).

¹¹ In his 1974 Richard T. Ely Lecture, Solow expresses the judgment that “the market will tend to consume exhaustible resources too fast” (Solow, 1974, p. 12)

(Perrings, 1987, p. 116), the latter being an increasing function of time. And the higher the discount rate, the more we will deplete an exhaustible resource while raising the level of economic activity. This will imply higher disposals into the eco-system, which will in turn, bring about environmental changes, raising the level of uncertainty. This will once again raise the discount rate and so on . . . Thus, the device meant to tackle the problem of uncertainty only ends up aggravating it!¹²

Following the publication in 1971 of Nicholas Georgescu-Roegen's *The Entropy Law and the Economic Process* what is called for is a revolution in economic thinking, nothing short of a Kuhnian paradigm shift, which compels the abandonment of the mechanistic dogma by forcing the realization that qualitative and irrevocable changes necessarily characterize the environment of which economic processes are a part—that both the assumptions of free gifts and free disposal are untenable, there being a dynamic, two-way inter-relationship between the economy and the environment. We must see the macro-economy as an open sub-system of the finite natural ecosystem and not as an isolated circular flow of abstract exchange value.¹³

Viewed in the light of the Entropy Law, the economic process is, in fact, not circular, but unidirectional, involving a continuous transformation of the flow of low entropy received from the environment into high entropy or irrevocable waste which is returned to the environment. This is a one-way flow, not a circular one. The flow of blood is to the circulation of exchange-

¹² In a study of the twin implications for environmental preservation of uncertainty and irreversibility, Arrow and Fisher concede: “if we are uncertain about the pay-off to investment in development, we should err on the side of underinvestment . . . Given an ability to learn from experience, underinvestment can be remedied before the second period, whereas mistaken overinvestment cannot, the consequences persisting in effect for all time” (Arrow and Fisher, 1974, p. 317). The authors cite “extinction of a form of life, the destruction of a unique geo-morphological phenomenon, the toxicity and the persistence, indeed the increasing concentration, of the hard or non-degradable pesticides” (ibid., p. 319) as examples of irreversible changes in the environment produced by economic activity.

¹³ Alfred Marshall in his magnum opus *Principles of Economics* suggests; “The Mecca of the economist lies in economic biology” (Marshall, 1920, Preface to the 8th edition, p. xii); “The forces of which economics has to take account are more numerous, less definite, less well known, and more diverse in character than those of mechanics; while the material they act upon is more uncertain and less homogeneous. . . economics, like biology deals with a matter, of which the inner nature and constitution, as well as the outer form, are constantly changing. . . economics has no near kinship with any physical science. *It is a branch of biology broadly interpreted*” (ibid., Appendix C, p. 637, emphasis added). However, in Marshall's own body of work, the influence of these insights can be said to be virtually non-existent. This could be because he saw himself as writing only the Foundations, which in his view, “must give a relatively large place to mechanical analogies” (ibid., Preface to the 8th edition, p. xii).

value as the digestive tract is to the unidirectional entropic flow, beginning with environmental resources and energy, through firms and households, and ending with high-entropy waste into environmental sinks.¹⁴

What is more, this entropic flow has a continuously degrading impact on the environment from which the economy must incessantly draw its low entropy. Each qualitative transformation of the environment within which the economy operates, demands a re-adaptation from the economy. Thus, the very sustainability of the economic process depends on its ability to so adapt. No model which seeks to understand the economy can be complete if it ignores the broader eco-system of which the economy is a part, and the co-evolutionary path of the sub-system and its parent.¹⁵ The changes in the environment are both exogenous and, increasingly in our high-entropy age, caused by the interaction of the global economy with the environment.¹⁶

One could say that it is the pace at which low entropy is pumped from the environment into the economy that limits the pace of economic development. Constantly, therefore, the economic process calls upon human beings, much like Maxwell's demon¹⁷, to filter and direct environmental low entropy towards the satisfaction of our economic goals. Based on such a vision, one could describe the challenge of economic development as not merely the multiplication of the filtering mechanism based on existing sieves, but much more as the imaginative task of the innovation of finer sieves (technologies) to filter and thereby reduce the proportion of low entropy ending up as waste.

In such highly complex and highly coupled systems, characterised by both intricate interconnections, as well as novelty, uncertainty has a deep presence. For we still have significant

¹⁴ This corresponds to what biologists call the 'metabolic flow' through which a living organism sustains its highly ordered structure by sucking in low entropy from the environment to compensate for the continuous entropic degradation it is subject to (see Erwin Schrodinger, 1944).

¹⁵ Co-evolution is once again a biological concept which describes the reciprocal relationship between two closely interacting species (see Norgaard, 1984).

¹⁶ "The virtue of the thermodynamic approach to evolution is its ability to connect life *ecologically* to the rest of nature through shared matter and energy flows" (Wicken, 1988, p. 442).

¹⁷ James Clerk Maxwell (1871). A fabled minuscule demon posted near a microscopic swinging door separating two gases A and B of equal temperature. The demon would allow only faster molecules to go from A to B and only slower ones to move in the reverse direction, thus raising the temperature of B relative to A, defying the Entropy Law.

levels of ignorance about upcoming threats, most severely highlighted by the current context of climate change, that are at best poorly understood and at worst completely unknown.

Before going on to the main body of my lecture today, which is concerned with teasing out the implications of uncertainty for the nature of our transformational initiatives, let me try and summarise in yet another way the three kinds of unknowns that we are typically likely to encounter.

What we Know and What we do not Know

		META – LEVEL	
		Known	Unknown
PRIMARY LEVEL	Known	Known knows	Unknown knows <i>(tacit knowledge)</i>
	Unknown	Known unknowns <i>(conscious ignorance)</i>	Unknown unknowns <i>(meta-ignorance)</i>

Source: Bammer *et al* (2009)

The most straightforward kind of uncertainty arises from what may be called conscious ignorance or those matters which we know we do not know enough about. But there can be two other kinds of unknowns as well. One which may be called tacit knowledge describes, for instance, the improvisations of a Hindustani classical musician who knows what she sings but may find it hard to describe, explain or exactly pin it down. The same applies to intuitions that arise sometimes about timing and tactics in politics or in the management of people in an organisational context. And, of course, there are several issues where we do not know what we do not know. Typically, these arise in the context of our interface with Nature, in phenomena which exhibit what Shackle calls “surprise” or what Georgescu-Roegen has called “novelty by combination”. The emergence of the HIV virus is one such example. The entire range of phenomena related to global warming is another.

2. Implications for Action

We have thus established the inescapable presence of what may be termed irreducible uncertainty in our knowledge of the world. We have also understood the many sources and ramifications of this uncertainty. The question for us now is -- how is one to act given the nature of the human predicament? Does the recognition of these multiple uncertainties lead to confusion, enfeeblement, non-action? Does it paralyse us? Or does it define a particular course of action, with certain defining characteristics that derive from our recognition of the ineluctable presence of uncertainty? These are large philosophical, existential questions. But to these I propose to give very specific, concrete answers, which are based on what I have learnt from and will illustrate through the work I have done as part of Samaj Pragati Sahayog, living in a tribal village over the last 20 years and also by reference to my early work in the Planning Commission over the past 10 months. I summarize the principles that need to guide and features that must characterise transformational initiatives under uncertainty and exemplify these through particular instances. I find it useful to divide the implications for action into four sections:

1. The Approach
2. The Interface with Nature
3. Handling Conflict and Contention
4. Institutional Implications

The Approach

- **Uncertainty is the best corrective to fundamentalism:** The biggest contribution of a recognition of uncertainty as an essential feature of human knowledge about society is that it leads to a rejection of the notion of a single truth or the correct path. What saves science from degenerating into a dogma is the acknowledgment of the limits of knowing. This liberates us from the tyranny of certainty, whose claim is a part of the arrogance of power and the aspiration for which leads to a suppression of dissent, enquiry and the sense of wonder and mystery that has to be the beginning of all science. Uncertainty demands humility, the non-presumption of the arrogance of complete knowledge or certainty. It calls

for a non-assertion of the definitive correctness of one's own viewpoint – an acknowledgment that truth resides in a matrix, not in any one location. That it flows from multiple directions and is embodied in relationships.

- **Uncertainty demands nimble-footedness:** Uncertainty requires an openness to mid-course correction as new knowledge is acquired over time. This means an abandonment of the heavy-handed inflexibility which characterises so many of our development interventions.
- **Uncertainty calls for dialogue:** The loss of certainty opens up the possibility that we must also look elsewhere, to other sources for help and support in our quest for knowledge. Uncertainty, therefore, necessitates deep listening and the building of common ground across differences, respecting a diversity of approaches and standpoints regarding the same problem. It calls for an attempt to learn from the context where change is being attempted – an open and rich dialogue, a true engagement, which is both transparent and participatory. For it is transparent and participatory processes that are also more accountable and open to mid-course correction. They also facilitate the building of social trust, which is a powerful and often indispensable resource in situations of uncertainty (Luhmann, 1979).
- **This dialogue neither romanticizes nor devalues so-called people's knowledge:** It would be a mistake to valorize any one form of knowledge over another. We need a corrective to the stridency of both the bottom-up activist and the top-down planner. Neither by itself is appropriate or adequate. What matters, what enlightens, is deep dialogue, an engagement from which something quite unanticipatable, something novel emerges and guides action.
- **Uncertainty demands a fusion of horizons *a la* Gadamer in at least 3 senses –** historical, embracing different stakeholders and across multiple disciplines. Since we attempt change in a specific context and this context has a unique history, is characterised by a range of stakeholders and requires an understanding of issues that reside in a multiplicity of disciplines, effectiveness of action demands that we make the requisite effort to bring together diverse perspectives in each of these three dimensions.

Interface with Nature

- **We must weave our interventions into the contours of Nature:** Once we recognise the contours defined by the balances in Nature, our entire approach needs to shift from an attempt to control Nature towards a creative weaving of our interventions into the flows and dynamics of natural processes. This requires a new imagination, to use Shackle's term, to visualizing the future. The best positive examples of this are the watershed approach and the move towards organic farming. The most significant negative illustration is the interlinking of rivers project. In a country like India which gets seasonal rainfall from monsoons, the periods when rivers have "surplus" water are generally synchronous across the subcontinent. Further, given the topography of India and the way links are envisaged, it might totally bypass the core dryland areas of Central and Western India, which are located on elevations of 300+ metres above MSL. It is also feared that linking rivers could affect the natural supply of nutrients through curtailing flooding of the downstream areas. Along the east coast of India, all major peninsular rivers have extensive deltas. Damming the rivers for linking will cut down the sediment supply and cause coastal and delta erosion, destroying the fragile coastal eco-systems. Most significantly, the plan could threaten the very integrity of the monsoon system. The presence of a low salinity layer of water with low density is a reason for maintenance of high sea-surface temperatures (greater than 28 degrees C) in the Bay of Bengal, creating low pressure areas and intensification of monsoon activity. Rainfall over much of the sub-continent is controlled by this layer of low saline water. A disruption in this layer consequent upon massive interlinking of rivers, which would curtail the flow of fresh river water into the sea, could have serious long-term consequences for climate and rainfall in the subcontinent, endangering the livelihoods of a vast population.
- **The unity and integrity of natural cycles must compel giving up our silo-based approach to transformation:** We cannot expect to find a solution to India's water crisis unless we come out of the silos into which we have divided water and take a holistic view of the hydrologic cycle. We face a situation where the left hand of drinking water (under the

Department of Drinking Water Supply located within the Ministry of Rural Development) acts as if it does not know what the right hand of irrigation (within the Ministry of Water Resources) is doing. Today groundwater is both the single largest source of rural drinking water (over 80%) and irrigation (over 60%). Both tap the same aquifer without any coordination whatsoever. Indeed, we are close to entering a vicious infinite regress scenario where our proposed solution (deep drilling by tubewells) only ends up aggravating the problem it seeks to solve. If one continues along the same lines, the initial problem will recur infinitely and will never be resolved. This regress appears a natural corollary of what has been termed “hydroschizophrenia”¹⁸, which entails taking a schizophrenic view of an indivisible resource like water, failing to recognize the unity and integrity of the hydrologic cycle. I am happy to inform you that this is the central message emerging from the Mid-Term Appraisal (MTA) of the Eleventh Plan we have just completed.

- **Our interventions need to be location-specific** reflecting every element of diversity -- social, cultural and physical. Since we intervene in very diverse contexts, we need to give up the bureaucratic one-size-fits-all, monocultural approach. Across India we are faced with multifarious variations -- in rainfall received, in soil and rock type, in slope and contour, in animal forms, in kinds of vegetation, crop or forest -- and each of these and each combination of these, has different implications for the possibilities of striking, harvesting and storing water as also the possible forms of livelihood (agriculture or pastoralism, nature of crops that can be sustained, kind of livestock to be raised etc). Many of these variations occur even within a small micro-watershed. And this natural diversity has a complex interplay with the socio-cultural tapestry of these regions. That includes values regarding life-goals, priorities (e.g. security in view of pervasive, inherent uncertainty), understanding of and relationship with natural forces and resources. Which have evolved over centuries, if not millennia. This canvas of *differentia specifica* poses a unique challenge to the development

¹⁸ Llamas, R. and P. Martinez-Santos (2005): ‘Intensive Groundwater Use: Silent Revolution and Potential Source of Water Conflicts’, *American Society of Civil Engineers Journal of Water Resources Planning and Management*, 131, no.4

planner, the scientist, the social worker. Those who seek to intervene in any context, but especially in one with such diversity and potential fragility, cannot do so on the basis of a notion of mastery over nature and society. With mastery and control, comes the resort to simple tech-fixes -- monocultural, unilinear, indiscriminate. Irrespective of the specific challenges of each situation, an unthinking, insensitive bureaucracy seeks to impose its own pet solution -- tubewells, eucalyptus, soyabean, Holstein Friesian. Appropriateness does not matter. Sustainability is of no concern. Dialogue is not attempted. History is given a go by. With disastrous consequences.

In our development programmes, unfortunately, we have sought to impose simplistic answers, top-down, without making the effort to understand the context, in all its diversity and complexity. We have been narrowly pre-occupied with single variables like aggregate income, neglecting completely the entire range of issues involved in eco-system resilience and stability. Disciplines, narrowly defined through specialisation, have not spoken to each other. Nor have they spoken to the people in whose name solutions are sought to be developed. They have not been mindful of the balance that must be retained if our interventions are to be sustainable. Nature and society are not to be mastered or subdued. They are, rather, to be deeply understood so that we can weave our interventions in a creative manner into their delicate fabric. Consistently learning each step of the way -- light, nimble and innovative in our tread.

I am again glad to inform you that the MTA of the Eleventh Plan attempts a corrective in this direction. There are many examples of this. I will limit myself to only a few. One of the limitations of the Total Sanitation Campaign (TSC) that we have identified is the narrow range of technology options offered in a country with such immensely diverse geographic, hydrologic, climatic and socio-economic conditions (high water table, flood prone, rocky ground, desert/water scarce areas and extreme low temperatures). This has led to many problems, including non-acceptance by local communities, water pollution in shallow water table regions and waste of public funds. We highlight the need to broaden the

range of models permissible under TSC and offer an initial menu of alternatives derived from detailed consultations with experts and practitioners.

Similarly the MTA highlights the fact that problems surrounding groundwater overuse are not just a matter of the share of extraction in annual replenishment. The relationship between extraction and replenishment is complex and depends upon the aquifers from which groundwater is extracted.¹⁹ The foundation of good groundwater management is a clear understanding of aquifers, which requires knowledge of geology – of rock types and rock structure. For groundwater availability is dependent on the water storage and transmission characteristics of these underlying geological strata. The geological diversity in India makes aquifer understanding challenging, but all the more important because the local situation dictates the approach to managing groundwater. Moreover, these local situations also determine how groundwater overuse, droughts, floods etc. impact drinking water security. The vulnerability of different hydrogeological settings to the level of groundwater development is different.

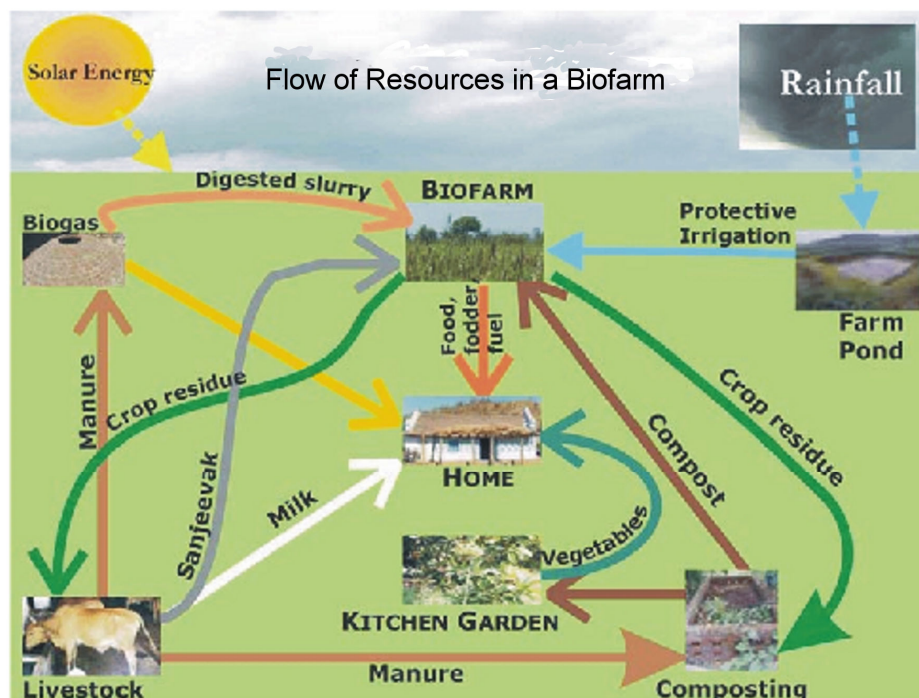
About 54% of India (comprising mainly the continental shield) is underlain by formations usually referred to as "hard rocks".²⁰ Groundwater resource in hard rocks is characterised by limited productivity of individual wells, unpredictable variations in productivity of wells over relatively short distances and poor water quality in some areas. The initial thrust of irrigation by tubewells following the Green Revolution was restricted to India's 30% alluvial areas, which are generally characterized by relatively more pervious geological strata. But from the late 1980s, tubewell drilling was indiscriminately extended to hard rock regions where the groundwater flow regimes are extremely complex. Deeper seated aquifers often have good initial yields, but a tubewell drilled here may be tapping groundwater accumulated over hundreds of years. Once groundwater has been extracted from a deeper aquifer, its replenishment depends upon the inflow from the shallow system

¹⁹ An aquifer is described as a rock or rock material that has the capacity of storing and transmitting water such that it becomes available in sufficient quantities through mechanisms like wells and springs.

²⁰ Hard rock is a generic term applied to igneous and metamorphic rocks with aquifers of low primary intergranular porosity (e.g., granites, basalts, gneisses and schists).

or from the surface several hundred metres above it. The path this water has to traverse is characterized by relatively unfavorable media, which greatly slows down the rate of groundwater recharge. This poses a severe limit to expansion of tubewell technology in areas underlain by these strata. Similarly in the mountain systems, which comprise 16% of India's land area, effects of groundwater overuse do not take very long to appear. As the processes of groundwater accumulation and movement are vastly different in different geological types, the implications of any stage of groundwater development will vary significantly across types of geological settings. Clearly, therefore, a much lower level of groundwater development across 70% of India's land area (hard rock and mountain) could be as "unsafe" as a comparatively higher level in alluvial settings.

- **Factoring in uncertainty demands creation of more resilient systems:** Location-specific interventions, deeply cognizant of diversity necessarily give rise to polycentric, diverse and deeply interconnected systems, which are more resilient in the face of external perturbation. The best example of this is provided by the recent moves towards bio-farming.



The internal stability of an agro-ecological system could be defined as its elasticity toward any sort of external perturbation (Tiezzi *et al*, 1991). This stability is a function of the network of links that can be forged between various components of the system. Such links typically break down when monocultural production practices are adopted as in the Green Revolution or due to processes of environmental destruction such as deforestation and infringement on the domain of common property. These interventions weaken the internal linkages of the system, making it increasingly dependent on external energy subsidies (such as fossil fuels-based chemical fertilisers, pesticides etc.). This makes the system vulnerable to external shocks and market fluctuations which cause a further decline in stability. On the other hand, an integrated agro-ecological system, such as a bio-farm, characterised by energy conservation and material recycling, is considerably more stable. In this system, several new links are forged within the elements of the natural resource base (climate, rainfed agriculture, wastelands, forests, crop residues, animal and human wastes and decentralised energy sources). With soil and water conservation technologies, surface runoff is minimised which improves the level of soil moisture. Loss of essential soil nutrients is also reduced. And harvested runoff is recycled to agricultural land through water harvesting structures. Part of the crop residues are returned to the soil through microbial decomposition. Animal wastes are directed to biogas plants, from which bio-energy is supplied to households for cooking. The organic residues from the biogas plant (digested slurry) go to enrich the soil as nitrogen-rich fertiliser. The biomass surplus generated from land, as a consequence of water and nutrient recycling, in turn, supplies more residues, supports more livestock and creates an expanding decentralised energy base within the agro-ecological system.

Handling Conflict and Contention

- **Uncertainty related to Conflict -- Power, Justice, Love:** The fruits of India's development have been shared very unequally, especially in certain geographies (Adivasi enclaves, drylands, hills) and with specific social groups (Dalits, Muslims). In recent years India has witnessed the fastest growth of high net-worth individuals worldwide. In the same

period in the “other India,” across 200 districts, lakhs of people have committed suicide or taken to the gun. Martin Luther King suggests a different response to injustice — the path of love. But the love he spoke of was no ordinary love. King (1958) elaborates the very different meanings of three words for love in the Greek New Testament. *Eros*, in Platonic philosophy, means the yearning of the soul for the realm of the divine. It has come now to mean a sort of aesthetic or romantic love. *Philia* signifies the intimate love between friends, a reciprocal love, where we love because we are loved. But the love King advocates is best expressed in the Greek word *agape*. *Agape* implies understanding. It intimates a creative, redeeming goodwill for all, an overflowing love which seeks nothing in return. *Agape* is not a weak, passive love. It is love in action (King, 1957).

Through a profound inversion of Nietzsche’s critique of Christianity, King provides a reconceptualisation of the relationship between power and love. Nietzsche sought to determine the conditions of a new affirmation of life by overcoming what he regarded as the nihilistic despair produced by Christian values. King interrogates the very terms of this problematique by providing a radical restatement of his own spiritual tradition. He questions the legacy of viewing love and power as polar opposites, where love appears as a rescinding of power, and power as a rejection of love. King (1967) argues that “power without love is reckless and abusive, and love without power is sentimental and anaemic” (p.247). And this new understanding of power helps King positively formulate the unbreakable bond between love and justice: “power at its best is love implementing the demands of justice, and justice at its best is power correcting everything that stands against love” (ibid).

Love must necessarily take on the larger structures of injustice that stand in its way. This love includes but goes well beyond isolated acts of kindness. At the same time, because love is our weapon, we do not seek to defeat anyone and must try not to end up humiliating those positioned against us. For the struggle is not against persons, it is for transformation of the opponent’s view and the system of oppression. And even more for the self-renewal of those who work for change. As King (1958) says, “to retaliate with hate and bitterness would

do nothing but intensify the hate in the world. Along the way of life, someone must have sense enough and morality enough to cut off the chain of hate. This can be done only by projecting the ethics of love to the centre of our lives” (p. 19).

Such an organic link between inner transformation of the individual and larger social change is invariably missing in our politics. But there is more. In our pursuit of structural change we cannot overlook the immediacy and enormity of suffering. Sadly, this has been the record of many movements for justice. The millennial quest, based on various teleological certainties of the dynamic of History (with a capital H), has often led to people being treated as cannon fodder. The finiteness of their life-times appears to have little import for leaders who invariably belong to classes quite distinct from those who suffer injustice. As a result, the desperation for finding tangible solutions appears much less evident in leaders than for the masses they lead.

We are confronted with a paradox. Narrow preoccupation with daily issues results, for example, in the sterile “economism” of the working class. But the quest for millennial goals of a distant Shangri-la means a striking lack of concern for real-time solutions and an unyielding “protest for the sake of protest.” The former reflects a complete absence of broader vision, the latter a cruel neglect of immediate anguish. The challenge of creative politics is to strike an imaginative balance between the two, without disadvantaging either.

We must stop viewing conflict as an arena of our victory over the “other.” It is better regarded as a problem in search of a solution. A conflict needs not so much a victory, as a resolution. Indeed, a “defeat” that moves society forward on the moral landscape, that empowers the disadvantaged and sensitises those in power, deepening democracy in the process, could even be preferred to a “victory” that fails to achieve any of these.

A key to moving forward in this direction is to give up the antediluvian unitary and insurrectionist conception of Revolution (with a capital R). The unique appeal of “scientific socialism” was its claim to have discovered the “laws of motion of society” that definitively predicted the inexorable coming of a new dawn. This teleology has ended up becoming the

chief weakness of Marxism. If change is visualised in these terms, means-ends questions will be run roughshod over and horrors of the Stalinist kind will continue to be perpetrated.

The standpoint of *agape* love finds strong support in recent advances in Neuroscience and Economics, both of which have traditionally been bastions of selfishness as the central motive of human behaviour. Neurobiologists like Donald Pfaff (2007) marshal a new understanding of genes, neuronal activity and brain circuitry to explain our concern for the other. The path-breaking work of economists like Samuel Bowles questions standard textbook assumptions of the selfish *homo economicus* and emphasises the role of altruism in the very survival of humankind in the difficult years ahead.

A one-track, single-event notion of revolution must also be discarded because it leads to complete neglect of crucial nitty-gritty detail that forms the heart of the transformation we dream of. It is this dry spadework that also contains solutions to immediate distress. Running mid-day meals in schools under active supervision of mothers, local people managing sanitation and drinking water systems, social audits in vibrant gram sabhas, participatory planning for watershed works, women leading federations of self-help thrift groups and workers running industrially safe, non-polluting factories as participant shareholders — all these and many more are the immediate, unfinished, feasible tasks of an ongoing struggle for change. Unfortunately, activists typically push these questions into a hazy future, to be all answered after the revolution, so to speak. These are difficult questions that necessitate intricate answers. And we need to begin looking for these here and now, in the living laboratories of learning of our farms and factories, villages and slums. Not in some imaginary distant future after a fictitious insurrection.

- **Social mobilisation of the weak and voiceless essential part of any intervention:** If uncertainty related to a context of contention and conflict is to be adequately recognised we need to dedicate specific time, human and financial resources to the social mobilisation of the disadvantaged in each of our development interventions. In the MTA of the Eleventh Plan, I have tried to provide a road map for this in the specific context of various

development initiatives such as the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), sanitation and drinking water supply. The Parthasarathy Committee had already outlined this approach for the watershed programme and this has been incorporated into the Common Guidelines issued during the Eleventh Plan. One has to resist the rush to universalize without adequate preparation so that quality outcomes with genuine inclusiveness can be attained.

- **Uncertainty flowing from contention also demands inclusive approaches to the land**

question: Land acquisition initiatives such as the SEZ Act and the proposed Land Acquisition (Amendment) Bill (LAAB) portend a serious conflict in India's countryside. The fact that the Supreme Court has held that the state is the "trustee of all natural resources" must be regarded as posing a challenge to the doctrine of eminent domain, for it qualifies the assertion of absolute sovereign power by the state over natural resources. The inclusion of labourers, SC/ST families, vulnerable persons (disabled, destitute, orphans, widows, unmarried girls, abandoned women, or persons above fifty years of age, without alternative livelihoods) and the landless, is a very significant provision in the R&R Policy which must become part of the LAAB. The LAAB and the SEZ Act also appear inconsistent with land ceiling laws and do not incorporate the special protection for Scheduled Tribes in the Indian Constitution, whether those under Schedules V and VI, the Panchayats (Extension to the Scheduled Areas) Act, 1996 or the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.

It needs to be clearly understood that the process of industrialisation or infrastructure development in rural India cannot be sustained in the long-run if opposition by Project Affected Families (PAFs) continues unabated or and they are not made the very first beneficiaries of its outcomes. It has been estimated that 70% of 190 infrastructure projects in the pipeline have been delayed due to land acquisition problems. Enlightened state policy aimed at ensuring long-term sustainability of the process must gain decisive ground over a short-sighted recourse to available legal loopholes. There are many possibilities here, which

need to be regarded as very small investments that ensure the long-term sustainability of the development process. One is to provide land in the command area of irrigation projects, as mentioned in the R&R policy. The other is to utilise the long period that separates project initiation and land acquisition as also the gap between first notification, displacement and project construction to train PAFs in skills that could be used on the project. Facilities and products created by the project could be made available to PAFs. Compensation could also be tied more closely to future valuations is an inflation-adjusted monthly pension combined with a savings bond. The pension could be partially tied to the profits of the project. The best route could be to make PAFs shareholders in the proposed project given their contribution to a key element of share capital. The safest way to disincentivise land acquisition from degenerating into a real estate proposition (as it has, reportedly in quite a few cases) is to resort to leasing or temporary alienation which will not sever the relationship of the landowner with her land. This would mean that if the project does not take off or shuts down or comes to a close, the land would be returned to the original landholder.

Each of these initiatives can help restore the faith of people in the democratic process, which is under strain in the remote hinterlands of India. The way forward is to move away from the vision of “subjects” inherent in the eminent domain doctrine towards that of citizens, whose rights are guaranteed under the Constitution. Ultimately, we have to go beyond narrow legality to seek broader legitimacy. This demands giving a cutting-edge to many provisions of the R&R Policy, making each of them mandatory and not reducing them to what they are in effect – conditionalities without consequences (Ramanathan, 2008). But it also requires an unequivocal commitment to imaginatively exploring ways of rebuilding the livelihoods of those adversely affected by development projects.

Institutional Implications

- **Uncertainty demands forging of partnerships:** Certainty is the requirement and characteristic of top-down, unilinear visions of change. Rejecting the illusory certainty of a single voice is a liberating, enriching, inclusive experience. It potentially provides the benefits

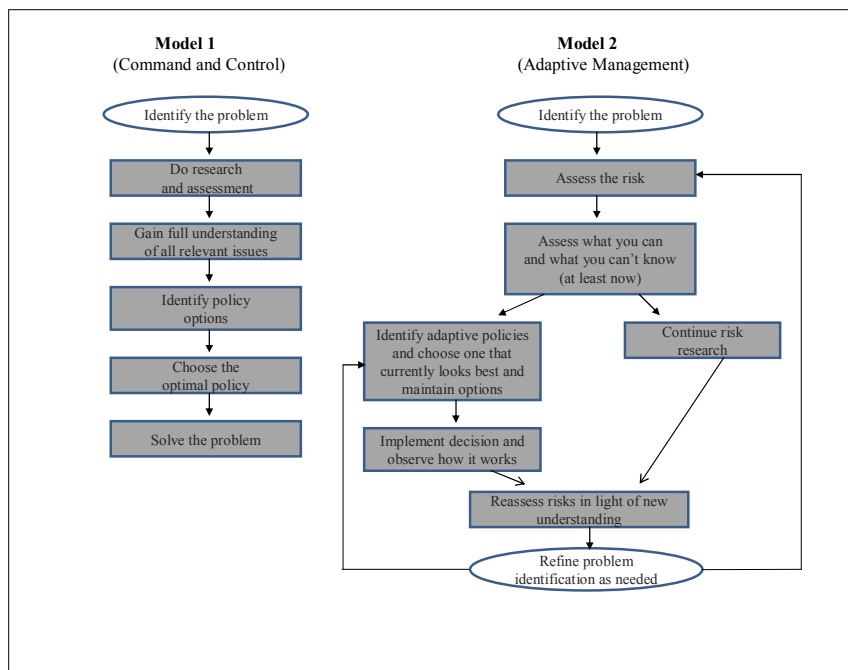
of multiple perspectives and standpoints, each of which has a unique value. We need to recognise that a multi-dimensional, multi-stakeholder, multi-directional and multi-disciplinary matrix of relationships governs the dynamics of change in a deeply interconnected way. While we may never fully fathom the depths and intensities of these inter-connections (which is the residual uncertainty that ineluctably characterises our interventions), the more we are cognizant of these and the more we forge partnerships that bring all of them together, harnessing their respective strengths and insights, the more sustainable will our interventions become (in social, ecological and financial terms). Emerging from iterative, consultative, inclusive processes, they will also, therefore, be both more richly informed and more acceptable. What we need, therefore, are consortia or partnerships of players and agencies each of which are poles of change. Both civil society and the state need to be open to and prepared for such partnerships. By prepared I mean not only willingness but a degree of prior preparation for what would in most cases be a novel and certainly demanding experience. As so many examples already illustrate, no real change is possible without that.²¹ But above all what I have learnt of living and working in the tribal areas of central India for 20 years is that the people of this country will need to be prepared to activate themselves. Democracy ultimately is a lot of hard work that demands that we move way beyond the victim mode. Neither waiting passively for the state to deliver nor activating ourselves only to fight for our rights can bring about real change. Transformational initiatives will succeed only if they are energised by the active participation of the people themselves. The space for this needs to be created by the state, which has to also facilitate this participation by building people's capacities and supporting their initiatives in this direction. I illustrate this point in a minute through the example of MGNREGA.

- **Recognition of uncertainty calls for and enables the growth of new kinds of organisations:** An acknowledgment of uncertainty in all the dimensions we have explicated

²¹ One of the most striking of these is the partnership between the Government of Andhra Pradesh and the Mazdoor Kisan Shakti Sangathan for NREGA social audits.

creates the conditions for the creation of lean, learning organisations based on partnerships. This kind of nimble-footed organisation is engaged in a process of continuous self-transformation even as it facilitates learning by its members.²² It pledges itself to building partnerships with other organisations, which show a similar commitment to remaining lean and open to learning from others. Rather than unilinear “command and control” strategies, it follows “adaptive management” practices where surprises are expected and learning through experience and evolving knowledge is built into the organisational DNA (Kasperson, 2009).

Adaptive Management in the Face of Uncertainty



Source: Kasperson (2009)

Following Shapiro (1988) and Thompson (2008), we could even describe these as “clumsy institutions”, in which “contestation is harnessed to constructive, if noisy argumentation” (Thompson, 2008, p172). Clumsiness is preferable to its alternative elegance, which would seek optimization around just one of the definitions of the problem and a unique solution, thereby silencing other voices. Clumsy institutions are agile and flexible

²² Pedler, M., Burgogyne, J. and Boydell, T. (1997): *The Learning Company: A Strategy for Sustainable Development*, 2nd Ed. London; McGraw-Hill.

enough to facilitate adaptability to turbulent environments. They can absorb plural perspectives and frames of reference found in inter-organisational partnerships.

- **A new definition of reform:** Such an institutional design hints at a completely new definition of “reform” for the neglected parts of India. Over the last 20 years, reform has been restricted to the corporate sector. But the large mass of this country will not benefit till reforms are extended to the public sector in rural development. It is here that we need new institutional designs that will make the poorest people of India active participants in the development process. Perhaps the best example is provided by what is being attempted through MGNREGA, which is clearly the most radically new programme ever conceived in the history of independent India.

The MGNREGA has given rise to the largest employment programme in human history and is unlike any other in its scale, architecture and thrust. Its bottom-up, people-centred, demand-driven, self-selecting, rights-based design is new and unprecedented. MGNREGA enjoins the state to provide a guarantee of employment to each rural household that demands work. But it also demands of the people that they participate actively in the design and implementation of the programme. For only then will it realise its true potential. Thus far, the programme has suffered because it continues to rely on the same ossified structure of implementation that has failed rural development for six decades. The programme demands a new imagination to be brought to bear on its institutional design. We need to empower the main implementing agency, the Gram Panchayats (GPs), with the requisite personnel and build their capacities so that they can make people aware of their entitlements, as also the unique demand-driven character of the programme. And move people beyond their long-held belief that they will get work only when government decides to “open” work. We also need build GP capacities to enable them to develop detailed micro-plans that truly reflect the needs and aspirations of the people. Without this effort what is truly new about MGNREGA will not come into play. This empowerment initiative is what will strengthen the roots of democracy in India and place rural governance on a completely

new and stronger foundation. This demands lively partnerships with civil society organisations and research institutions who can provide critical inputs in each of these vitally important aspects.

MGNREGA is also exciting because it has a self-limiting character which has not yet been adequately recognised. The ultimate potential of MGNREGA lies in a renewed focus on improving the productivity of agriculture and convergence to engender allied sustainable livelihoods. Millions of small and marginal farmers forced to work under MGNREGA because the productivity of their own farms is no longer enough to make ends meet. Among agricultural labour households in India, the percentage of those who own land is around 50 in Rajasthan and Madhya Pradesh, 60 in Orissa and Uttar Pradesh and over 70 in Chhattisgarh and Jharkhand. And if we focus on tribals, the proportion shoots up to as high as 76-87 per cent in Chhattisgarh, Jharkhand and Rajasthan. MGNREGA will become really powerful when it helps rebuild this decimated productivity of small farms and allows these people to return to full-time farming, thereby also reducing the load on MGNREGA. There are many such examples to be found under MGNREGA, although they still remain small in number. For example, the First Annual Report of the National Consortium of Civil Society Organisations on MGNREGA (2009) reports that earthen dams on common land have recharged wells of thousands of poor farmers who earlier worked as labourers to build these dams. These farmers are now busy making a series of investments to improve their own farms. Rising incomes also improve capacity utilisation and happier expectations act as incentives for more investment. Under MGNREGA, farmers have come back to land they long abandoned, as increased output, in an atmosphere of renewed hope, spurs further investment. Converging MGNREGA with other programmes for rural livelihoods would carry this momentum forward in a positive upward spiral, which will broad-base the growth process via downstream multiplier-accelerator effects (Shah, 2009).

Our endeavour has to be to not merely help MGNREGA realise its full potential but to carry that positive momentum forward in a redesign on similar (though necessarily different and specific) lines of all our other development initiatives.

3. Conclusion

The totalitarian state, the invisible hand of the market and science & technology – these were the three main bastions of certainty in the 20th century. As the century ran its course, each one of them, at different points of time, palpably and demonstrably reached their limits. It is in the space created by their dethronement that the power of uncertainty has the potential to flower. It is only this fracturing of fundamentalisms that has forced each of these fulcrums of power to seek answers to unresolvable challenges in other domains. It is now for us to seize the moment by showing the requisite imagination and creativity in very concrete terms to harness the possibilities created by this unleashing of the insuperable recognition of uncertainty.

This needs to be very carefully understood. For, there is a very real possibility in precisely the opposite direction. So overwhelmed by the collapse of these certainties, we could allow ourselves to be gripped by the worst cynicism and despair, an alarmist fear of cataclysmic consequences. Leading either to an extremist stance of counter-violence or a giving up, translating in its most desperate form, into large-scale suicide. Both of these responses are in evidence in contemporary India. Both can, in one sense, in a large swathe of compassion, even be understood. But neither serves any useful purpose whatsoever. Violence, as is already evident, only incites the draconian character of the state. And surely we can find a better option for our farmers, than their swallowing the poisonous fluid.

Our challenge is not to allow ourselves to be overwhelmed by the undeniable darknesses of the time but to seize the light that still shines within so many endeavours, small, unsung but powerful, many outside the government but also several within it. And envision the forging of strong alliances among them. I speak to you today of a hope in this direction. Where we exercise our imagination to creatively utilise the spaces that democracy is perforce obliged to provide its

citizens, exemplified in recent years, after the watershed General Elections of 2004, by the Right to Information Act, the MGNREGA, the Forest Rights Act, the Right to Education Act and the upcoming National Food Security Act. These have resulted from an acknowledgment of the need to forge new instruments once the certainties of old had all run their course.

But let us hasten to remind ourselves that these are spaces that have as yet only been just created. To realise their full potential will require all the resourcefulness at our command. That will give reform a completely new, intricate and powerful meaning. That will demand forging of new kinds of institutions and partnerships. Building these will not mean a denial of the state, markets or science & technology. Rather, it will mean a harnessing of their respective strengths in a completely new alignment of forces.

The Prime Minister has described the Planning Commission as “an essay in persuasion”. The word essay has an incredible range of meanings that includes trial, test, effort, attempt, especially an initial tentative effort and the result or product of an attempt. My aim as Member, Planning Commission is an *aagraha* (an attempt to persuade) with key players in the Central and State Governments, as also in civil society and academia across disciplines, to forge partnerships with each other that would help roll out a wide range of best practices that are already in place in isolation but need to be mainstreamed at scale without the customary loss of quality that such scaling normally entails. I invite all of you to join in this endeavour, where we work together, deeply cognizant of our own individual, discrete limitations but fully aware of the enormously powerful potential of our coming together.

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