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CHAPTER 6

Sustainability and the Capability Approach:

From theory to practice[1]?

PB Anand

University of Bradford

Abstract

The capability approach and sustainability can be connected in numerous ways. One could think of sustainability as a self-contained domain of human analysis – thus there could be theories of sustainability and there may be difficulties in this domain as elsewhere in moving from theory to policy or practice. Thus, capability approach could be considered as an additional lens that can facilitate the transition from sustainability theory to practice; alternatively one could think of the capability approach as offering an alternative paradigm and thus build on both theories and then find ways to move from theory to practice. In this chapter, both of these approaches are recognised and discussed. The capability approach is mainly about enhancing substantive freedoms- we examine the conjectures whether an approach of increasing freedoms is compatible with sustainability and whether freedoms are sufficient for sustainability. We use the case of Mongolia to explore some of these issues of application.

I. Introduction

I approach the expression 'from theory to practice' with some reluctance because inherent in that expression is a particular view of research or scientific method. There is an assumption regarding sequence. However, theory and policy are not as disjointed as one

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might feel from the way these two are described in some of the literature. For most of us dealing with public policy issues, theory and practice are not disjunctive and the sequence is not necessarily from theory to practice. Often, what is observed in practice leads to 'grounded' theory and in many cases theories are tools of reasoning which enable us to distil from detail abstract concepts and rubrics or sub-routines to facilitate policy and action.

The aim of this chapter is to explore how we could apply the capability approach to sustainability. There are two main challenges here when we see this in terms of moving from theory to practice. There are two different journeys here – one in terms of capability approach as a theory and how we could use this to improve policy regarding sustainability (capability approach as an alternative theory); the second construct is in terms of sustainability theory/ies and moving from such theories to policy and to what extent the capability approach can help in improving or clarifying those journeys (the capability approach as a complementary theory).

While the challenge of sustainability is to include concerns about future generations and other species in our decision making, the challenge of the capability approach is to choose the right kind of metric in evaluating or defining what development is and why a focus on substantive freedoms is central to it.

. In this regard, two immediate questions can be raised:

- What does a capability approach to sustainability entail that is different from other approaches to sustainability?
- What are implications for applying the capability approach to sustainability?

After a brief discussion on conceptual issues (section 2), I shall discuss some issues in moving from theory to practice (section 3) in two parts- initially discussing evidence from several countries and then a brief country case study of Mongolia. In the final section, some conclusions and issues for further discussion are identified.

II. Sustainable development and human development

There is no single theory of sustainability. There have been many alternative theories which contributed to the development of our ideas about sustainability. Though concerns about conserving nature can be traced back to several ancient texts, many of those concerns were based on instrumental reasons and the immorality of inflicting damage to nature or causing harm or inconvenience to other humans by such damage mainly through neglect.

The scale of the impact of human actions on the environment expanded by orders of magnitude with the Industrial Revolution – such impact is best captured by William Blake's (1804) expression 'dark satanic mills' and also featured in the description of the condition of

working classes in Engels (1844) – though Williamson (1981) finds no evidence to support the pessimistic view that quality of life of urban workers deteriorated during industrial revolution.

Among other things, the environmentalism of the nineteenth century was dominated by (a) public health concerns related to hygiene and health; and (b) an early form of corporate social responsibility in terms of philanthropy by industrialists in an attempt to voluntarily transform mills to be centres of living communities such as those in Copley and Saltaire in Yorkshire and New Lanark in Scotland.

It is only in the twentieth century that environmental concerns have become connected with the concepts of public 'bads' and in the domain of responsibility of public policy and regulation - for example, the great London smog giving rise to Clean Air Act of 1956. In the 1970s the emphasis shifted to 'impending' resource scarcity first with the publication of the report of the Club of Rome titled 'the Limits to Growth' but brought to greater prominence by the two oil price shocks of 1973 and 1979. However, the early concerns for international co-operation based either on conservation ethic or impending resource scarcity did not find support from developing countries. The idea of sustainability came to the forefront as a way to reconcile the need for development and the responsibility for conserving the environment. Initial ideas of sustainability (for example, IUCN,1980) started very much from the 'urgent need' for conserving or protecting species and ecosystems – casting humans and the pursuit of development as the chief villains.

The definition of sustainable development proposed in the report of the World Commission on Environment and Development (1987:8) also known as Brundtland Commission report became popular. According to this report, sustainable development is "…development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs". A reason for wide acceptability of this definition is its simplicity. Here, for the first time sustainability is defined primarily as inter-generational fairness. Also, unlike previous attempts to define sustainability from the view-point of the need to preserve ecosystems, here sustainability is defined in terms of pursuing development in so far as it is aimed at meeting the needs of people.

However, this definition retains numerous shortcomings. Almost every word in this definition is subjective and problematic. We found that there could be serious arguments and ethical concerns about what development is; who the present generation are and where the line can be drawn distinguishing the present and future generations and whether it is possible to distinguish between the moral responsibility towards immediate future generation (n=1) and towards one that follows after say 50 generations (n=51); what the expression meeting the needs means and whether development is only about meeting the needs (however expansively such needs may be specified); how much of a trade-off must exist before we agree that there has been a compromise; how we should take into account the context-specificity of needs and so on.

With regard to needs, Amartya Sen (2009: 250) noted: “Certainly, people have ‘needs’, but they also have values, and, in particular, they cherish their ability to reason, appraise, act and participate. Seeing people in terms only of their needs may give us a rather meagre view of humanity.” Further, ethical issues are that: this definition does not distinguish between needs of different individuals within the society; each generation is considered undistinguishable mass of persons perhaps with homogeneous tastes and preferences. Anyone queuing to buy coffee from any of the high street coffee shops can easily recognise the problems with this approach.

Because of these various shortcomings, it is not at all easy to move ‘from theory to policy’ when using the Brundtland definition. The capability approach offers an alternative perspective to consider sustainability. We will return to this after briefly considering a few other approaches.

An economic approach to sustainability

Before we can demonstrate the importance and relevance of CA based approach to sustainability, it is important to briefly consider the mainstream economic approach to sustainability. We urge the reader to bear with this ‘digression’ which we feel is important to highlight what it is that CA to sustainability can help us do that we cannot do with other approaches.

Alternative theories have been developed from an economic perspective. For example, an economist could argue that because conserving the environment requires foregoing other things there is an opportunity cost – therefore, there are limits to what can be conserved. Another perspective is to consider the conservation of the environment to be similar to other goods and services and that by understanding the effective demand for conservation one could infer the well-being or utility that can be gained by conserving the ‘correct’ amount of the environment.

Until fairly recently, measures such as national income per capita have been used as a proxy of well-being. The main argument against such approaches is that focusing on income completely misses deprivation in non-income dimensions especially concerning agency, freedoms and social and cultural aspects of quality of life which includes values towards the environment. A major environmental disaster and subsequent clean up may actually and perversely appear as an increase in per capita income (due to clean up expenditure). For example, take three identical societies at more or less similar level of income per capita – such as the three Indian states of Bihar, Madhya Pradesh and Uttar Pradesh. In December 1984, there was a major industrial disaster in the Union Carbide plant in the centre of the city of Bhopal in the state of Madhya Pradesh resulting in the death of over 3,000 persons and affecting the health of over 200,000 persons (Cullinan et al, 1997). The scars of this

disaster still loom large in collective memory (Sharma,2005). Bizarrely, per capita income of Madhya Pradesh state increases faster than that of neighbouring Uttar Pradesh in 1985.

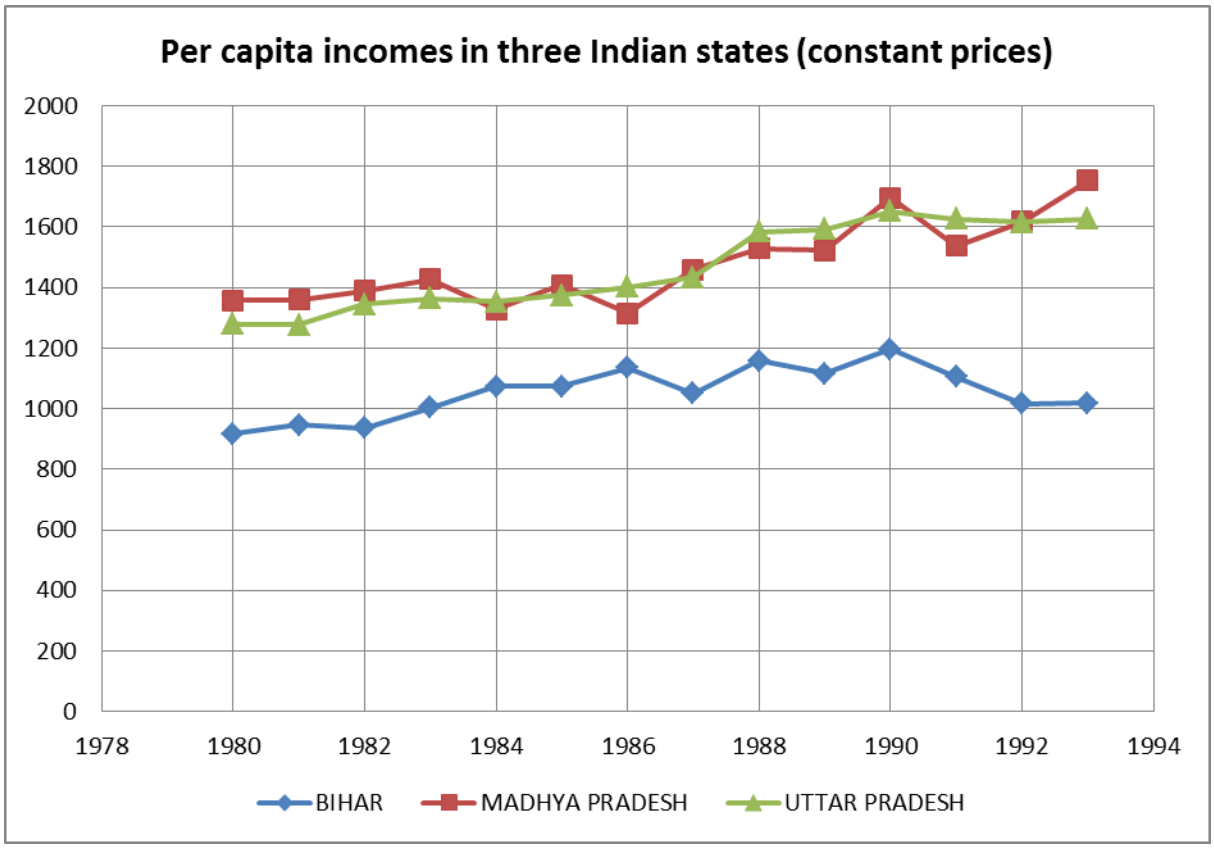

Figure 1: Per capita incomes in Madhya Pradesh and neighbouring states in the 1980s
Source: Compiled by author based on data from the Government of India

The net state domestic product per capita at constant prices in 1984-85 for Bihar, Madhya Pradesh and Uttar Pradesh were: Rs 1074; 1327 and 1354 respectively. The figures for 1985-86 for the three states in the same order were: 1074; 1409 and 1375. An analysis based only on incomes would suggest that well-being in Madhya Pradesh increased during those two years faster than in Uttar Pradesh and completely misses one of the greatest industrial disasters of recent times. It is possible to argue that these states have large population and even a disaster as large as that of Bhopal is not large enough to make its impact on the macro level picture of the economy of the respective states.

Take another example. Between 1990 and 2000, Indonesia's income per capita increased from 592 dollars per capita to 773 dollars per capita (both in constant prices of year 2000). However, during the same period, total forest area in Indonesia decreased by 191 thousand square km. It is possible to argue that Indonesia was consuming some of its natural capital- in this case its forests- to produce income. Indonesia is not alone. (During those ten years, worldwide, forest area decreased by a total of 844 thousand square kilometres.) In Brazil too income per capita increased from 3350 to nearly 3700 dollars while forest area

decreased by 289 thousand square km. Of course, forest area is a rather simple measure and it does not capture the complexity, diversity and resilience of an ecosystem and in some countries, income per capita could increase without an impact on 'domestic' forest resources if the footprint or impact can be exported elsewhere (i.e., contributing to depletion of forests in other countries). Notwithstanding these limitations, if for a moment we were to consider forest area as a proxy for impacts on ecosystems, the broader issue remains valid that focusing on income per capita does not capture how growth in such income has been achieved and what consequences it has created. In choosing an approach to sustainability, it is important to consider that sustainability entails multiple dimensions.

These examples illustrate that some of the limitations of one of the economic approaches to sustainability (with its emphasis on monetary measures, prices and valuation as drivers of change) and using this to move from theory to policy.

Within the paradigm of an economic perspective, an alternative approach to sustainability aims to address this flaw (of the inability of monetary measures to reflect the nature or quality of changes) by taking account of depletion in different forms of capital. Resources can be considered as 'flow' or 'stock' resources. Flow resources, such as solar energy reaching the earth or wind energy, are 'continuous' or 'renewable' (i.e., consuming it in one period does not diminish availability in the following period). So long as the fundamental conditions are unaffected, a generation can 'harvest' the renewable resource without compromising the ability of future generations to use such resources for their needs [as long as harvested amount is less than regeneration amount]. However, this is not the case with 'stock' resources. Stock resources can be considered as capital generating a certain flow of services. Capital stock can include various forms of assets such as natural capital, physical capital, human capital and so on. Some stock resources (such as forests) can be 'renewable' while others are non-renewable (such as mines). Natural resources such as mines are considered as gift of nature forming a part of a country's natural capital. These different elements have different imperatives for applying a capability approach (as we shall see in the subsequent section)- for example, the concept of human right to natural resources could be developed as expansive and encompassing rights than the narrowly defined property rights. Similarly, the concept of capital stock can be developed further both for its intrinsic and instrumental roles in expanding substantive freedoms.

Implications for sustainability depend on whether or not different forms of capital are considered substitutes. A 'weak sustainability' (WS) approach requires that the overall capital is sustained so that the flow or return on the capital remains intact while the composition of portfolio in terms of individual elements of different forms of capital might change. In this view, so long as the overall capital stock is maintained, (i.e., any gains from depleting one for of capital are re-invested in another), consumption is considered sustainable. This idea is best captured in the proposals by Nobel Laureate Robert Solow

(1993a; 1993b). In these two papers, Solow proposes that sustainability is a moral obligation not to preserve any particular asset but one that requires preserving the generalised capacity of future generations to be as well off as we are. In the second paper, he proposes that "…sustainable path for a national economy is one that allows every future generation the option of being as well off as its predecessors" (1993b:168). Amongst other things, this approach overcomes the problem of distinguishing between moral responsibility towards immediate future generation (n=1) and one that follows a long time in the future.

An indicator such as genuine savings (GS) can be used to illustrate this idea of maintaining capital intact. Genuine savings rate is estimated by making adjustment to gross savings rate (proportion of total savings in total national income). The adjustments are to reflect the increase in human capital (i.e., education expenditures) and depletion of natural capital – measured in terms of forest depletion, energy depletion, depletion of minerals, and impact of pollution such as damage caused in terms of CO_2 emissions or particulate matter emissions.

The World Bank's (2006) analysis of several resource rich countries suggested that countries such as Botswana and Malaysia pretty much invested rents from natural resources so that while one form of capital is being depleted other forms of capital were being augmented. On the other hand, countries such as resource rich countries such as Nigeria, Trinidad and Tobago, United Kingdom, Venezuela, and Zambia did not invest rents but instead consumed them.

However, Solow's expression of how well off a society is at the aggregate level (of a national economy) does not take into account distribution within the society. Therefore, although this approach is appealing for discussions of sustainability at the national or macro-level, it breaks down when it comes to resolving the conflict between making some people in the present generation better off versus protecting the ability of future generation to be better off, this weak sustainability approach cannot provide answers to the question of how best to allocate resources between different communities now and between present and future generations and how much of the environment should be conserved or which aspects should be conserved and which ones can be traded-off or substituted for other forms.

Those who consider different forms of capital are not substitutes to each other argue that each individual component (or type) of capital stock must be maintained (strong sustainability or SS). An example of this approach can be seen in the idea of ecological footprint (by converting all environmental impacts into extent of land required in terms of global hectares per capita) and keeping the overall footprint to remain below the the bio-capacity (i.e., the overall capacity of eco-systems to absorb the impacts) (see Global Footprint Network,2011). Sustaining natural capital can be interpreted as maintaining all natural resources intact for future generations. Such an approach to conserving

environmental resources for future generations helps us maintain the principle of inter-generational fairness. An ecological resilience based approach to sustainability (preserving particular key-stone species or entire ecosystems) may appear initially to be non-anthropocentric. However, in such an approach it would be impossible to prioritise actions since it is not possible to reconcile whether one species is more or less important than another. Also, if the environment has to be intrinsically conserved for its own sake without reference to its instrumental role in the well-being of present and future generations of humans, the questions of how much effort to be spent and whether this burden can be postponed to future generations cannot be answered from within the approach.

All of these approaches suffer from various problems including being anthropo-centric (i.e., focusing only on well-being of humans), utilitarian (i.e., those aspects of the environment that have a direct impact on human well-being get prioritised) and myopic (i.e., having a bias towards short term benefits as the use of discounting renders benefits in the very long term to be of little present value). There is also the problem of commensurability- i.e., the various aspects of the environmental qualities are converted into a common metric such as dollars and compared with other goods and commodities. It is possible that our preferences to traded goods and services could be on a different dimension compared to our preferences for environment or certain qualities of the environment such that we cannot convert or express one in terms of the other. As we have already seen with the Bhopal, Indonesia and Brazil examples earlier, a sustainability indicator that has at its centre a monetary metric (such as savings rate or income per capita) will not be able to capture the impacts on non-monetary dimensions such as human lives lost in Bhopal or thousands of square kilometres of rain forests lost in Brazil or Indonesia. More importantly, an economic indicator may not distinguish between whether the environmental improvement was achieved through suppression of freedoms and human rights (for example by a dictatorial regime). Is environmental conservation desirable in itself even if it is achieved by oppression?

Capability approach and sustainable human development

The capability approach suggests that what should be sustained is not merely the ability to meet needs but the capacity and freedom to achieve whatever beings and doings that every person in a society would like to achieve and has reason to value. Thus, Sudhir Anand and Amartya Sen (1994, 2000) noted in two seminal papers, sustainable development is essentially about sustainable human development in terms of enhancing substantive freedoms and capabilities of present and future generations.

Anand and Sen (2000) point out that sustainability or a concern about future generations is merely an extension of universalism that is already inherent in the concept of human development.

> "The demand of 'sustainability' is, in fact, a particular reflection of universality of claims applied to the future generations vis-a-vis us. That universalism also requires that in our anxiety to protect the future generations, we must not overlook the pressing claims of the less privileged today. A universalist approach cannot ignore the deprived people today in trying to prevent deprivation in the future." [Anand and Sen,2000: 2030]

However, it is easy to overlook this connection and pursue sustainable development strategies independently of strategies to pursue economic growth, development and policies to promote human development including health and education opportunities. A sustainable human development approach emphasises an inclusive view of what should be policy priorities of a society and how these should be attained (through deliberative and inclusive public policy making processes) without compromising the ability of future generations to pursue their freedoms. An inclusive approach means policies or decisions are made through participatory mechanisms; that all sections of society have an opportunity to present their views and to the extent possible transparent efforts have been made to balance the views of different groups or individuals in arriving at the policy decision with a view to maximise (present value of) gains such that both present and future generations benefit.

Furthermore, as the Global HDR1994 also highlights:

> "…Human development and sustainability are thus essential components of the same ethic of universalism of life claims. There is no tension between the two concepts, for they are a part of the same overall design. In such a conceptual framework, sustainability is, in a very broad sense, a matter of distributional equity-of sharing development opportunities between present and future generations. There would, however, be *something distinctly odd if we were deeply concerned for the well-being of future-as yet unborn-generations while ignoring the plight of the poor today*. The ethic of universalism clearly demands both intra-generational equity and intergenerational equity." [UNDP,1994: 13- emphasis added]

These arguments highlight the way in which a capability approach based sustainable human development overcomes the problem of dealing with both intra- and inter-generational fairness unlike the economic approaches.

In pursuing sustainable development, it is easy to fall in the trap of thinking that environmental resources need to be sustained and human beings or their actions are the

problem. Thus, it is possible to set up an artificial conflict between the goal of expanding substantive freedoms in the capability approach and the idea of responsibility and reducing consumption and maintaining stock of resources for future generations as some simplistic interpretations of sustainability do. However, as Amartya Sen (2009:248) noted:

> "The environment is sometimes seen (I believe over-simply) as the 'state of nature', including such measures as the extent of forest cover, the depth of the groundwater table, the number of living species and so on. To the extent that it is assumed that this pre-existing nature will stay intact unless we add impurities and pollutants to it, it might therefore, appear superficially plausible that the environment is best protected if we interfere with it as little as possible. This understanding is, however, deeply defective for two important reasons."

These two reasons are the source of value of the environment and the scope for environmental improvement. For Sen, the value of the environment is not dependent on what it contains but what it offers by ways of opportunities to people. He gives the example of eradication of smallpox (and the fact that we do not lament this). The second reason Sen presents is that while some human actions have negative impacts on the environment, there are also actions which improve the environment and therefore, the need to consider the 'constructive agency' of those who undertake actions to improve the environment.

The idea of agency is central to capability approach in any case and is deeper than this particular aspect of agency concerning the environment. The key ingredient of a capability approach to sustainability can be what Sen sometimes referred to as 'sustainable freedoms'.

We can now summarise this brief review in terms of what sustainable human development from the perspective of capability approach entails:

a. The capability approach refers to enhancing and expanding substantive freedoms. It is person-centred. Rather than what a person actually achieves (the achieved outcomes), it is important to consider what a person could have achieved, what universal set of opportunities are available.
b. Sustainability means expanding freedoms now without compromising the ability of future generations to enjoy or enhance their own substantive freedoms. Sustainability means well-being in the future does not decline due to actions today.
c. What is being sustained is not natural capital or certain environmental resources but "the nature of the lives that people can lead, and the fact that in that sustaining, human agency would be pivotal, does not reduce in any way the significance of human life as an end" (Anand and Sen, 2000: 2040).

Before we consider the specific policy implications of capability approach, it is pertinent to discuss some recent critique of sustainable human development. Ballet et al (2011) recognise the main advantages of a capability approach to sustainability. According to them,

these are: that the capability approach provides a better normative framework to consider sustainability beyond satisfaction of needs; that in capability approach the consideration of efficiency applies to environmental resources as well; and that capability approach provides for fairness and justice connecting both intra and inter-generational distribution issues. Rauschman and Lessman (2011) also concur with these advantages but go on to highlight three disadvantages of a capability approach to sustainability. These are: (i) that capability approach is not a dynamic concept; (ii) that it is very difficult to connect capability approach with "…the systemic level of sustainability analysis" ; and (iii) that while the capability approach is useful in recognising multiple dimensions of well-being or deprivation, this does not easily translate to understanding of decision process. If these criticisms were to be accepted, then one might argue that it is not possible to apply the capability approach to sustainability when examining it from an ecosystemic level.

In my view, all three criticisms can be addressed as mainly issues related to problematizing the definition of capabilities rather than issues related to the capability approach itself. The issue of dynamic versus static analysis is much easier to address. Any analysis of sustainability is about inter-temporal decisions. Defining sustainability as non-declining well-being (however it is measured), Anand and Sen (2001) show in the addendum to that paper that sustainability and optimality converge as long as the rate of technical progress exceeds pure time preference. Extending this to the evaluation of capabilities or defining well-being in terms of capabilities, the issue of static versus dynamic analysis can be relaxed in theory. The second criticism is more an area for further research than a criticism of capability approach per se. A simple example may be useful. While we all recognise that the concept of human development is much richer and deeper than what is captured in the human development index (HDI), for the purposes of this illustration let us use HDI. This index is constructed using information on income per capita, health and education indicators. One way to address Raushman and Lessman's second criticism is to use for example adjusted savings or environmentally adjusted income per capita. Though such an analysis might allow for correcting HDI to take into account environmental sustainability considerations, we may be missing the more important point in using capability approach as a way to think about sustainability- that is to emphasise universalism and thus recognise freedoms of every person including a person who could be potentially harmed by the siting of a pesticide factory in a large city as in the case of Bhopal or a person living in flood prone areas in Bangladesh. The capability approach demands us to consider the life claims of all of these persons as being equally important along with our own life claims. Seen in that context, whether and how we use systemic sustainability criteria is distinct from the usefulness of capability approach itself. The third criticism of Raushmayer and Lessman can apply to any ethical theory – the fact that I am not yet able to use a theory may not necessarily be a problem with the theory; it could be a problem with me or the way I am (not) trying.

III. 'Moving' from theory to practice

As I have already noted in the opening section, the idea of 'moving from theory to practice' is problematic in social sciences and public policy analysis. Such an expression lands one right in the middle of a battle-ground between the arrogance of theorists and academic scholars on the one hand and the impatience of practitioners on the other. In reality, policy analysis and social science research is iterative and may often start from an observed reality and coming up with possible theories to explain this reality. As North (2003) notes, in the 'non-ergodic' world, we do not have the luxury of formulating a theory first and then testing it. In the sense of Heraclitus, we could not step into the same river twice.

Applying the capability approach can mean several things- it could mean using specific policy tools which contribute to improving substantive freedoms, or improving agency (for example by clarifying human rights or strengthening institutions of public deliberation and democratic decision making). A different meaning is in terms of a paradigm shift– thus an existing paradigm such as utilitarianism is replaced with a capability approach based evaluation. In the context of application of capability approach to sustainability, usually this appears to be used in the former sense of applying certain kinds of policy tools rather than in the sense of replacing the entire paradigm.

If we want to argue that a capability approach to sustainability works better than other alternative theories of sustainability, we could examine this in the form of a conjecture to see if the policy tools associated with a capability approach produce better results in terms of sustainability. We can express this in the form of two conjectures to explore the necessity and sufficience of freedoms.

Conjecture 1: Enhancing substantive freedoms is compatible with sustainability.

For critics, sustainability is the justification to enforce more stringent regulations and thus impose restrictions on (unsustainable) human behaviour. For such critics the idea of enhancing freedoms is precisely the opposite of what is required for sustainability.

We cannot test this conjecture directly. However, we can break this conjecture down to smaller units and try to find evidence whether there is association (as we would expect) between enhancing freedoms and certain indicators of sustainability. As a very basic test, we can look for an association between political freedoms and sustainability. Among the top 10 countries in terms of adjusted savings, 6 of them are democracies with political freedoms. Among the bottom 10 countries in terms of adjusted savings, only 2 of them are democracies with political freedoms. Likewise, in bottom ten countries in terms of sustainability, on average freedom of the press is more suppressed (hence higher score) than in top 10 countries. Freedom of press is merely an indicator (and perhaps not a good one) of freedom of expression and agency. Even then, it appears that there is an association between progress towards sustainability and people's freedom to express opinions.

Preliminary as it may be, this evidence seems to suggest that enhancing substantive freedoms is not incompatible with achieving sustainability (in this case measured by adjusted savings). At this stage we are merely showing association- there is a need for further work to show causation.

Table 1: HDI, adjusted savings and political freedoms

Bottom 10 countries	HDI2010	Adjusted savings	Political freedom	Press freedom index
Slovakia	0.818	-81.1	2	11.0
Congo	0.489	-57.1	1	34.3
Chad	0.295	-49.9	1	44.5
Angola	0.403	-42.6	0	36.5
Equatorial Guinea	0.538	-38.5	1	65.5
Trinidad and Tobago	0.736	-19.2	2	7.0
Syrian Arab Republic	0.589	-15.2	0	78.0
Uzbekistan	0.617	-14.1	1	67.7
Sudan	0.379	-13.1	0	54.0
Guinea	0.340	-11.3	0	28.5
Average	0.520	-34.205	0.800	42.7
Top 10 countries	HDI	Adjusted savings	Political freedoms	Press freedom index
Algeria	0.677	21.4	1	49.6
Philippines	0.638	22.3	2	38.3
Bangladesh	0.469	23.7	0	37.3
India	0.519	24.2	2	29.3
Malawi	0.385	25.1	2	15.5
Nepal	0.428	30.5	2	35.6
Singapore	0.846	34.7	1	45.0
China	0.663	35.1	0	84.5
Botswana	0.633	37.2	2	15.5
Solomon Islands	0.494	54.7	2	
Average	0.575	30.871	1.400	39.0

Source: Compiled by author based on data from UNDP (2010a) and World Bank (2008)

Others have tried to find similar association between ecological footprint and human development index (Global Footprint Network, 2011). Examining the trend from 1980 to 2007, that study notes that although a number of countries such as United Arab Emirates, Korea Republic and Malaysia made impressive progress in human development index, at the same time their ecological footprint increased manifold. On the other hand, during the same period, countries such as Nepal decreased ecological footprint significantly while increasing HDI. Also, countries such as Indonesia, Bangladesh and Morocco increased HDI without significantly increasing the ecological footprint.

The New Economic Foundation (2012) developed the happy planet index combining responses to questions on life satisfaction (experienced well-being), life expectancy and ecological footprint. Countries with life expectancy above 75 years are coded 'green'; life expectancy of between 60 and 75 places them in 'amber' and below 60 years places them in 'red'. Experienced well-being is from ladder of life question from Gallup World Poll and is on a scale 1 to 10: a score greater than 6.2 makes a country 'green'; a score of between 4.8 and 6.2 puts them in 'amber' and a score below 4.8 puts them in 'red'. Similarly, an ecological footprint of less than 1.78 hectares (global bio-capacity) places a country in 'green' category; footprint of between 1.78 and 3.56 hectares puts them in 'amber' category; between 3.56 and 7.12 puts a country in 'red' category and above 7.12 puts it in 'deep red' category. For example, UAE, Denmark, Luzembourg and Qatar receive a 'deep red' for their ecological footprint. Though Denmark received 'green' codes for life expectancy and experienced well-being, its overall happy planet index plummets because of its ecological footprint and thus Denmark is placed at rank 110 out of 151 countries. The happy planet index gives Costa Rica the top spot while the last rank is given to Botswana.

However, both these approaches mentioned above (the ecological footprint and happy planet index), do not explicitly take into account the concept of freedoms. Perhaps, implicit in the experienced well-being question is an assumption that people in democracies are more likely to express higher level of experienced well-being than those in non-democratic regimes. However, this assumption must be challenged. It is interesting to note that the experienced well-being in both Venezuela and Sweden is 7.5; it is 5.8 in one-party state of Vietnam as compared to 5.0 in a pluralistic democracy of India.

In the case of Mongolia (which by the way is ranked 145 out of 151) we have tried to examine whether the severity of environmental problems expressed in terms of environmental vulnerability are in anyway correlated with indicators of human freedoms in terms of the human development index. This is examined briefly in section 4 below.

In addition, the relationship between sustainability and governance issues is also crucial for several reasons. Sustainability is meaningless if it is imposed. A concern for future generations is not a license to oppress those in the present generation. Governance here

has a broad meaning to include the nature of institutions, their legitimacy, the centrality of participation and a commitment to transparency, accountability, and effectiveness. Issues of mis-governance, corruption, state capture and erosion of trust in public institutions violate many of these aspects and raise concerns with regard to how sustainability is to be construed and implemented (discussed inAnand,2013) .

Conjecture 2: Freedoms and agency are sufficient to ensure sustainability.

This is far more difficult to test- here the question is whether the concept of freedoms is expansive and adequate in itself or whether we need to consider a set of freedoms along with concomitant responsibilities. A number of authors have discussed the idea of responsibility as being an important ingredient of a commitment to sustainability (most recently, for example, Suzumura,2012). Some scholars view the combination of freedom and responsibility as being natural to constitutional law (such as for instance the provisions of human rights on the one hand and the Directive Principles of State Policy on the other hand in the case of the Constitution of India). There is an argument regarding human rights being associated with duties of a citizen. However, this is a debatable point and in the case of the capability approach, in various writings of Amartya Sen we find that the idea of freedoms is deeper and more expansive and does not come with a 'small print' of duties or obligations.

In the case of the private sector, corporate social responsibility (CSR) and voluntary environmental standards have become important concepts with considerable practical applications and evidence. In our research that is in progress, , we find that a great majority of the FTSE 100 companies proclaim commitment to corporate social responsibility even though many of them are directly involved in extraction of natural resources (including some which are involved in fossil fuels). For example, four of the top 10 FTSE 100 companies in terms of market capitalisation are in extractive industries. This suggests that , CSR may be driven by other reasons including the need to appear to be environment friendly and not antagonise institutional investors such as pension funds which may have policies of ethical investing (see Anand,2012). Other drivers of CSR include avoiding potential legal liability, winning the support of local communities in areas where the manufacturing or mining activities may be located, minimising risks of disruption, or even a case of using CSR as a way of making credible commitment to pre-empt potential demands for bribes.

Policy Implications of using a capability approach to sustainability

As we briefly mentioned in the introduction, a capability approach to sustainability can mean two different things- one in general moving from theory to practice regarding the capability approach and what implications this has for sustainability; and second how do we

move from theory to practice with regard to sustainability and what can the capability approach contribute here.

With regard to the former sense, operationalizing or implementing the capability approach suggests several policy tools- the most important ones being the central role of agency and putting people at the centre of development and designing and evaluating policies for their ultimate impact in terms of expanding substantive freedoms. Here, some of the key policy instruments would include constitutional and legal protections including the recognition of human rights, making public policy making institutions directly accountable to the citizens, and using deliberative public reasoning in both the design and evaluation of policies. All of these are relevant to all aspects of policy making including specific policies related to the conservation of natural resources, and the promotion of the careful and efficient use of energy sources and so on. An interpretation of arguments in Anand and Sen (2000) could be that the pursuit of human development in its full and complete meaning automatically includes sustainable human development and there is no need for an additional sustainable development policy. The discussion related to conjectures 1 and 2 above is relevant to this angle.

However, with regard to linking the capability approach to sustainability from the second sense (i.e., moving from theory to practice regarding sustainability and what could the capability approach contribute), a number of isses can be identified. For example, in the field of forest conservation, it is argued that the use of participatory and deliberative institutions through community based forest management (CBFM) could be more effective than regulatory or state-driven approaches (see Molnar et al,2012). Creation of land tenure rights has been considered an important mechanism in the robustness of such institutions. The capability approach can be sued here for considering the multi-dimensional nature of well-being of forest communities and accordingly designing necessary protection mechanisms for all those dimensions rather than only the economic dimension.

Another message from the capability approach to sustainability would be to invest in developing people-centred indicators of sustainability and emphasise both the process of development of such indicators in the first place and the continued use and monitoring of sustainability trajectory subsequently through public deliberative processes.

With regard to natural resources governance, especially for resources such as mines and minerals, based on capability approach, one could argue that in addition to private property rights, moral rights could be clarified (as belonging to both present and future generations) and an independent duty-bearer institution such as ‘environmental rights commission’ could be created. Such a commission could be made responsible for investment of some of the benefits from mining projects, as belonging to future generations, through constitutional guarantees and reporting mechanisms. This is much different from the existing approach of creating a stabilisation fund which is a short term mechanism mainly aimed at consumption-smoothing in the light of price fluctuations.

Mongolia case study[2]

Ideally, a full-fledged case study would be useful to document and demonstrate the application of a theory and perhaps some testable conjectures. However, the aim of this section much less ambitious- it aims to provide a very brief overview of a two year project leading up to the 2011 National Human Development Report (UNDP,2011) with the aim of linking sustainability and human development.

Mongolia has attracted attention in discussions on sustainability from different perspectives. Mongolia is a land-locked country with a land area approximately thrice that of France or six times that of United Kingdom, yet population of only 3.1 million persons. The sparseness of population is exaggerated by the fact that more than one million people live in the capital city itself and overall nearly two out of three Mongolians lives in urban areas. Nomadic pastoral herding has been common to Central Asian steppe regions including in Siberia, Kyrgyzstan, Kazakhstan and Inner Mongolia region of China. In Mongolia, pastoral herding has cultural, economic as well as environmental significance. Pastoral herding is considered as an important element of the national identity of what it means to be a Mongolian- even though many people are actually urban residents and may perhaps have only occasional connections to the 'countryside'. Interested readers would find anthropological studies such as Lattimore (1961) and Humphrey and Sneath (1999) simply fascinating and insightful.

In terms of economic history, perhaps, we could think of Mongolia going through five period (at the risk simplification):

- Nomadic societies – from millennia until 1206;
- Empire – 13th to 15th centuries;
- Confluence of Budhism, monarchy and nomadic pastoralism 16th to 19th centuries;
- Socialist republic -1911-1990
- Democracy and market economy – since 1991

Between 1991 and 2000, agriculture has been the main driver of economy. In fact, in the immediate period after the collapse of socialism and the beginning of the transition to market economy, Mongolia went through significant de-industrialisation and even a small extent of urban to rural migration. As a result, in the early 1990s, the number of herder households went up quickly with corresponding increase in livestock population. However, livestock suffered major losses in a period of three consecutive years between 1999 and 2001. This is described as being a harsh winter (dzud). After a slight decline in the overall livestock, this began to increase once again from around 2004 and by 2009 total livestock reached approximately 44 million compared to 28 million in 2004. Whether this growth in livestock sector accompanied overall prosperity (due to commodity price boom until 2007) and thus encouraged herders to take excessive risks or whether there were perverse

[2] All of the data in this section comes from National Statistical Office (2010) and UNDP (2010b; 2011).

incentives (such as subsidies for cashmere) distorting decision making by herders or whether the mining sector was generating enormous wealth but few jobs and hence anticipating the high incomes of those in mineral sector, whether herders were hedging their bets by increasing their herds we cannot tell. However, this boom in livestock numbers resulted in a tragedy of another harsh winter in 2010 when nearly 9 million animals died between January and May. Questions were being raised about carrying capacity of pastures and what mechanisms can be used to enforce limits on herd sizes. An economic approach to sustainability might suggest that the problem is mainly caused by not using effective policy tools. Such an approach might suggest for example privatising the grasslands so that private property rights act as strong incentives to maintain cattle within carrying capacity. Another alternative might be some form of tax on herd-size such that the marginal cost of increasing cattle herd would take into account the externality. A capability approach might suggest that the problem is caused by conflict between different kinds of freedoms of which maintaining nomadic herding as a cultural aspect of Mongolian identity is also an important one. Similarly, the freedom of future generations of Mongolians to be able to continue to practice nomadic herding requires that the pastures are maintained without permanent (irreversible) degradation.

Another important challenge to sustainability in the case of Mongolia is mining. Since 2001, mining sector started to emerge as an important sector of the economy and by 2009, mining and manufacturing sectors together accounted for a quarter of GDP- almost matching the share of agriculture in GDP. While Mongolia has many mineral resources, the main ones that are driving the economy are: gold, copper, coal, crude oil, and molybdenum. Even as large multi-national companies are being attracted to Mongolia, the concept of 'resource nationalism' is very much in political and popular discourses. Natural resources can distort the returns to capture of political power and hence result in the emergence of rentier states and institutionalisation of corruption or appropriation of resource-rents by suppression of democratic institutions. A number of studies have examined these issues (for example, Humphreys et al, 2007; Collier, 2008; van der Ploeg and Venables, 2011; Venables, 2012). It is possible to argue that Mongolia has escaped many aspects of 'natural resource curse'- for example, exchange rate has been managed carefully to avoid 'Dutch disease' effects of currency appreciation; democratic institutions continue to control mineral revenues; though there is some evidence of increase in inequality over a period of time, there is limited evidence to suggest that a particular group within the society is systematically excluded from benefits of resource rents (though gender inequality is a broader and existing issue and mining sector may not have exacerbated this issue in particular). In fact, political competition had resulted in a universal cash transfer programme that operated for a few years, subsequently this has been capped and there has been some movement towards targeting. In fact the mineral resource rents are constituted as the 'human development fund' though progress is yet to be made on clarifying the principles and processes of setting this up as a sovereign wealth fund on the model of Alaska and Norway pension funds. As we

have mentioned above, a capability approach based policy intervention might be to set aside such proportion of mineral wealth as belonging to future generations and keep this away from temptations of present consumption- however egalitarian it could be in terms of distribution within present generation.

As with other transition economies, Mongolia's energy intensity of GDP remains very high though this has been coming down throughout the last 17 years or so. On the one hand this may not be an issue given that Mongolia contains vast amounts of coal reserves (estimated to be over 24 billion tons- GoM,2009:119). However, improving the efficiency of resource use is an essential step in the pursuit of sustainability. Energy use also has important implications both in terms of health and also moral responsibility with regard to dangerous climate change. Mongolia's national assessment report (GoM,2009) suggested that net total green-house gas emissions decreased from 22.5 giga grams in 1990 to around 14.5 giga grams in 2006. In per capita terms this has come down from over 7 tons per capita in 1990 to about 6 tons per capita in 2006.

From this brief discussion, we can already identify a few key challenges for the practice of sustainable development in Mongolia:

a. How best to use Mongolia's mineral resources for enhancing the freedoms of present and future generations;
b. How to put people at the centre of discussions on sustainability in general and on climate change and adaptation and mitigation strategies in particular;
c. While global carbon emissions determine the magnitude and nature of global and regional climate change and its consequent impacts on Mongolia, should Mongolia do anything at all to minimise its own CO_2 emissions (given that it already 'imports' CO_2 in terms of being a net absorber);
d. How best to improve efficiency in the use of energy and other resources and promote a culture of 'reduce-renew-reuse-recycle';
e. How to identify and address the various challenges to making Mongolia's development more equitable – especially to ensure that women, children, ethnic minority population, the elderly and other such groups are able to participate more directly in shaping the nature of development strategies (i.e., exercise their agency) and receive their due share of the benefits of such development (to enhance their well-being freedoms);
f. How to achieve a balance between individual freedoms of herders to advance their well-being and the rationale to achieve some limits on overall livestock in the collective interests of sustaining pastures and steppe in good health;
g. How to integrate considerations about ecosystems and the conservation of various species (ecological security) within the planning and development process of mining or other large infrastructure aimed at enhancing immediate economic benefits but

ultimately the substantive freedoms of current and future generations of Mongolians.

In August 2012, the erstwhile Ministry of Nature, Environment and Tourism has been reconstituted as Ministry of Nature, Environment and Green Development. A number of the issues identified above are all well discussed in public forums – however, the transition to action requires further deliberative policy making. The capability approach will be helpful in transforming the nature of discussions from ecological resilience approaches dominated by scientific analysis and measurements to one focused on expanding substantive freedoms. the capability approach can help in both journeys- one in terms of examining the existing (mainly economic) approaches to sustainability and how these are translated into policy and second in terms of capability approach itself as the theory and how we move towards policy. With regard to the first aspect, the capability approach can help in improving protections to the most vulnerable groups by way of creating appropriate human rights and freedoms and enshrining these in the law or constitution. Also, for example, the Ministry of Environment could be given a legal obligation to be the representative of future generations. A second aspect of the capability approach is to clarify and strengthen institutions that can arbitrate between citizens (right holders) and the state or its organs which should be the duty bearers charged with protecting and delivering the rights. Thirdly, environmental legislation could require stronger processes of participation and public deliberation with regard to decision making.

Our research (Anand,2011) attempted to examine the different dimensions of environmental vulnerability of different provinces and whether and to what extent these seem to be associated with indicators of freedom in terms of human development index. The presumption is that vulnerability is in a way the converse of sustainability- high level of vulnerability is symptomatic of unsustainable development. We developed as an example, a way of indicating environmental vulnerability on 16 aspects representing environmental, economic and social aspects of vulnerability. We chose 8 indicators or aspects for environmental dimensions and 4 indicators or aspects each for economic and social dimensions. Examples of environmental indicators include water scarcity, land degradation, forest fires or steppe fires; examples of economic dimensions include unemployment, credit default while social indicators include crime rate, lack of social infrastructure (such as health centres or doctors) or crime victimisation rate. An example of the 16 indicators for one province is shown in figure 2 below.

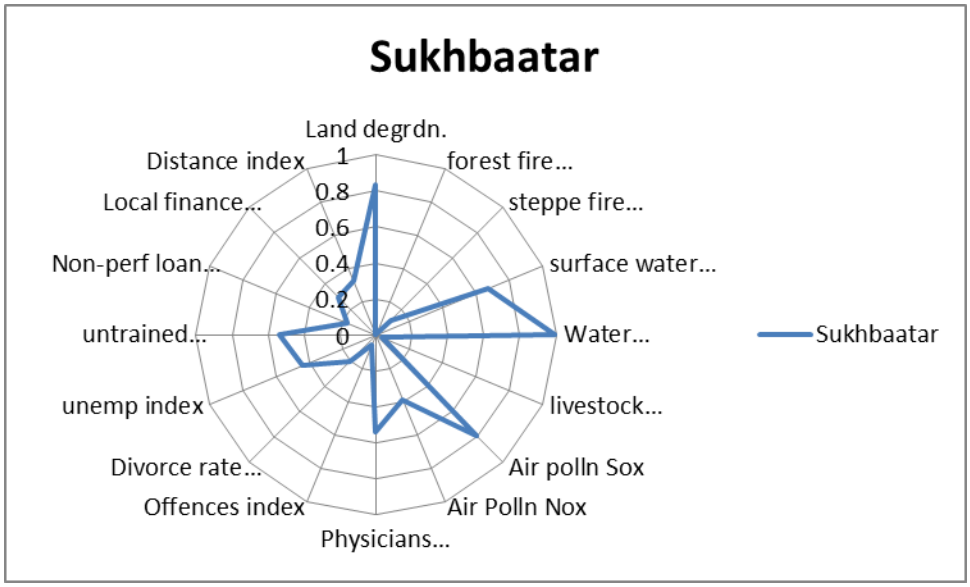

Figure 2: Environmental vulnerability of one province in Mongolia

Source: UNDP,2011; Anand,2011.

Using this we were able to construct a multi-dimensional environmental vulnerability (MEV) indicator which potentially has a range of 0 to 16 (if one province is the worse performer in every single aspect it scores the maximum possible 16 out of 16). We then compared the resulting MEV indicator with the human development index of the province. The (negative) association between human development index and MEV indicator is shown in figure 3 below.

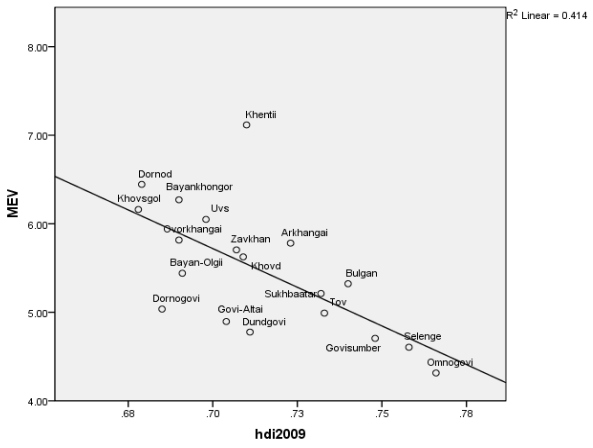

Figure 3: HDI and environmental vulnerability

Source: Anand,2011.

Although this is just an exploration, these results support the conjecture that improving well-being freedoms is associated with reduced level of vulnerability. We cannot comment on causality and direction of causality.

In terms of using the capability approach itself as the theory or paradigm and how one then moves from theory to policy regarding sustainability, the main emphasis should be on connecting and demonstrating how and which substantive freedoms would be diminished or eroded by unsustainable actions.

Although there has been considerable discussion on 'resource nationalism', at present this debate is rather narrowly focused on inequality in the sharing of benefits within existing citizens. There is also some evidence to suggest that a rather particular view of modernity is driving the development processes within Mongolia which includes a rather romanticised view of nomadic pastoralism of the country-side as being equally an important part of national identity ('we are modernising so we can reach those remote regions quicker'). However, there appears to be a danger that the real lived reality of the nomadic herders and drudgery (especially in harsh winters) is not one of natural choice. On top of this, there may be an inherent urban bias in the drivers of economic policy making such that herders are becoming more sedentarised with their seasonal movements becoming more narrowly limited in terms of distance and area than history suggests to be the practice. Herders are keeping one foot in the urban game- either through circular migration or by sending children to stay in the city while they continue to live in the country-side.

There is a need for further work to examine the role of deliberative public institutions and that of enhancing agency freedoms and to demonstrate that these will help in guarding those aspects of the environment that a society wishes to preserve for its future generations and allocate the burden of responsibility fairly between generations. For example, while the financial aspects of mineral rents are readily discussed, a broader discussion in terms of constitutional protections and the creation of a duty-bearer institution is needed. Also, there is a need to expand the scope of deliberative politics yet limit the scope of political interventions in certain aspects of culture and way of life in order to let individual citizens make the choices without their decision being dominated by considerations of economic incentives.

IV. Conclusions

Sustainability is an ethical consideration of inter-generational fairness or equity. The capability approach is a theory of distributive justice with its focus freedoms as both on ends and means. Thus, it is readily relevant to inter-generational justice.

An economic approach on the lines suggested by Solow is very useful and readily applicable to policy especially in terms of maintaining the overall portfolio of a society's capital assets intact. However, the concept of capital and enjoyment of a stream of benefits bring it closer

to utilitarianism (as things which do not generate a stream of benefits have little or no value). Also, the substitutability of one form of capital with others allows technical progress to maintain the capacity to be well-off but there could be ecological system driven limits or irreversible tipping points which can alter the exchange rate between one form of capital and another significantly (and perhaps unpredictably – though some risk mitigation measures may be feasible). Of course, it may be possible to include safe minimum standards (for example to preserve special areas such as Yosemite – as Solow acknowledges). However, an economic approach fails to respond to or recognise non-economic values that people may have with regard to various environmental resources (as for instance norms herders in Mongolia might hold with regard to management of pastures). Given the possibility of trade and the existence of multiple markets, it is possible that an economic approach to sustainability may result in under-valuing of certain capitals and over-valuation of other forms of capital. This may distort 'accounting prices' or shadow prices and artificially make certain projects very attractive (and impoverish certain groups of people or endanger certain kinds of ecosystems).

Even if we were to correct for such informational failures, the economic approaches fail in one particular dimension where capability approach can still remain valid. This concerns the moral foundations of inter-generational fairness. In the economic approaches, the ethical or normative justification for policy is external to human condition and the policy itself is generated from 'objective' or scientific analysis. The responsibility for action is usually placed on the state and perhaps users of economic approaches assume that such a state is legitimate and accountable to its citizens. The economic approaches are very useful in dealing with relative valuations and trade-offs between one form of natural resources with others but they are not able to deal with acts or preferences based on pure altruism, universalism in terms of fairness applicable to humans as well as non-human species and even within an anthropocentric frame, such eco-system changes that take a long time horizon before manifesting adequately.

In the capability approach, the policy decisions are not externally generated or imposed but are a product of deliberative public reasoning and agency of individuals. In fact, there is no need for a single policy- different policies should instead be evaluated for their role in enhancing substantive freedoms of all citizens. In that sense, the capability approach refers not to a particular set of policies but rather to the transition to a new way of policy making that recognises the agency of individual citizens and predominantly uses deliberative public reasoning for arriving at policy decisions. Through such processes, decisions and commitments may be reached which may restrict the use of certain resources or may require change in the way of doing certain things – but because both policy design and its evaluation are through deliberative public reasoning, winners and losers are clearly identified in advance and the necessary protection mechanisms in terms of human rights protections and other constitutional recourses already exist. All of this need not be a utopia- one does not have to reach this finished stage before beginning to apply capability

approach. The argument here is that the use of capability approach can help in evaluation of alternative approaches to sustainability and can help in enhancing the capacity of institutions and policy processes to be able to choose policies that enhance sustainable well-being and discontinue those that reduce well-being or reduce the sustainability of well-being. Corruption and mis-governance can be real challenges but the creation of deliberative public reasoning as the basis of policy making institutions is perhaps a long term but more likely to be a lasting solution to overcoming mis-governance and move towards better governance (Anand,2013). In that context, valuations used in policy analysis need not be based on economic exchange or market mechanisms but based on what individuals value and have reason to value (and this may have nothing to do with how others might value the same freedom or opportunity). Therefore, this allows for non-economic and cultural values to co-exist with scientific and exchange based values. In the Mongolian context, we can see why a predominantly economic approach towards extraction of minerals and mining can interfere or conflict with a conservation ethic based on either ecological or anthropological norms (of nomadic herding) and we can see how a capability approach can help to some extent to anticipate and deal with this through transparent and public deliberation.

Though I have discussed Raushmayer and Lessman criticisms to a 'capability approach to sustainability' and have suggested that these can be overcome, there remain a few other important challenges which I would like to highlight here. The issue of anthropocentrism can be overcome to some extent through the argument that the goal of expanding substantive freedoms stands on universalism of life-claims. However, the difficulty in practice is that some of these life claims may have no representative to make those claims (say certain species such as microbes which are not represented by any lobby group; or future generations who may only have a ‘collective voice’ but not the plurality of voices).

Second, though deliberative public reasoning and individual agency are essential elements of a capability approach, public deliberations do not always produce or result in ‘reasoned’ decisions. Thus, how do we resolve conflicts when expanding freedoms of one person results in the erosion or restriction of freedoms of another living being (a person living elsewhere, or a person of future generation yet unborn or a (non-human) living being such as a polar bear or the Mongolian gazelles or Gangetic river dolphin). If capabilities are considered as a set, I think it is necessary to find a way to specify whether responsibilities and obligations are inherent in capabilities (i.e., they are perhaps characteristics of individual elements in the capability-set) or whether these are indeed subsets or elements themselves. A capability approach may help us to recognise universal life claims but how these universal life claims can be evaluated especially when honouring one set of claims conflicts with those of others requires further clarification. Deliberative public reasoning may not be adequate to resolve the contested claims (as we see in entrenched conflicts or conflict type disagreements).

Third, whether the capability approach can give rise to making of claims retrospectively or whether it can only be applied in the present and looking forward is an issue. For example, even long after a Supreme Court decision on an issue such the Bhopal Gas Disaster or the building of the various dams on the River Narmada, some people remain challenging the original decisions. In those cases, a question arises whether we can apply the capability approach retrospectively to the erosion of loss of freedoms and hence reconsider how present well-being must be evaluated remains to be further examined. Capability approach offers some interesting possibilities to examine and evaluate both the broader landscape of institutions and policy making and also specific policies in terms of their contribution to sustainable well-being. There is much work to do to clarify these interactions and identify suitable methods to evaluate their impact on capabilities and sustainability.

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