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The Constrained Imagination of the IPCC

By: Anish Vanaik

"The 2022 IPCC Working Group III report on mitigation of climate change has little creative to offer on the critical questions of a deeply unequal international order and a disastrous structure of the economy."

IPCC's Working Group III report (WG3R), Climate Change 2022: Mitigation of Climate Change, published earlier this year, could be the last major scholarly study capable of having an influence while there is still time to avert the worst impacts of the looming climate crisis. We might demand from such an exercise a few things: the unvarnished truth about the scope of the crisis, a generous understanding of what needs protecting, a forthright statement of the barriers that prevent successful mitigation, and creative thinking about the way ahead.

The WG3R succeeds splendidly at some of these, has had its best impulses hamstrung at others and suffers from more troubling limitations in yet others.

WG3R follows on two related reports that employ the same basic procedure: they assess the best available scholarly literature. The strengths and weaknesses of the IPCC Assessment Reports, then, reflect those of what academia, expert groups and institutions have said about the climate crisis. Working Groups I and II discussed the physical science basis of climate change and the impacts, vulnerabilities and adaptations that will be needed. Between them, they paint a picture of an ever more certain and ominous transformation of the global climate, one that is already unleashing devastation and will continue to do so at an accelerating pace. That devastation will be visited with greater fury upon states in the Global South and the poorest people within them – outcome of the accidents of geography and the design of global and national socio-economic systems. WG3R considers what we might be able to do to mitigate the worst of this devastation.

Unvarnished truth and a generous understanding

Three key points recur in WG3R. First, that our current structure of life continues to drive us towards the worst impacts of climate change. The amount of greenhouse gases (GHG) gases emitted in the last decade was the highest for any decade in human history. A similar amount emitted in this decade will consume the entire remaining carbon budget for avoiding a 1.5 degree Celsius warming (B.1.3). (Numbers in brackets indicate the section of the report being cited.)

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The second point has sharper implications: the barriers to low-carbon trajectories are not technological or budgetary. Multiple mitigation measures are well understood technically. Putting these in place on a scale that cuts global emissions to half their 2019 levels can even be achieved for under US$100 per ton of CO2eq (C.12).

It's worth considering this point in conjunction with the third key point. Equity considerations are compatible with ambitious mitigation efforts. Indeed the report goes even further in suggesting that these equity concerns can help build public support for the transformations we need. The report affirms that the eradication of extreme poverty, energy poverty and providing "decent" living standards to all in the developing world, "can be achieved without significant global emissions growth." (B.3.3) On the contrary, it is the outsize lifestyles of the global elite which drives unsustainable emissions. WG3R is quite clear: the elimination of poverty and GHG mitigation are not in conflict, the consumption of the global elite and GHG mitigation is.

Visions of the future

Where are the 'low hanging fruit' of climate change mitigation? Unsurprisingly, energy supply is the best and most readily understood sector. Here the lesson is simple. A lot more of our activity will utilise electricity and a very high proportion of that electricity will come from renewable sources. The difficulties don't lie in the variability of renewable energy – a red herring often brought up. Instead, the key concerns with renewables are best addressed, WG3R outlines, through equitable and democratic consideration of trade-offs vis-

à-vis the land required for installing and running these and extending the infrastructure and electric grids that could complement them.

Transport and building are two other areas where the technological toolkit is amply supplied. In a rapidly urbanizing world, the report outlines the many ways to effectively mobilise well-understood design principles and techniques. These include making buildings more energy efficient and cities mixed-use, ensuring that in these cities the shorter distances between home and work are navigable through electrified public transport, bicycles, or walking. (Such a vision has been long championed by scholars like Dinesh Mohan and Geetam Tiwari for Indian cities.) With a measure of planning and regulation, a comfortable urban future is still possible.

The report echoes another area of 'low-hanging fruit' that has been a growing focus of the scholarly literature: demand-side mitigation. One measure of the wastefulness of modern life is that the GHG mitigation potential through demand-side management is at least 40% and perhaps as high 70% of what we need to get our emissions down to zero (C.10). The bulk of this could be achieved largely through constructing better buildings, wasting less food, planning to minimise car transportation, and optimising our use of industrial materials for their ecological impact (TS 5.8). A large number of these changes would lead to healthier living and other co-benefits.

Two common mistakes in thinking about the demand side are effectively dispatched in this report. First, the report emphasises that demand-side mitigation does not mean curtailing the ambitions of the poor in the Global South to have a good standard of life.

Second, the report steers clear of placing the burden of demand-side mitigation on highly disciplined individuals (TS 5.8). While some individual actions can be significant – a reduction in meat intake being prominent – carrying out these changes without broader infrastructures being rolled out will not achieve much. Reducing demand thus looks more like choosing to ride comfortable public transport and living in high quality public housing with collective infrastructures for heating and cooling, than experimental individuals living in rural Gandhian simplicity.

Other areas present more complex trade-offs and difficulties. Agriculture, Forestry and other Land Uses (AFOLU) is a sector with high mitigation possibilities also with the most severe barriers to realising mitigation potential. For instance, the report points out, forest conservation efforts could cut out indigenous and other forest-dwelling communities. Within the agricultural cycle, some of the most significant emissions come from livestock and rice cultivation (both generating methane)and the use of fertilizers (that lead to the emission of nitrous oxides). Mitigation measures would aim to cut back or transform these arenas. WG3R remains agnostic about whether this is best achieved through elevating techniques of regenerative agriculture or through emerging technologies. It does, however, strongly suggest that deliberative planning processes be set in place that can incorporate indigenous communities and agrarian classes in tackling the trade-offs involved.

The areas of contemporary life that are likely to prove hardest to mitigate lie in heavy industries – specifically cement, plastics and steel. Even here the report suggests that net zero might be achievable through a combination of electrification, demand management, upgraded grids, and other emerging technologies. The daunting task is to coordinate the implementation of these changes rather than the technical capacity to achieve mitigation.

Taken together, the message on sectoral mitigation measures offers hope. The world, at its pace of population growth, can sustain a decent life for everyone on it. We need to alter the way in which we organize that life. There are infrastructures that need to be built for this. For developed countries, where current infrastructure promotes unsustainable consumption a dramatic and rapid transformation is needed. For developing countries, where infrastructures are currently being built, they need to be planned with an eye to this kind of future and with equitable trade-offs where required. WG3R, here, seems to say "We're in deep trouble and heading for worse, but we do have the technology and knowledge needed to avoid the worst if we act fast and if….

Forthright statements and creative thinking?

That "if" is where everything rests. A plain reading would complete that sentence in all the following ways:

…Planned development rather than the profit motive dictate courses chosen

…The power of climate villains is neutralized

…Equity and collective flourishing remain our guiding aims

Instead, however, W3GR hedges its bets.

The failure to be forthright is the result of shortcomings born of the process by which the IPCC reports are compiled as well as the limitations of the underlying scholarship itself.

W3GR's 'Summary for Policy Makers' (SPM) bears the marks of the ways in which the science and political forces have clashed in the drafting of the report. This is the section most likely to be read by a wide public and aims to present a fair summary of the research. An initial draft of the SPM sent to representatives of national governments was leaked earlier this year; so too were the various demands for revision made. The differences don't reflect well on either European countries like Switzerland – who asked for softer wording about the inadequacy of the finance offered to developing countries – or for developing countries like India keen to hang onto coal as the mainstay of energy production for the next few decades. Manipulations are also rife – there is a long history of staffers from oil companies being authors of the IPCC reports and this one was no exception.

> For a report that repeatedly underlines the importance of planned and considered development…WG3R does not explore the ways in which capitalism as a system or the power of capitalists precludes this.

The result is that the final SPM dulls down the sharpness of the rest of the report about the fossil fuel industry. In WG3R's technical summary and the relevant chapters we read that most current coal-based infrastructure will have to be retired 10-25 years before their estimated lifespan (Box 6.2). Coal consumption must fall by 67–82% by 2030 (TS 5.1) and that any new investments in coal and fossil infrastructure will create lock-ins that make it harder to limit warming to 2 degrees Celsius. Action on coal, the science suggests, must be immediate. In the SPM these stark findings are massaged into the idea that a phase out of fossil fuel is one of the "major options" (B.7.2).[1]

It is also disturbing to find the SPM present Carbon Capture and Storage (CCS) as a technology that could allow greater amounts of existing fossil reserves to be tapped and reduce the necessity for stranded fossil fuel assets (E.g. B.7.2, C.3, And C.4.4).[2] CCS, aims to create "negative emissions", by variously pulling carbon out of the atmosphere and durably storing it. Many versions of 'net-zero' rely upon wildly optimistic assessments of the technology to push for minimal or delayed changes. The main body of the WG3R, however, gives no warrant for continuing large scale fossil fuel use with CCS.[3]

For a report that repeatedly underlines the importance of planned and considered development – at sub-national, national and international levels – WG3R does not explore the ways in which capitalism as a system or the power of capitalists precludes this. There is little mention of strands of socialist thinking that have engaged with the interrelationships between power, wealth, material flows, ecological questions, and the struggle for greater equality.

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The most significant example of this in WG3R is in its discussion of private production and the market. For instance, a paragraph that hopes to point to ways corporations can contribute to decarbonisation begins with praise for the idea of strong sustainability business models (SSBM) and ends saying that "SSBM are difficult to maintain if generally traditional business models prevail, requiring short-term accounting" (5.4.3). An impressive set of contortions indeed. The simple fact is that "traditional business models" chafe at ecological or regulatory (or indeed any) limits in the search for profits. In general, WG3R seems to suggest that corporations (particularly ones that make profits of climate-mitigation technologies) and profit-driven markets can be part of the large-scale solutions.

WG3R reflects a dim awareness of other ideas for organizing economic and social life. The technological and economic optimism of WG3R is fundamentally opposed to the ethos of degrowth advocates. Their work and insights about material flows and the need to shrink parts of current economic activity do find mention, though no deep engagement. Instead, the UN's Sustainable Development Goals (SDGs) are the seemingly consensual compass for equitable development. However, as has been pointed out by many, SDGs are themselves a contradictory set of compromises, unable to offer a coherent vision of developmental trajectories and bereft of any guide to how they might be achieved, or why they aren't being achieved (Menton et al 2020, Kopnina 2016, Carant 2017, Hickel 2019, Weber 2017). The prominence of SDGs, here, is an example of the limits of the academic literature on developmental questions.

The constrained imagination is also evident in WG3R's assessment of international cooperation. The report is keen to suggest that Kyoto and Paris represent incremental forward movement (E.6). It also supports the idea of climate clubs (TS 6.2). (This is the favoured approach of neoliberal thinkers disillusioned with current paradigms of international cooperation. It involves smaller groups of nation-states setting up their own sets of targets and forms of cooperation with regard to climate targets.)

In contrast with the relatively rosy picture of international agreements so far, the report offers only vague gestures towards what must surely be the starting points of any scientific assessment of international cooperation: that there has been no commensurate action in line with the principle of Common but Differentiated Responsibility. Neither climate clubs nor Paris align with any kind of equitable international order with respect to climate mitigation. This has been one of the key reasons for logjam in climate negotiations. The chapter on finance paints developed countries in even worse light than the one on international cooperation. Financial flows have been woefully inadequate in quantity and regressive in direction (largely between nations of the developed world).

Thus, on two critical and intertwined questions – a deeply unequal international order and a disastrous structure of the economy – WG3R has little creative thinking to offer. (A remarkable passage describing the methodological shifts of successive Assessment Reports, from the first to the present sixth, points to the ways in which it has had to throw off the constricting methodological individualism of much mainstream economics and social science. (Box TS.11.))

Worse, it is unable to connect the picture emerging from its own findings elsewhere to these realms in any meaningful way.

It is neither prepared to honestly reckon with the record of corporate greening efforts, nor the role of the profit motive in generating the environmental outcomes we currently wrestle with or even point decisively to the scale of transformation of the basics of economic and social life that implementing WG3R measures would require. Any ambitious initiative along these lines will have to firmly eschew market forces in favour of a much larger and more active part being played by the state in the economy. An equitable version of those initiatives would need a decisive and deeper democratisation of societies and the substantive increase in the power of sections that are locked out of the status quo: workers, farmers, the poor and indigenous communities around the world.

What does this mean for India?

WG3R offers, a menu of mitigation possibilities. As with any other country these could, in combinations tailored to India's particular conditions, put India on a low-carbon trajectory at low cost. How well-placed is India's climate response to chart such a course?

In fact, India's domestic record on climate-related (or any other type of environmental) planning, is dismal. Navroz Dubash, the closest observer of India's climate policy regime and one of WG3R's lead authors, has over the years chronicled the stop-start nature of climate policy and most recently termed it "opportunism" (Pillai and Dubash 2021, Bidwai 2012). The pattern is in fact, clear: active efforts to foster climate governance have depended on the predilection of individual high-ranking officials. (In one instance, referring to one of India's previous environmental ministers, scholars have suggested that India's substantive climate policy was only "[Jairam] Ramesh deep" (Pillai and Dubash 2021)).

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Absent individual initiative, alacrity on climate issues has emerged in two circumstances. First, when market incentives happen to align with climate considerations – India's championing of the disastrous Kyoto-CDMs and the recent growth of renewables (which accelerate or slow down based on market pricing) are both excellent instantiations. Second, when posturing at international summits – both Manmohan Singh and Narendra Modi have made dramatic announcements at international venues with little institutional study or will to back those up. Indeed, the continuing absence of a serious systematic planning structure around climate mitigation is a testament to the fact that, as many commentators on India's climate regime have noted, the climate question has tended to remain in the realm of a foreign policy question more than one for domestic policy. This is a stance that, Dubash and others have noted, is increasingly unviable. (Bidwai 2012; Pillai and Dubash 2021).

Ultimately, it is the domestic configuration of forces that shapes the capacity of states to carry out the kind of careful coordination of development trajectories that WG3R lays out. Crucially, this requires the capacity of the state to discipline capital. In the Indian context, the repeated failures of planning are precisely outcomes of this longer-term skewed power equation that favours business and landed elites (Chibber 2006). Whether in the Nehruvian period or in the last three decades of neoliberalism, India has been a singularly unsuccessful developmentalist state. In such conditions, to hope for cohesive and equitable climate action from the Indian state seems a pipe dream. Particularly since both Adani and Ambani - the iconic representatives of current crony-capitalism in India - are substantially invested in fossil fuels.

Do more and differently

One should emphasise that India is not unique in this kind of a domestic dilemma. Indeed, taming the power of capital and the market to set the limits to social imagination is the battle that will have to be won in most parts of the world in order to win the just equitable transition to a low-carbon future that the WG3R tells us is technologically possible today. It has become blindingly clear that "business as usual" will not get us there. Hope, if it lies anywhere, lies in movements – climate-related, ecological, and the much wider range of movements on a host of other questions – which help move us towards such a taming. For these movements, WG3R offers a guide to develop ambitious climate agendas that can integrate with other aims. WG3R, for better and worse, holds up a mirror to the current state of scholarly discussion – one that I have suggested bears the marks of numerous constraints. We are fortunate that forces beyond academia refuse to have their imaginations or action constrained in quite the same way.

Anish Vanaik teaches at the John Martinson Honors College at Purdue University. He is a member of Teachers Against the Climate Crisis, an India-based collective.

Footnotes:

1 India, whose claims to build out some of the remaining coal consumption might be considered better than many other countries, however, is repeatedly taking up the position of global villain in this context. https://www.bbc.com/news/science-environment-58982445 and https://www.reuters.com/business/cop/india-proposes-new-wording-phasing-coal-down-not-out-2021-11-13/

2 A wide range of commentators beyond fossil fuel lobbies hold that some Carbon Dioxide removal will be necessary – given the technological possibilities, however, the best approach is to restrict this to the few areas where CO2 emissions truly hard to mitigate – the manufacture of cement, plastics, air-travel and emissions related to nitrogenous GHGs emitted for agricultural fertilizers. In these sectors, the argument goes, Carbon Dioxide Removal ought to go hand in hand with efforts to minimize GHG emissions through other mechanisms – managing demand, best practices. In one expert calculation the total extent of emissions from these areas 1.5-3.1 Gt of CO2eq. https://cdrprimer.org/read/chapter-1

3 It's telling that, in the scientific literature some models assume as much as 29 Gt CO2eq per year will be mitigated through CCS (cited in https://cdrprimer.org/read/chapter-1). WG3R anticipates a rate somewhere in the realm of 5.75 GtCO2eq. (TS 5.7).

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