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The Paris Agreement, which was finalized at the Conference of Parties 21 (COP21) has been signed by 175 countries on April 22, 2016. This is the first step in implementing this historic agreement which seeks to limit global warming below 2°C. The ratification of this agreement, based on parliamentary discussion and approval within the signing countries would be the next step in making it come into force. Perhaps, this is the best time for nations to reflect on the best ways to implement the Paris Agreement.

This issue of Southasiadisasters.net focuses on the theme of 'Implementing COP21 Paris Agreement'. It highlights the views of some of the most reputed academics and practitioners who have closely followed the evolution of this agreement. Important aspects such as the Intended Nationally Determined Contributions (INDCs), national mitigation and adaptation strategies have been highlighted in this issue. Similarly, this issue also highlights the role of international partnerships; public systems and sharing of technical know-how between nations in the pursuit of climate justice.

Developing countries like India have the additional onus of reconciling the development aspirations of their people with the commitments of the Paris Agreement. Therefore, it will be valuable to see how innovatively can India and other nations implement the Paris Agreement to make the world safe from the adverse impacts of climate change.

- Kshitij Gupta, AIDMI

Implementing Paris Agreement in India

The agreement in Paris must reduce emission and poverty, both. The December 2015 consultations at the Conference of Parties 21 (COP21) yielded the Paris Agreement. A total of 195 countries signed this agreement to limit global warming to 2°C by submitting their intended nationally determined contributions (INDCs). It is now time to reflect on how can the Paris Agreement be implemented in India, a country with very ambitious INDC target.

It will take both determination and money to make the INDC work on the ground in India. Road maps are being made by the government as well as by various civil society organizations at several levels. Key think tanks are busy working out ways to move ahead in implementing and verifying the implementation of India’s INDC. The government has set up the International Solar Alliance (ISA) to use more solar energy at home and abroad - India has contributed US$250 million as well as land and buildings for ISA, while the government of France has invested €300 million to lend to solar energy parks and related industries in India and in other developing countries. What is needed is a series of project development facilities that pull together skills, vision, knowledge and initial finance to set the ball rolling.

I must also mention that Indians will approach the implementation of the INDC from many directions. There is the government's "growth" approach, which dominates public expenditure. Civil society groups are also exploring the use of what is now called "bioeconomics" with a focus on ecosystems. Meanwhile, leading economists are talking about the "Economy of Tomorrow", with focus on much broader economics not driven by "growth" but shared prosperity for all including social and ecological gains. Artists are talking about "We in Climate Change" with focus on inclusion. Several concerned voices have been raised to put biodiversity, ecology, inclusion and jobs at the centre of INDC implementations. The way of Anubandh, or mutually beneficial, communities that reduce the distance between producer and consumer as a way of thinking more holistically about economic decisions is being promoted by women’s groups and Gandhian thinkers. There is definitely diversity and richness in the way India aspires to move ahead with the INDC.

The convergence of Sustainable Development Goals (SDGs) and the INDC has yet to take place in any formal and operational manner in India. Both may agree and overlap in many aspects, but both may still have elements that go in two different directions. And this is natural for any entity which is growing in many directions simultaneously. There is a need for better convergence of emission and poverty reduction for India’s prosperity.

- Mihir R. Bhatt

Indian farmers; courtesy World Bank.
Implementing Cop 21 Paris Agreement in South Asia: A View from India

Delegates from India attended the much hyped international climate talks in Paris in December, 2015 walking a tightrope. Suave Indian Diplomats were on a tough mission with a pre-decided agenda. The strategy was to demonstrate, in a lucid and succinct manner, that the world’s fourth-biggest carbon emitter was all set to engage in a productive role in international climate negotiations. The negotiators showed citizens back home that participating in climate change talks would not result in a deviation from its core development goals—predominantly the need to bring power to the quarter of the population that goes without it.

India has emerged as a key player in shaping the agreement. India’s role here at the Paris talks was to bring together the many nations, developing and developed, across the world and also bridging development with climate action. It played the role of being the ‘monkey in the middle’.

India’s charismatic Prime Minister Narendra Modi had vociferously reiterated the fact that the country needs to tackle climate change, not because of the mighty force from the Western world but because of the possible harm global warming could cause across the globe and in India particularly. The country set a rather ambitious goal of receiving 40% of its power from renewable resources by 2030. It lead the path by setting an example by launching a solar power coalition aimed at growing solar power production in the developing world, specifically South Asia. Of late India also established a goal to develop 100 GW of solar power capacity by 2022, a huge jump from the existing capacity.

The notion that developed and developing countries should have common but differentiated responsibilities has been a chief principle of climate negotiations since countries first gathered in a large-scale conference to deal with global warming in Rio de Janeiro in 1992. The pushy Prime Minister boldly watched over a principle that developed countries should have more inflexible and rigid responsibilities than their developing counterparts—a concept known as “Common but differentiated responsibility”. The Indian diplomats clearly suggested that this principle should be a prerequisite of almost every terms of the agreement. India, despite contributing slightly to the problem and having inadequate capacity to confront it, would have been placed under unjustified pressure to impulsively limit emissions. "Climate justice demands that, with the little carbon space we still have, developing countries should have enough room to grow," he said at a speech at the beginning of the Paris summit.

India has rightly positioned itself and insisted on maintaining its stance on the "Differentiation" rule. It is based on the idea that the pains taken by the country so far outweighs its role to climate change. Statistically speaking, India’s per-capita carbon emissions add up to a mere 1.7 metric tons, which is nearly 10 times less than America’s per-capita emissions. It wouldn’t be an exaggeration to establish that India has done four times their fair share to combat the devil of what we call climate change, based on previous carbon emissions, while the developed countries little or nothing. It is a bleeding pity and a crying shame that the developed world has done much less than their fair share.

India refused to relent at this conference. So, has India gained anything from the Paris Agreement? Yes and no. The final agreement includes a rider that would require countries to consider how to submit international reports on how to perk up carbon emissions reductions every five years. India had formerly argued that such a measure should be voluntary. The agreement also includes provisions of a technical review process of both climate actions and monetary contributions that are meant to ensure countries take their updates very seriously. Besides, it also includes transparency provisions and a comprehensive worldwide 'stocktake' on the cumulative effect of these actions. Many other provisions in the agreement are in India’s favour, namely tough language surrounding a pledge by developed countries to send more that $100 billion top the countries of the developing world for efforts aimed at addressing climate change. On balance, India has few losses and more gains because the Agreement provides space for larger energy use, but with the caution that we have to be in a position to rationalize our actions through a sustainable national process that will also be subject to international enquiry.

But, the frantic pursuit of a universal comprise continues. — Chitvan Singh Dhillon, Economist and Freelance Journalist, Chandigarh
The Paris agreement means that all countries have to make efforts to combat climate change by reducing their greenhouse emissions based on their past, present and future responsibilities. Both Russia and India are parties to the agreement even though their part in contributing to climate change differ greatly – Russia as an industrialised nation has contributed to much more greenhouse emissions than India has. While India played a key role in ensuring that a deal was reached in Paris, the difficult part for India will be in implementing the deal while ensuring that its industrialisation and economic growth is not affected. Given the historically close relations and trust between New Delhi and Moscow, implementing the COP21 Paris agreement seems to be one area where the two countries can work together.

For India to transition from an agrarian and services based economy to a manufacturing based and urbanised economy, it needs fuel. The problem so far has been that India has been a carbon based economy. India needs to transition from a coal-based economy to cleaner fuel. The interim solution to this would be to substitute gas for coal as this is the cleanest hydrocarbon. Russia of course has an abundance of gas. However, the problem here is how to transport gas over such a large distance given that India and Russia do not share borders. The solution could be for India to invest in gas fields in Russia. India could then enter into a swap arrangement with a third country which is able to supply its own gas to India and take India’s share of gas from Russia. This would benefit not only India and Russia, but also third countries.

India has now no choice but to invest more in clean energy sources or end solutions like solar power, wind power and nuclear power. This is where Russia’s expertise and resources would come in handy.

Russia is already building several nuclear plants in India. During Prime Minister Modi’s recent visit to Russia, the two countries signed an agreement according to which Russia will help build 12 more nuclear plants in India based on the ‘make in India’ model. Even though it is a cold country, Russia has considerable expertise in photovoltaic cell and HJT (hetero junction with intrinsic thin layer) technology. If this can be used for solar energy and if Russia is willing to share this technology on commercial terms, India’s solar industry could develop. Russia’s technology will be much cheaper than Western technology. Given Russia’s current economic travails, this could be economically beneficial to Russia as well.

India can also learn from Russia in the future its experience in making greenhouse emissions mandatory for companies. New Delhi and Moscow could work together on more fuel efficient technologies through the India-Russia working group on Science and Technology.

The history of India-Russia relations shows how much good can come if the two countries come together. After all, the first indigenous oral polio vaccine in India was a result of the Integrated Long-term Programme of cooperation (ILTP) with Russia.

– Uma Purushothaman,
Assistant Professor, Department of International Relations, Central University of Kerala, Periy, Kasargod, Kerala

Source: IISD Reporting Services
In 2002 and 2003 I was a doctoral student in urban studies who carried out fieldwork in Ahmedabad about disaster risk communication. More than ten years later I seem to have a déjà vu as all those issues and topics I was researching on at that time seem as prevalent as ever. Having lived in Chennai now for the past two and half years, I experienced first-hand a calamity of a so called 'natural disaster'. In spite of all these years, the International Strategy for Disaster Risk Reduction (ISDR), and a detailed report of the High Powered Committee on Disaster Management in 2002, not much progress in this field of urban risk disaster preparedness, prevention and mitigation appears to have percolated to many state and local levels in India. The events that unfolded in November and December 2015 brought out once more manifold critical issues of India's urbanization processes and development path in general, leaving us with the question whether it is at all a consequence of climate change. To add to the dramatic situation, the COP 21 Paris climate negotiations were under way at the same time. It seemed like a mystical sign pointing out that it is a direct consequence of the ongoing climate change, or so various voices—among them Prime Minister Modi who was in Paris at that time—suggested without doubt.

When disaster strikes at this scale, the search begins for the causes and reasons. It may be helpful in a first analysis to understand it as a co-production of high urban vulnerability that leads to such misery. A large number of agents play a role in the urban development processes observed today, residents, government agencies and political decision-makers, as much as the corporate sector, in particular the building and construction as well as the real estate sector. In many panels that followed the flood, environmental activists and urban experts strongly made the point that the flooding occurred as a result of the predominant urbanization process and neck-breaking economic development path at large combined with inefficient and at times incompetent governance structures. It is well known in risk studies, that well thought out organisational and management structures are a key to risk reduction.

This is the time now to enforce implementing the global agreement negotiated in Paris at the local level. Since 2014 Tamil Nadu has a State Climate Action Plan in Place with a component on sustainable urban habitat. It is urgent to translate this now into an operational plan of concrete actions. Here lies the opportunity in the aftermath of such a disaster: awareness of the flood risk and consequences is very high now across the public, civic and private sectors. This momentum must be utilised to turn relief work into a mid-to long-term development perspective. What is needed is the creation of a systemic awareness of urban-regional development processes, i.e. recognising the interlinkages of water, waste, energy, sewerage, ecological requirements, etc. among stakeholders and to form institutional conditions to protect and develop these interdependencies in a smart way! As much as we noticed these systemic connections in the negative - water logging on the roads resulted in no power any more, which resulted in no water supply any more, eventually a breakdown of waste collection – so much we have to rethink and re-organise these so that they are resilient in the positive in the future.

Dr. Christoph Woiwode, Visiting Professor, Indo-German Centre for Sustainability, IIT Madras
Pakistan is situated in the most vulnerable region, which is prone to intense climate change and natural disasters due to its diverse range of terrain stretching cylindrically from the Arabian Sea to the Himalayan peaks.

Until the devastating earthquake of October 2005, the perception of risk from hazards in Pakistan was focused upon the annually recurring floods only. Since the October 2005 Catastrophic EQ incidence, and even post 9/11 war on terror, there was a growing realization that Pakistan is exposed to a variety of hazards both natural and manmade reflecting the diverse geo–physical and climatic condition of the country. During the last few years we have experienced not only floods, EQ beside manmade disasters but have experienced the devastating impact of heat waves and drought in the Sindh Province.

The issue in the developing world remains that the focus is primarily on acute disasters (flood etc.) rather than slow onset issues (global warming due to climate change impact caused by deforestation, industrialization etc.) which are the root causes of acute disasters. This is because of the fact that the developing world is facing the double burden of both acute and slow burn situations contrary to developed nations where the focus remains on slow burn issues; due to economic instability, lack of resources, population over growth and their dependency on climate sensitive sectors like agriculture or tourism thus making them more vulnerable to the effect of extreme weather events. Moreover, high income industrialized nations are further contributing in this situation as they are getting the benefits of industrialization but their negative impacts bring climate change issues affecting the developing world due to direct relationship of industrialization associated with increase emission of greenhouse gases, thus leading to global warming.

Paris agreement is a fine initiative & much needed commitment by the world for taking effective measures thus keeping the global temperature low. But here the developed world needs to play a more pro–active role and should contribute a larger share than the developing world, as their economic activities in the form of industrialization are significant contributors of global warming. Unlike poor countries they are also less vulnerable to acute disasters which are further placing the poor countries at risk with financial and human losses.

Pakistan during the last few years has faced many challenges in relation to the negative impact of climate change on agriculture, water availability, drought, heat waves, intrusion of saline sea water in the Indus Delta threatening coastal ecology, fisheries and farming beside acute disasters. Despite its limited resources all these issues are on the priority agenda of the national policy. Keeping in view these situations even though after devolution in 2010, Ministry of Climate Change was established and accordingly Climate Change Policy was devised. Govt is committed to take all such measures contributing in addressing Global Warming but unfortunately during the last few years we have experienced EQ, floods consecutively beside man–made disasters and all our resources have been diverted to address these acute situations.

At this point appropriate measures as per Climate Change Policy are required for environmental friendly electricity production (shift to solar or wind energy), adopt modern/safe technology agriculture, training of farmers, and improve forestation, to invest in capacity building. The main constraints in the implementation of this policy document include financial, technological and capacity problems. While the democratic process is maturing in Pakistan and competitive social environment is developing, conditions are ideal to cash upon the talented youth and dynamic leadership to engrave the environmental awareness in society and policy implementation.

In Khyber Pukhtoon Khawa (KPK) “Green Growth”/ “Billion Tree” initiative project has been started in wake of rapidly depleting forest resources with long term aims of reduction of GHG emissions. A country with fadind resources needs to start such initiatives all over the country with transfer of technology from developed nations for the production of re-newable electricity production (solar/wind/hydro) along with sufficient financial support.

Paris agreement will be successful only if followed with true spirit otherwise it would remain limited as a policy document as many others in the past. Responsibility rests upon prosperous nations to take effective measures for keeping the world safe through controlling global warming as they are the main contributors with maximum resources. If appropriate actions are not taken then the hazardous impact of global warming will not only affect the poor countries but will also affect the rich countries as global warming is not limited to specific zones or people but is a universal phenomena.

– Dr Asif Sukhera and Dr Sabina Imran Durrani; National Health Emergency Preparedness & Response Network (NHEPRN), Pakistan
When the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change began in Paris last December, two extreme events happened in the two most populous countries in the world. In India, Chennai was drowned in floods. In China, smog blanketed Beijing hiding even the blue sky. The Paris climate summit focused much on extreme events triggered by climate change. What should Chennai do for a better future?

Chennai needs to have stone / grill walls around the remaining portion of the Pallikaranai marshland (with frequent gaps for water to pass) to serve as flood plains. Such a thing is done in the Yamuna Biodiversity Park and the Aravalli forest in New Delhi. The portion of Pallikaranai marsh is the last of the flood plains at least partly free from construction activity. In 2007, 780 acres of the Pallikaranai marsh was declared a reserve forest area and brought under the Forest Department. This is an effort to protect the remaining wetland from shrinking further. Despite this, garbage is being dumped occasionally within this forest area. The marsh is helpful in recharging the aquifer too. Forests are considered beautiful but marsh is generally considered ugly.

This is despite the fact a marshland has high biodiversity and it hosts migrant birds too. In the climate change scenario, marsh lands are peats which can hold up high quantum of carbon. There has to be a change in the mindset to appreciate marshlands. The vast developments such as posh roads, information technology companies, auto companies, housing, educational/research institutions and garbage dumping sites have eaten away major portions of the Pallikaranai marshland. It is an irony that development has resulted in this human-made disaster.

The reservoirs and outflow channels should be de-silted to hold and carry more water. One of the valid reasons why water is not released even when the reservoirs are full is that we would like to hold as much water as possible for the next dry season. But then, when further rain comes unexpectedly, vast quantum of water is released all of a sudden without enough early warning which causes havoc. Rain forecasts should be taken seriously and risk of releasing particular volume of water before the anticipated heavy rain should be taken. If encroachment in the catchment areas and river beds and banks is allowed for construction, cultivation, etc, then at times of excess rain the storage space gets reduced. It is wise to demarcate the catchment and flood plain areas and get them fenced. Displaying caution boards indicating the importance of conservation is also a way to curb unauthorized land grabbing. This is done in several parts of the world. Oddly, just before the present rains a corporate hospital had been filling up a reservoir claiming that it has patta land there but this work was stopped after public protest.

If only we had perfected rainwater harvesting in each building, much of the runoff could have been prevented and groundwater recharged as well. In the name of affordable housing particularly under the Joint Venture (JV) scheme, the open space stipulated around the building is, of late, not left free by most builders. Even if there is some open space that is cemented preventing percolation of rainwater. We have good laws but it is time we implement them.

– Dr. I. Arul Aram, Asso. Professor (Science Communication), Department of Chemistry, Anna University, Chennai
INSTITUTIONAL MEASURES

Role of Public Systems in Implementing COP 21 Paris Agreement in India

In December, 2015, 195 countries which are party to the United Nations Framework Convention on Climate Change (UNFCCC) agreed upon a new text of guidelines in Paris called the ‘Paris Agreement’. The agreement aims to limit the global warming below 2°C (UNFCCC, 2015). The draft agrees to extend the funding support of $100 billion annually between 2020 and 2025. It has accepted the intended nationally determined contributions (INDCs) submitted by the countries as their pledged targets up to 2025 and 2030. The INDCs need to be finalized and hence converted to NDCs. The agreement will open up for signature on April 22, 2016 and will come into effect and become legally binding when at least 55 parties with at least 55 percent of the total global Greenhouse Gas (GHG) emissions sign it.

India is expected to sign the agreement to ratify it on the opening day. In its INDC, India has committed to reduce the emissions intensity per unit of its GDP by 33 to 35 percent below 2005 up till 2030. It also intends to enlarge its carbon sink capacity to 2.5 to 3 billion tonnes of CO2 equivalent through increased tree cover and forestry efforts by 2030(Gol, 2015). Each mission under the NAPCC is housed under a central government ministry. The national initiatives are supported by various state level policies as proposed under the state action plans on climate change and are a mandate of the respective State Departments of Environment or Science and Technology. Various non-governmental organisations and private sector players are also expected to participate in achieving these actions. The Prime Minister’s Council on Climate Change (PMCCC) formulated in 2007 for coordinating the NAPCC has been reformed by the new government. The Executive Committee on Climate Change comprising of the sectaries of various ministries was formed in 2013 for monitoring the implementation of NAPCC. The government of India also has a National Steering Committee on Climate Change (NSCCC) whose role is to approve and monitor the state level proposed actions under the National Adaptation Fund on Climate Change (NAFCC).

The Ministry of Environment and Forest has been rechristened as the Ministry of Environment, Forest and Climate Change although the organizational structure and the operational responsibilities have not changed as such. With actions proposed under various sectors and a need for financing these pledges, the central government needs a much more co-ordinated effort. (Dubash & Josep, 2016) find that such complex institutional landscape in practice reduces the effective coordination. The Paris Agreement has recognized the role of local governments in combating climate change for the first time. This adds another layer of governance to the existing institutional structure. The donor agencies and funding agencies add one more institutional dimension to the implementation story. Also, the capacity at all these levels of governments is limited. Achieving the goals of Paris agreement through nationally co-ordinated efforts is a humongous task for a diverse country like India which needs enhanced capacity in terms of the quantity and quality of the individuals involved at various governance levels.

– Vidhee Avashia, Doctoral Student, Indian Institute of Management Ahmedabad, Gujarat
Paris Climate Agreement emerged successful with a narrow escape from disaster as it ran into overtime. As differences persist between USA and emerging economies, President Barack Obama used his authority to save American interests. The most important push to this climate deal was not the perception and understanding of climate change impacts among participating countries, but a phone call from the President Barack Obama to Chinese and Brazilian presidents and Indian Prime Minister on the last day i.e. 11th of December, of the Conference, led to the signing of this 'historic' agreement. Had President Obama been so powerful politically and internationally, the Summit at the Copenhagen in 2009 been successful. There is further scope for research as to what pressure tactics as well as assurances were extended by the USA to emerging economies of China and India.

As for India, the newspapers headlines concerning Paris Climate Conferences varied from: "Creators of climate change must cut emissions", and "Nations whose rise was powered by fossil fuels must bear more burden" attributed to the Prime Minister of India. At the same time, a group of developing nations comprising India, China, and others stated the Global Climate Deal must produce a clear climate finance road map and ensure rich nations bear a heavier burden. Contrary to this, Paris agreement reveals that 'Least developed countries and Small Island Developing States have special circumstances' are eligible for provision of support. It is evident that both China and India are not eligible for any adaptation and mitigation support.

The Guardian reported on 13th December, "When US officials realised Paul Oquist, Nicaragua’s delegate, planned to deliver a fiery speech denouncing the deal, Secretary of State John Kerry and Raúl Castro, the Cuban leader, telephoned Managua to make sure Oquist spoke after the agreement was adopted, when it would in effect be too late". Thus the US involvement in the shaping and architecture of Paris Climate Deal was significant. Nigel Purvis has rightly called The White House’s COP21 goals: less climate idealism, more political realism. International Business Times remarked that COP21: Paris climate talks have failed by letting the rich off the hook. The Guardian reported on 12th December, 2015, that James Hansen, an Adjunct Professor at the Columbia University and known as father of climate change awareness, calls Paris talks 'a fraud'. Of course the idea of financial support to certain category of nations particularly least developing and island nations cannot be ignored. In this connection Stephen Dinan of The Washington Times—Sunday, November 29, 2015 quoted Ugandan Foreign Minister Sam Kutesa who was explicit earlier this year when asked what it would take for developing countries to sign up for the emerging U.S.-led climate deal: "Money." Thus the issues of equity and Common But Differentiated Responsibilities (CBDR) were laid to rest with this agreement.

**Why USA and other Developed countries were eager to conclude a Climate Deal?**

Baseless arguments have been made by developed countries that developing countries including India and China will be the worst sufferer from climate change impacts. In a recent example of pressurizing India to accept developed countries' analysis that India may be hotter by 8°C and loose $200 billion per year (Hindustan Times, July 16, 2015), forgetting the devastation caused by European heat waves that killed 70,000 Europeans in 2003. In the Ten global ranking of heat wave mortality, European heat wave
mortality was the at the top, followed by Russian heat wave, and US heat wave mortally figured at 3rd, 4th, 7th, 8th and 9th positions. India's heat wave mortality in 2003 was placed at number 6th ranking. In one of my papers I argued that not only India and China but even developed countries–USA, U.K. and other nations of Europe are vulnerable to climate change. Katrina (2005) and Sandy (2012) hurricanes had devastated USA, and flooding in Europe and forest fires in Australia and recently in California are examples that show that even western countries are more vulnerable.

The last week of December, 2015 had been a great disaster for England and southern United States as flooding devastated these regions. The huge blizzard which pounded the eastern coast of the in eastern Virginia (United States) during the fourth week of January 2016 has broken all records. In my view the developed countries particularly the United States were adamant to conclude Paris Agreement in their favour, as the Americans and other developed nations realized that they are more vulnerable to climate change impacts.

Regarding the use of coal for energy I assert that each and every country uses its own resource for power generation. Australia, Germany, India possess rich coal reserves. Therefore, these and other countries with rich coal reserves, use it mostly for its power generation. As the meeting of COP21 in Paris concluded in a Climate Agreement, In my opinion India failed to take stand based on Kyoto Protocol that states "common but differentiated responsibilities", clearly meaning that West must first reduce their emissions substantially.

In one of my papers published in 2010 from Brussels, I've clearly stated the association between Country’s GDP and CO2 emissions. Thus, high emissions is a must for development for developing countries. In Paris P.M. Modi has rightly asserted that "Climate change is a major global challenge. But it is not of our making," (Hindustan Times, 1st December, 2015) and "Nations whose rise was powered by fossil fuels must bear more burden."

At the earlier meeting of the G8+5 in Heiligendamm in July 2007, former Indian Prime Minister also indicated that we are determined to see that India's per capita emissions never exceed the per capita emissions of the of the industrialized countries.

Since India has taken a logical stand on emissions reduction, and in the US, Congress has rejected Obama's efforts to reduce GHG Emissions, it seems unlikely that a Paris Climate Treaty will be approved by the Republican dominated Congress. Both Donald Trump and Ted Cruz, candidates for Republican nomination for Presidential elections in the US are against Paris Climate Agreement. I don't believe In climate change" Trump said flatly, while Ted Cruz doesn't believe in man-made climate change or Science behind it" (The Atlantic 9th December, 2015). It seems likelihood that if Republican win the US Presidential election, the US might pull out of Paris Climate Agreement as they did when Kyoto Protocol accord was signed. However," President Obama's special envoy for climate change has warned Republican presidential hopefuls, including Donald Trump and Ted Cruz that any attempt to scrap the Paris Climate Agreement would lead to a "diplomatic black eye" for the US" (The Guardian, 16th February, 2016).

In the Historical context, Paul Baran in his book *The Political Economy of Growth* (1957, New York) stated that the colonial drain was a mercantilist concept—India's loss of economic resource and their transfer to Britain was a consequence of her political subordination. The coming of British Rule in India had broken up pre-existing self sufficient agricultural communities, and forced a shift to the production of export crops, which distorted the internal economy. (Baran). The resources from African and South Asian colonies were used to develop industrial base of Liverpool and Manchester. Baran also suggests that about 10% of India's gross national product was transferred to Britain each year in the early decades of the Twentieth century.

In the light of above, India failed to assert Kyoto Protocol principle of "common but differentiated responsibility" between developed and developing nations, for gaining access to green technology and finance for both adaptation and mitigation.
The COP21 Paris Agreement: Reducing or Creating Vulnerability?

The signing of December's COP21 agreement in Paris was a momentous occasion. The world joined together to tackle climate change with a far-reaching international process which will direct climate change efforts for years to come.

Amongst all the well-deserved kudos, we need a sober reflection on the effectiveness of the Paris agreement for reducing vulnerability. With vulnerability being the root cause of many development and sustainability challenges faced today, what will the Paris agreement achieve for reducing vulnerability? Unfortunately, not much.

A principal operational concern is that the Paris agreement is mainly voluntarily. The reason is that a fully legally binding agreement would not likely have been ratifiable. So why should voluntary measures succeed?

Decades of research provides evidence regarding the balance needed between top–down and bottom–up approaches and between voluntary and binding measures. The hype over the Paris agreement does not reflect this experience, as it emphasises mainly top-down, voluntary measures.

This category covers national commitments to emission reductions. Promoted as being bottom-up because they reflect country suggestions, it is hard to reconcile national government contributions as being bottom-up! How many people are really represented by their government, even in an electoral democracy? How many governments will change and then also change their commitments to climate change and the Paris agreement?

The national commitments to emission reductions are further puzzling because, if they were all fulfilled perfectly, then they would not be expected to reach the Paris agreement's stated temperature goal of "well below 2°C above pre-industrial levels". The top-down, voluntary measures of the Paris agreement do not match with each other.

The choice of a 2-degree target, with an added mention of 1.5 degrees, is...
also questionable. The science is not clear regarding whether global mean temperature is a suitable metric for dealing with climate change. Alternatives discussed are net CO₂-equivalent emissions and global mean ppm levels of CO₂-equivalent.

Are any better or worse than the other? It is hard to know without understanding the main aim. From long-standing development research, the fundamental goal has been clear: reduce vulnerability.

Vulnerability refers to the processes by which people and communities can be harmed; for example, due to floods, storms, and droughts. If vulnerability is not redressed, then these phenomena can be hazardous to people and communities. Disasters occur due to vulnerability.

Climate change influences these examples of environmental phenomena, but not so much many others such as volcanoes and earthquakes. Many other influencers of the same environmental phenomena exist. In many places around the world, river engineering—including dams and levees—influences floods and droughts far more than climate change.

Sometimes these influences increase vulnerability and sometimes they decrease vulnerability. The key to development is ensuring that all aspects of vulnerability are considered by an intervention, so that vulnerability is reduced overall.

By focusing on a single influencer, climate change, the Paris agreement cannot fully embrace the philosophy of vulnerability reduction. Instead, it separates topics, rather than connecting as done by another voluntary international agreement, the Sendai Framework for Disaster Risk Reduction. A third voluntary international agreement, the Sustainable Development Goals, also separates out climate change.

Why should climate change be separate? Splitting topics counters the ethos of past development and vulnerability reduction work. It creates silos and deliberately sets up tensions and trade-offs amongst actions which, after all, should be aiming for the same goal.

Instead, truly tackling vulnerability and its root causes, to help people help themselves, requires us joining forces, working together, and ensuring that any agreements will actually achieve their goals. The Paris agreement does not achieve that.

– Ilan Kelman,
University College London

A principal operational concern is that the Paris agreement is mainly voluntarily. The reason is that a fully legally binding agreement would not likely have been ratifiable. So why should voluntary measures succeed?

Editorial Advisors:

Denis Nkala
Regional Coordinator, South-South Cooperation and Country Support (Asia-Pacific), United Nations Development Programme, New York

Madhavi Malalgoda Ariyabandu
Sub-Regional Coordinator, Central Asia & South Caucasus, United Nations Office for Disaster Risk Reduction (UNISDR), Kazakhstan

Ian Davis
Visiting Professor in Disaster Risk Management in Copenhagen, Lund, Kyoto and Oxford Brookes Universities

Mihir R. Bhatt
All India Disaster Mitigation Institute, India

Dr. Satchit Balsari, MD, MPH
The University Hospital of Columbia and Cornell, New York, USA

T. Nanda Kumar
Chairman, National Dairy Development Board (NDDB), Anand, Gujarat, India

ALL INDIA DISASTER MITIGATION INSTITUTE
411 Sakar Five, Behind Old Natraj Cinema, Near Mithakhali Railway Crossing, Ashram Road, Ahmedabad–380 009 India. Tele/Fax: +91-79-2658 2962
E-mail: bestteam@aidmi.org, Website: http://www.aidmi.org, www.southasiadisasters.net

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