

# PARIS AGREEMENT RULEBOOK MUST ENSURE EQUITY AND AMBITION





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# Preface

COP 23 is starting on 6<sup>th</sup> November 2017 at Bonn. The world is gearing up to take the next step to discuss and agree upon the mechanism to implement the Paris Agreement—‘Paris Rulebook’ which will influence the national policies for a long time. The core concern among the developing countries like India is how to ensure equity in operationalizing the Agreement and differentiation between the developing and poor countries and the industrialized countries. We believe that equity and ambition is at the core of as making Paris Agreement achieve the objective of preventing rise in temperature not only well below 2 degrees Celsius but below 1.5 degrees Celsius. The window for 1.5 degrees opportunity is fast closing.

While Paris Agreement and Nationally Determined Contributions (NDCs) are binding nationally, another set of objectives laid down by the Sustainable Development Goals (SDGs) are ambitious and aspirational. We hope that both of them together will work in tandem to secure a safe future for humanity and ecology. Paris Agreement and the SDGs framework are not sufficient in themselves to reach this gigantic task of eliminating poverty, and restoring climate systems and safeguarding ecology for future generations. They will have to be made to work for people and the planet by a resolute will of the countries sustained by pressure from below, that is peoples’ power.

We at Beyond Copenhagen, CECOEDECON and PAIRVI have been following the global negotiations and developments along with interacting with communities, affected populations and political stakeholders and trying to bridge the intersections among development, rights and sustainability.

The present publication is a mosaic of issues relevant to the climate negotiations and the implementation of the SDGs, which is relevant for this COP as well as times to come. Many of them go

beyond the apparently visible issues and try to address systemic issues like inequality among the countries, imbalance in power structures in the society including discrimination against women and corporate hegemony which looks at climate and sustainable development as opportunities to sustain and enhance their profits. We wish you an interesting read. Please do write to us if you want further information on our activities and campaigns.

Sincere regards

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(Public Advocacy Initiatives for Rights & Values in India, Delhi)

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# **Bonn COP 23; Ensuring Equity in the Paris Rulebook and Pre 2020 Commitments Should be the Priority**

Ajay K. Jha

The Paris Agreement (2015) binds 197 countries to take effective steps to prevent end of the century rise in temperature well below 2 degrees Celsius and pursue genuine efforts to keep it at 1.5 degrees Celsius. As of now 168 countries have ratified the Paris Agreement. The Agreement is not binding internationally implying lack of punitive measures for any country not abiding by the Agreement. However, it is binding nationally once countries have put their Nationally Determined Contributions or NDCs (of emission reductions) in the public domain. All countries big and small, low income or high income and irrespective of their contribution in the atmospheric carbon stock previously have not only to produce NDCs but also to scale emission reduction every five years. Analyses suggest that even if the current collective pledges (NDCs) are met the rise in temperature at the end of century may be of the tune of 2.7 degrees to 3.5 degrees. The withdrawal of the US from the Paris Agreement adds another layer of complexity in reaching Paris goal.

The mechanism to implement the Paris Agreement known as the Paris Rulebook is yet to be agreed upon and has to be concluded by 2018. The 23rd Meeting of the Conference of the Parties (COP 23) is taking place in Bonn Germany under the Fijian Presidency on 6th to 17th November. The significant challenges that lie ahead for developing countries are to ensure “differentiation” in the responses and efforts of

developing and poor countries, ensuring adequate finances, technology and capacity to help smaller countries build low carbon development pathways, as well as to raise ambition of industrialized countries to meet Paris climate goals.

## **Outstanding issue**

The most urgent task that faces Bonn COP is advancing progress on the Paris Rule Book. The rule book was expected to be adopted by the first Conference of the Parties serving a meeting of the parties of the Paris Agreement (CMA1). The CMA 1 was dramatically convened at Marrakech the Paris Agreement reached its double threshold days before Marrakech COP 22. CMA1 decided to hold CMA 1 in suspension till the Ad Hoc Working Group on Paris Agreement (APA) prepares the rule book in 2018. Almost all the elements and modalities to finalize the rule book are wide open. The core concern among the developing countries is how to ensure equity in operationalizing the Agreement, and how to create differentiation between the developing and poor countries and the industrialized countries. This is fiercely contested by the industrialized countries, which argue that the binary distinction of the Kyoto Protocol has been done away by the Paris Agreement, which seeks all parties to make their best efforts (even the industrialized countries themselves are far short of putting their best efforts).

The main areas of contention remain transparency, accountability and reporting, implementing NDCs and raising it to meet Paris climate goals, role of market mechanisms, review modalities, finance and loss and damage etc.

## **The Paris Rulebook**

Under the Paris Agreement countries are supposed to report their respective efforts in mitigation, adaptation, climate finance, technology and capacity building etc. to the UNFCCC secretariat, in order to make them accountable for implementation and compliance or the lack of it. Transparency and accountability will be ensured by putting the efforts in an international registry. Many developing countries argue

that the elements included in national climate action are voluntary and strict monitoring may undermine national sovereignty. As against this industrialized countries want communication of concrete outcomes of the national plans. Developing countries insist that such compliance is agreeable only when reporting requirements are different for developing and industrialized countries. Industrialized countries oppose this vehemently underlining that the biggest achievement of the Paris Agreement is overcoming such differentiation. This interpretation of the Paris Agreement is problematic as it completely and grossly overlooks the equity and historical responsibility of the industrialized countries). An equitable resolution can only unlock the potential of the NDCs and enable countries to raise their NDCs to match Paris climate goal. The equity question is also related to greater ambition in industrialized countries NDCs, which should be the sole consideration for the full cooperation of the developing countries.

## **Finance**

Climate finance has always been a major issue since Copenhagen COP with the illusory promise of the \$ 100b put forward by the industrialized countries, and demand of the developing countries for a road map for this. The OECD countries came up with a road map just before Marrakech claiming that public finance to developing countries will be of the order \$67 b by 2020 and \$93-133 can be raised by leveraging private funds. They also claimed that \$62 has been already delivered in 2014-2015. However, UNFCCC report estimated that a total of \$26 b has been delivered during that period. The OECD road map was severely criticized and COP 22 decision did well not to mention that report.

One of the positive developments on the finance front was with regard to the future of the Adaptation Fund (AF). The AF was created by the Kyoto Protocol and was due to expire in 2020. However, looking at its significant role for the developing countries COP decided to continue it. It will serve the Paris Agreement. However, depleted funds from the 2% levy on the CDM funds raise serious issue on its future. Germany and some other European countries pledged an amount which may be

sufficient to keep it live only till the next COP at Bonn. The levy from the SDM, which PA proposes will also fall short of resuscitating the AF. There are discussions around private financing. Germany during its G 7 presidency in 2015 launched Insure Resilience Insurance Initiatives to mobilize private funding; efforts like these should not replace public finance for adaptation.

Another concern with regard to GCF funding is that while many countries are able to access directly; a large part of the amount is deployed through multilateral development banks like EBRD which also finances fossil fuel exploration and investment projects.

## **Loss and Damage**

Warsaw international mechanism for loss and damage was started at Warsaw COP in 2013 and is due for review. Developing countries are asking for a thorough review, which will take place only in 2019. However, a positive development from the southern perspective is that WIM will consider dealing with funding of losses and damage as of 2017. Therefore, Bonn will hopefully bring new momentum to the loss and damage under the Fijian presidency. Fiji is a highly vulnerable SIDS country which was ravaged by cyclone Winston in early 2016.

## **New market mechanisms and agricultural carbon**

The Paris agreement envisions a UN controlled and unified market mechanism, under Art 6. This includes a SDM, which is similar to the CDM under the Kyoto protocol. After Paris almost everybody is convinced that with the bottom up mechanism and no compliance provisions, the new market mechanisms cannot achieve a high price for carbon so that it creates significant emission reduction or incentivizes renewables market. The threshold price required for this as stated by the World Bank is \$120-130 per ton of carbon. The carbon seems highly unlikely to achieve this price in near future. As of now 80% of currently traded carbon is below one third of this threshold price. One also must not forget that even after 20 years of the introduction of the CDM and 11 years history of the EUETS only 12% of carbon is covered either

through carbon tax or ETS globally.

Despite manifested failure of the carbon market, there is an artificial enthusiasm in the proponents of the carbon market. The foremost reason is the high importance given to the negative emission technologies. Though yet not recognized as valid emission reduction technology; industrial countries are also building pressure to include agricultural carbon in the market. Big agricultural countries like India, Brazil and Argentina do not want to negotiate agricultural carbon which they see only as a subject of adaptation. However, EU wants agricultural carbon as having important role in carbon neutrality due to its huge support for biofuel. EU has already allowed agricultural carbon offsets in the ETS. In a parallel effort the so called Climate Smart Agriculture (CSA), which aims at intensification of industrial agriculture and promotes interests of fertilizer and pesticide companies (to which FAO, World Bank and CGIAR have provided a front) has spread through the continents. It will be interesting to see how resilient climate negotiations in agriculture are to the onslaught of the CSA.

In the meantime, ICAO has also laid down a market based mechanism known as CORSIA to offset aviation emissions. It is expected that the greatest demand for agricultural or forest offsets will be from the airlines in future.

## **Business overreach in climate agenda**

While there is no significant action happening at national space, UN is turning towards industries and big corporations. Big business (including fossil fuel companies) with their grandiose claims of “bringing trillions” for climate and sustainable development, are the new climate champions, irrespective of their contribution to the crisis. Global Climate Action Agenda, launched at Lima (2014) along with NAZCA Climate Platform, composed of big business, and other non-state actors like state, regional governments and NGOs, are regular feature of the COP since then. At Marrakech, they were joined by “Climate Champions” Laurence Tubiana and Hakima El Haite, which launched yet another platform Marrakech Partnership for Global Action. Many believe that business taking a lead in climate will only

mean proliferation of fancy false solutions, deviation from core issues and sustained profits for the fossil fuel behemoths.

Negotiations have a typical tendency of postponing things till it can. It's important that all the nuts and bolts of the Paris Rulebook are fixed well ahead of 2018 and there is much ground to be covered in Bonn rather than shifting the goal post of the next COP which will be held in the European coal heartland Poland. The COP 24 has already heavy agenda of consideration of the special IPCC report on 1.5 degrees scenario, review of (adequacy of) the national goals and measures before thorough review of the PA is undertaken in the Global Stock take in 2023. The developing countries must not lose sight of the fact that resolution of core issues, cap on coal, enhancing ambition of industrialized countries, real cuts in emissions, pre 2020 promises and equity remains central in the negotiations.

# Changing Trends in Global Energy Finance

Soumya Dutta

The year 2015 was called a landmark year in terms of global environmental action. Two global agreements were reached and sealed – both critically concerned with the future environmental health of the earth and the sustainability of nature and human society. The adoption of the 17 Sustainable Development Goals (SDGs) in September 2015, followed by the Paris Agreement on limiting climate threatening temperature rise, in December 2015 – though not considered ‘revolutionary’ by many as they failed to turn the destructive run of human extraction and consumption – were at least successful at bringing global focus on urgent actions along with identifying what actions are needed.

As energy production and consumption is a major contributor to the GHG emissions and many other environmental and social impacts undermining sustainability, the 2015 global agreements should also have started a major and quick shift away from highly threatening sources and modes of energy operations to much cleaner ones. That also means a shift away from fossil fuels, and from the clearly dangerous nuclear fission process. New financing of energy projects should reflect whether that has started to happen, so let’s take a ‘brief look at energy financing trends globally’, in 2015.

1. The first clear trend, though not as pronounced as it was envisaged, is the percentage reduction in global fossil fuel funding in 2015. At just about USD 1000 billion, it was 55% of the total global energy financing of all sorts, amounting to USD 1830, down

from 61% of the total in 2014. This includes everything from mining-extraction to supply to consumption, and was before the two global agreements officially came into being (2016 data will be available a little later).

2. The total energy financing also came down by about 8% from about USD 2000 billion to about USD 1830 billion. This was for several reasons, including the continued economic downturn in Europe, slowdown in coal in China (the biggest player by far), the continued fall in prices of renewables – particularly solar photovoltaic panels etc.
3. The other big fossil fuels, oil and gas saw the biggest drops in investments, by about 25% from the 2014 levels, and the 2016 preliminary data indicates another 20%+ fall in 2016. Despite these, this sector remains the biggest recipient of financing at about USD 583 billion in 2015. If 2017 also see a drop, that will be a first for this sector, a welcome one.
4. Renewable energy sector also saw an absolute fall in terms of investments, to about USD 312 billion, but in terms of new RE installed capacity, it was an increase from 2014. That continued in 2016 too. One reason is – again – the drastic fall in prices per unit capacity.
5. Energy efficiency investments also saw a healthy rise in its percentage share, reaching about USD 220 billion, from under USD 200 billion in 2014, taking about 12% share of total energy investments. 2016 is continuing this trend. The building sector, including more efficient lighting and appliances, received a hefty investment of about USD 118 billion. This has a much larger effect than investing the same amount in new renewable power.
6. The biggest threat to global climate and sustainability – in the energy sector – comes from coal, and though global coal use fell nearly 5% in 2015, nearly a third of all new power plants in the global pipeline, roughly 1161 GW out of 3165 GW, is still coal based.
7. Acting as a counter measure to the continued major presence of coal power, the renewable energy sector saw an investment of around USD 314 billion (including bio-fuels, solar thermal

applications etc). Though this was not a big increase in dollar terms from 2014, the capacity addition was much larger due to falling unit cost. A larger increase in investment is indicated in 2016.

8. The total investment in the electricity generation sector was about USD 420 billion, with renewable electricity receiving about USD 288, or roughly 70% of the total.
9. Unfortunately, driven largely by Chinese investments, coal power financing increased to nearly USD 78 billion, a jump of well over 20%, while the comparatively cleaner fossil fuel, natural gas based power, saw a decline of nearly 40%, to about USD 31 billion. In 2015, China created new coal power capacity of about 52 GW by investing over USD 45 billion.
10. China and the USA remained the two big energy investment countries, despite a steep fall in investment in the USA. Chinese investment in the total energy supply chain touched USD 315 billion, a significant part of it in overseas coal and oil.
11. US investment in the entire energy supply chain dropped to about USD 280 billion – largely because a sharp drop in investment in oil and gas sectors. At the same time, the US investment in new power capacity was almost 90% towards renewable power, accounting for about USD 40 billion.
12. China remained the world's largest investor and installer of renewable energy based power, reaching over USD 90 billion, or about 60% out of its total power generation investment of about USD 146 billion. Wind energy in China received a big boost, and solar thermal reached a healthy figure of USD 15 billion.
13. Another big energy player, the European Union, invested over USD 85 billion in power generation, with renewables accounting for about USD 55 billion, or 85%. New wind power received about USD 30 billion of these.
14. Nuclear power capacity rose by over 10 GW, receiving about USD 21 billion in new investments. This is the highest investment in nuclear power in the last 20 years or so, with China alone accounting for about 32%. In the new nuclear construction also, China is investing over 50% of global total.

15. The networks to supply power or electricity, the grids, also received a big boost in financing, with USD 260 billion coming their way, a near 15% increase from 2014. With the rapid addition of variable renewable power, over USD 30 billion was invested in making grids compatible. Out of this USD 260 billion, about USD 90 billion or 35% was invested to upgrade old networks, as these are creating problems in integrating the renewable loads. The largest investors in grids / networks were China, USA, EU and India.
16. The newest kid in the network horizon is battery storage for variable renewable power, and at over USD 1 billion, it comprised of about 10% of total investments in electricity storage, the rest mostly going to pumped storage projects. With the emergence of Tesla's PowerWall, it is expected that this sector will grow fast, and help balance out some of the variations of renewable power, along with smart grids.
17. As a result of the shift to less carbon intensive power capacity addition, the new power capacity that came online is projected to have a carbon dioxide emission of less than 450 Kg CO<sub>2</sub> / KWHr generated, a significant improvement over the existing overall power capacity with CO<sub>2</sub> emission of close to 550 Kg/ KWHr. This need to be compared with about 800 Kg/KWHr from coal power plants, and close to 900 Kg/ KWHr from Indian coal plants. If anyone feels elated by this slow improvement, a sobering thought is that, for achieving the Paris Agreements climate target of even the 2°C limit, the global power fleet need to emit no more than 100 KG CO<sub>2</sub>/KWHr ! A very long way to go indeed.

Sources – Multiple, WEI, Banktrack report, OilChange report

# UNFCCC's Current REDD+ Framework can not Address Deforestation and Forest Degradation, It Needs a Radical Change

Souparna Lahiri

Last October, the 18th meeting of the Green Climate Fund (GCF) Board cleared the Request for Proposal (RFP) of the pilot for the much-highlighted REDD+ Result Based Payments Mechanism. The pilot programme will run till the end of 2022.

At its fourteenth meeting, the GCF Board, through decision B.14/03, paragraph (b), requested the Secretariat to develop a request for proposals (RFP) for REDD-plus results-based payments (RBPs), including guidance consistent with the Warsaw Framework for REDD-plus and other REDD-plus decisions under the United Nations Framework Convention on Climate Change (UNFCCC).

Paragraph 35 of the Governing Instrument confirms that REDD+ financing is eligible for GCF support. In addition, paragraph 55 notes the possibility of the implementation of results-based financing approaches, including for incentivizing mitigation actions, and payments for verified results, where appropriate.

As of June 2017, 25 countries have completed their reference levels, and the Technical Analysis by the UNFCCC technical assessment team are completed and published in the UNFCCC REDD+ Info Hub for 12 of them. Four countries have submitted REDD+ results to the UNFCCC Secretariat. Based on gross assumptions, the potential volume of emissions reductions from countries fulfilling all the UNFCCC requirements could range between 600 and 2500 million

tonnes of CO<sub>2</sub> eq over the last 2 to 4 years from 4 to 5 countries.

## The Cancun decisions

Developing country Parties aiming to undertake the activities referred to in paragraph 70 of the Cancun decisions, in the context of the provision of adequate and predictable support, including financial resources and technical and technological support to developing country. Parties, in accordance with national circumstances and respective capabilities, have to develop the following elements:

- (i) A national strategy or action plan;
- (ii) A national forest reference emission level (FREL) and/or forest reference level (FRL) or, if appropriate, as an interim measure, subnational forest reference emission levels and/or forest reference levels, in accordance with national circumstances, and with provisions contained in decision 4/CP.15, and with any further elaboration of those provisions adopted by the Conference of the Parties;
- (iii) A robust and transparent national forest monitoring system for the monitoring and reporting of the activities with, if appropriate, subnational monitoring and reporting as an interim measure, in accordance with national circumstances, and with the provisions contained in decision 4/CP.15, and with any further elaboration of those provisions agreed by the Conference of the Parties;
- (iv) A system for providing information on how the safeguards referred to in appendix I to this decision are being addressed and respected throughout the implementation of the activities referred to in paragraph 70 above, while respecting sovereignty.

Paragraph 72 of the same text also requested developing country Parties, when developing and implementing their national strategies or action plans, to address, inter alia, the drivers of deforestation and forest degradation, land tenure issues, forest governance issues, gender considerations and the safeguards identified in paragraph 2 of appendix I to this decision, ensuring the full and effective participation of relevant stakeholders, inter alia indigenous peoples and local Communities.

## **Design and requirements of the RFP**

The RFP will have two stages. In the first stage, Concept Notes will be received by the GCF up to 12 months after the launch of the RFP, allowing any interested countries that have fulfilled the UNFCCC requirements for receiving results-based payments to apply. In the second stage, countries that are notified of their eligibility will have up to six months to submit a Funding Proposal to the GCF.

By the time of submission of a Concept Note, the following information related to UNFCCC requirements, including the elements reflected in decision 1/CP.16 paragraph 71, should be in place and made publicly available:

- (i) The National REDD+ Strategy (or Action Plan);
- (ii) FREL/FRL that is applied to the results period for which payments are sought are submitted to the UNFCCC and have undergone the Convention's Technical Assessment;
- (iii) National Forest Monitoring System (description provided in the BUR Annex);
- (iv) A safeguards information system (SIS) to inform how the safeguards are addressed and respected, and a summary of information on how all the Cancun REDD+ safeguards were addressed and respected.

The REDD+ results, for which payments are requested, are submitted to the UNFCCC in a Technical Annex of the country's Biennial Update Report (BUR) by the time of submission of the RBP Concept Note. The scale of the REDD+ results-based payments proposal should be national or (subnational in the interim period).

## **Modality and scope**

The proposals should account for tonnes of emissions reductions or enhanced removals at a national or subnational level. Any subnational program proposal should be of significant scale, one political level down from national scale and defined by each country, demonstrating that an aggregation of such subnational units can constitute the national level. Subnational level proposal should also demonstrate ambition to scale

up to national level, and should demonstrate a contribution to national ambition for emissions reductions, for example, the NDC and/or the implementation of the national REDD+ strategy.

The FREL/FRL and REDD+ results reported on the UNFCCC REDD+ Info Hub will be assessed against the relevant criteria (as defined by the GCF), building on the UNFCCC Technical Assessment of the FREL/FRL and Technical Analysis of the BUR Annex.

The information provided in the summary of information on how safeguards were addressed and respected during the results period will be evaluated according to the criteria defined by the GCF.

The RFP has allowed elements of carbon trading as the basis for payments of incentives. Results based payment will be made on the verified Emission Reduction (ER). The GCF, taking leads from FCPF, REDD+ Early Movers (REM), Norway-Guyana and Norway-Brazil. Bilateral agreements on valuation of ERs. The current value is fixed at USD 5 per tonne of CO<sub>2</sub> eq. The proceeds in lieu of ERs generated are subjected to:

- (i) ERs not being transferred to GCF
- (ii) Reinvesting the proceeds in activities in line with countries' Nationally Determined Contributions (NDCs) as established under the UNFCCC Paris Agreement, REDD+ strategies, or low-carbon development plans consistent with the objectives of the GCF.
- (iii) Pending further decisions under the UNFCCC, countries (where applicable) could consider at their own discretion to use emissions reductions achieved toward their NDCs.
- (iv) Cannot be used elsewhere or as offsets.

The size of the RFP in terms of payments will vary between USD 300 million and USD 500 million with a cap of 30% of the total envelope (30 MtCO<sub>2</sub>eq) during the entire length of the pilot.

## **Behind the façade of technicalities and procedures**

It is evident from the documents<sup>1</sup> produced by the GCF secretariat

<sup>1</sup> Please read Request for proposals for the pilot programme for REDD-plus results-based payments, Green Climate Fund, September 2017 and can be accessed from the GCF website

and decisions emerging out of various COPs that the operationalising REDD+ RBP involve a lot of technicalities and procedures involving quite a number of agencies and technical committees and coordination between them. It also involves varying abilities of developing country governments, capacity building of state actors, policy and legislative decisions and donor coordination. The primary objective is to:

- (i) Reduce emissions from deforestation;
- (ii) Reduce emissions from forest degradation;
- (iii) Conservation of forest carbon stocks;
- (iv) Sustainable management of forests;
- (v) Enhancement of forest carbon stocks;

It is all the more important, therefore, that UNFCCC's REDD+ programme including the National REDD+ Action Plans clearly identify and address the drivers of deforestation and degradation and spell out the basic elements and architecture behind sustainable management of forests including the structure of forest governance and the actors there in.

This is precisely where both the UNFCCC decisions and GCF RFP are vague and lack clarity, depending fully on the ability and responsibility of the proposer country governments with a highly centralised and bureaucratic National REDD+ Programme emerging out of the continuing centralised forest administration and governance, often with a colonial past and legacy with the history of appropriating the community forest resources and severely curtailing the traditional rights of the indigenous peoples (IPs) and local communities (LCs).

In the scorecard prepared by the GCF secretariat to evaluate eligibility of proposals, a lot of weightage has been given to the national forest monitoring system (NFMS) and the FREL/FRL while the issue of identifying drivers of forest loss and addressing them is missing. Identifying the drivers of forest loss and addressing them are important since many countries have legislative provisions for deforestation signifying economic growth and development. Also, the resultant forest loss is addressed through sequestration and increasing forest carbon stocks through the planting of monoculture plantations using the broad definition of forests where plantations are brought under forest cover.

The Cancun decisions on REDD+ were adopted subject to the Cancun safeguards:

- (i) That actions complement or are consistent with the objectives of national forest programmes and relevant international conventions and agreements;
- (ii) Transparent and effective national forest governance structures, taking into account national legislation and sovereignty;
- (iii) Respect for the knowledge and rights of indigenous peoples and members of local communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples;
- (iv) The full and effective participation of relevant stakeholders, in particular indigenous peoples and local communities, in the actions referred to in paragraphs 70 and 72 of this decision;
- (v) That actions are consistent with the conservation of natural forests and biological diversity, ensuring that the actions referred to in paragraph 70 of this decision are not used for the conversion of natural forests, but are instead used to incentivize protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits.

First of all, the RFP requires a report of due diligence on how the Safeguards were addressed and respected through the Summary Information on Safeguards (SIS) which will be evaluated only through the mechanism of scorecard as mentioned earlier and there is no scope for an independent review or evaluation of whether and how the Cancun Safeguards fare in the REDD+ programme.

Both the Cancun Safeguards and the RFP eligibility criteria evoke national circumstances, national laws and sovereignty to follow the current national forest programmes, national forest governance structures and prevalent paradigm of protection and conservation of natural forests through, for examples, protected areas and expansion of protected areas. Whereas the Cancun Safeguards talk of “Respect for the knowledge and rights of indigenous peoples and members of local

communities, by taking into account relevant international obligations, national circumstances and laws, and noting that the United Nations General Assembly has adopted the United Nations Declaration on the Rights of Indigenous Peoples”, the GCF scorecard fails to mention, in specific, the UNDRIPS.

## **UNFCCC’s REDD+ Framework needs a radical change**

There is increasing scientific and political recognition that conservation and restoration initiatives by indigenous peoples and local communities contribute significantly to halt forest loss, degradation and biodiversity conservation. However, these initiatives face external and internal threats. To address the community conservation initiatives and to empower them with policy, legislative actions and financial support the forest governance structures need to change in favour of decentralized forest governance where community rights over forest resources and community forest governance are recognized and respected. Otherwise, any effort to reduce and halt deforestation and degradation and conservation of natural forests and biodiversity, and, therefore the UNFCCC REDD+ will remain a non-starter and bound to fail to achieve its aims.

There is already indications of rights abuses made by Indigenous Peoples, scholars, and activists, in the context of readiness and implementation of the United Nations Framework Convention on Climate Change’s (UNFCCC) REDD+ Framework as cited in a review of the REDD+ readiness and implementation of the REDD+ Framework by CIFOR.<sup>2</sup> The CIFOR info brief

- Reveals multiple allegations of abuses of the rights of Indigenous Peoples in the context of Reducing Emissions from Deforestation and forest Degradation (REDD+) readiness and implementation.
- Findings from the review should be transformed into opportunities for REDD+ to promote and strengthen the rights of Indigenous Peoples.
- A rights-based approach to REDD+ requires engagement with

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<sup>2</sup> Barletti Juan Pablo Sarmiento and Larson Anne M, Rights abuse allegations in the context of REDD+ readiness and implementation, A preliminary review and proposal for moving forward, CIFOR, 2017 and can be accessed at [http://www.cifor.org/publications/pdf\\_files/infobrief/6630-infobrief.pdf](http://www.cifor.org/publications/pdf_files/infobrief/6630-infobrief.pdf)

indigenous men and women as rights-holders, rather than as project beneficiaries.

- Parties should be pressed to investigate abuse allegations, enable access to justice, and develop grievance mechanisms within REDD+ processes.
- REDD+ risks exacerbating issues of unsecured rights and pre-existing conflicts over land in the contexts in which it is being readied and implemented, unless it is re-oriented to enhance the rights of Indigenous Peoples. Evidence suggests Indigenous Peoples' undefined tenure rights will negatively impact REDD+ targets.
- Ensuring the consistent participation of indigenous men and women throughout REDD+ processes is imperative, following clear guidelines for Free, Prior, and Informed Consent (FPIC), and with capacity-building efforts for their effective participation.
- Rather than being seen as a tool to discourage negative impacts, REDD+ safeguards must be reframed to recognise, inter alia, the key role of Indigenous Peoples in climate change initiatives and protecting forests.

IF the UNFCCC REDD+ Framework cannot identify and address the drivers of forest loss, fails to recognise and respect the community rights over forest resources and a decentralised community forest governance – all that it will lead to are rights abuses, violation of UNDRIPs, failure to recognise the key role of IPs and LCs in conservation and protection of forests and biodiversity and in climate change initiatives. The carbon benefits, derived out of the REDD + framework in compensating and incentivising a highly centralised and bureaucratic forest management system of sequestration of carbon and increasing carbon sinks through land grab, trampling of the rights of the communities and monoculture plantations will far outweigh the non-carbon benefits. Paying for creating carbon sinks for trading in the future will not mitigate forest loss and neither support and incentivise the traditional forest conservation, protection and restoration practices of the forest communities.

# Climate Finance, Big Banks & Small Farmers

Chetna Joshi

A need of adaptation in the agriculture and allied sectors became more pronounced when it appeared as a priority sector in 90% of INDCs that included adaptation. The issue of ‘Food production and security’ is explicitly mentioned in the preamble of the Paris agreement. Post Paris many new financial facilities/ funding instruments have come up with a focus on agriculture, intending to facilitate nations meet their climate pledges to keep the warming of the world below 2°C. But the same old question remains how much of the new financial resources are going to go to fund the actual solutions able to bring in resilience in agriculture beneficial for the smallholder farming communities?

## International Funding does not reach to the vulnerable smallholders

For poverty reduction and growth, investment is essential in the vulnerable smallholder section of farming community. Worldwide it’s been witnessed that either the financial flow does not reach to this section of the poor countries or the most vulnerable smallholders are not the priority for the funders to build resilience. Analysis of 7,500 EU-funded projects reveals the lack of focus on smallholders and lack of transparency in reporting and very little accountability. Out of the total EU official development assistance for agriculture, only one-fifth has targeted smallholder farmers. The funding has remained biased towards industrial and export crops and countries of strategic interest.<sup>1</sup> A recent

<sup>1</sup> Missing out on small is beautiful; <https://www.oxfam.org/sites/www.oxfam.org/files/bp-eu-policy-smallholder-agriculture-300617-en.pdf> JUNE 2017)

study on farmers of Ethiopia, Ghana, Nigeria, Pakistan, Philippines, and Tanzania shows that the funding to these countries have been significantly low and do not reach to the smallholder farmers. Within the farming community women farmers constitute more than 43% of the farm workers. But there is no such data available that shows that they receive any benefit out of the funding directed to strengthen farming community in the face of climate change.<sup>2</sup> In the absence of legal protection by the state, projects financed by commercial banks and private equity funds from the support of World Bank's private sector arm- International Finance Cooperation (IFC)- have resulted in forced eviction, displacement of the indigenous local community massive deforestation and environmental damage across the world. In Africa alone, 11 projects backed by IFC clients have caused approximately 700,000 hectares of land transfer to the foreign investors.<sup>3</sup> Deutsche Bank, a signatory to the UN Principles of Responsible Investment, was found a major investor in rubber companies in Vietnam which were found behind land grabs, illegal logging and the loss of food supply to the local population in Laos and Cambodia.<sup>4</sup>

The new funding facilities are aligning themselves in some way or the other with the country specific climate pledges they intend to invest in. These facilities are owned by groups of international banks, insurers, agribusinesses and private investors. Their strong hold over these financial facilities and motive to earn profit out of these investments is not going to let smallholders and vulnerable communities get any benefit out of it. In fact, such investment will remain a threat to their local food system, livelihood and existence.

The 'Green Climate Fund' was set up with the intention to make funding directly accessible to the countries so that countries have ownership through devolved decision-making. Even GCF could not escape the grip of the big international banks. So far, it has allotted \$2.2 billion funds to projects and programs but only 7% of

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2 Financing women farmers; The need to increase and redirect agriculture and climate adaptation resources (<https://reliefweb.int/report/world/financing-women-farmers-need-increase-and-redirect-agriculture-and-climate-adaptation>)

3 World Bank Fuels Land Grabs in Africa Through Shadowy Financial Sector Investments Oakland Institute May 1, 2017 <http://www.oaklandinstitute.org> - direct URL: <http://tinyurl.com/l3dz69p>)

4 How to stop European money fuelling land grabbing overseas, Nov. 4, 2016 <https://www.globalwitness.org/en/blog/how-stop-european-money-fuelling-land-grabbing-overseas/>

this amount would remain directly accessible to the national or sub-national developing country institutions. Three international partners: European Bank for Reconstruction and Development (EBRD), United Nations Development Programme and European Investment Bank are managing over half of the allocated GCF funds. EBRD alone is managing one fourth of all the GCF funds. Out of 43 activities funded by GCF so far, 7 activities received half of the allocated funds and it turned out that all these seven activities are managed by international development banks.<sup>5</sup>

The list of private banks accredited by GCF is growing continuously. A few other accredited banks are Deutsche Bank, HSBC, Credit Agricole, The Bank of Tokyo Mitsubishi (BTMU) The Japan International Cooperation Agency (JICA). GCF is mandated to maintain equal balance between funding adaptation and mitigation and the role of the accredited institutions is to help national institutions of the developing countries develop proposals and get funding support from GCF on their behalf. The problem with having banks in GCF system is that they ignore the proposals for adaptation – a requirement of all the poor countries trying to cope up with the climatic changes. Adaptation projects are financed 100% by GCF grants and thus are beneficial for the poor countries. Public institutions and NGOs put more emphasis on adaptation projects. Banks have more interest in mitigation projects which get partial funding from GCF as grant and partial from them as loan. This makes mitigation projects a way for them to earn profit.<sup>6</sup>

## **A glance at a few new financial arrangements focused on agriculture and allied sector**

Indonesia targets to restore 2 million hectares of peatland by 2020, reduce greenhouse gas emissions by 29%-41%, reach full electrification by 2020 and increase the renewable mix from 6% to 23% over the

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5 Big development banks dominate Green Climate Fund, new study finds, September 26, 2017 <https://foe.org/big-development-banks-dominate-green-climate-fund-new-study-finds/>

6 UN climate fund criticised for accrediting growing list of private banks. <http://www.climatechange-news.com/2017/07/10/green-climate-fund-criticised-accrediting-private-banks/>

next 5 years. In order to support the country to achieve these targets and other sustainable development goals, a new ‘Tropical Landscapes Finance Facility (TLFF)’ with a loan fund and a grant fund was announced in October last year. Its official announcement refers it ‘as an innovative vehicle to channel private capital ...to bring long-term finance to projects and companies that stimulate green growth and improve rural livelihoods’.

Key partners of TLFF include BNP Paribas - one of the largest banks in the world, ADM Capital, which will act as fund manager for the loan fund and UN Environment who will manage the secretariat. BNP Paribas is one of the EU-based investors (others are Standard Chartered, HSBC, Deutsche Bank, and Allianz) found responsible for providing finances to a company which drove palm oil expansion in Liberia and found linked to land grab and beatings, threats, and arrests of local communities.

Poor ranchers in the Amazon don’t have upfront capital and land titles- that can fetch them loan to implement sustainable ranching techniques. 90% of Brazil’s recent deforestation and 75% of country-wide greenhouse gas emissions are due to cattle ranching activities. Brazil – the world’s largest beef producer and second largest beef exporter- pledged to reduce emissions by 37% by 2025, mostly through changes in its land use and energy sectors. Ostensibly to support the country in this task a US-Brazil investor group has picked up ‘Climate Smart Cattle Ranching’ as one of the financial instruments to drive funds for climate action. The idea is to ultimately develop a prototype business to increase the supply of deforestation-free beef from the Amazon.<sup>7</sup>

The US-Brazil investor group is assembled by the ‘Global Innovation Lab for Climate Finance’ and included institutions like Caixa – a Brazilian bank, Santander – an Spanish bank, BNDES – Brazilian Development Bank, International Finance Corporation (IFC)- World Bank’s private sector arm, the Climate Investment Funds, FEBRABAN – Brazilian Federation of Banks, the Global Environmental Fund, the Brazilian Ministry of Finance and the United

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7 US-Brazil investor group picks three financial instruments that can drive funds for climate action. February 9, 2017Ref: <https://climatepolicyinitiative.org/press-release/us-brazil-investor-group-picks-three-financial-instruments-can-drive-funds-climate-action/>

States Trade and Development Agency etc. The initiative will establish a “New Company” to provide loans and technical assistance to ranchers.

These initiatives driven by motivations to earn profit from these investments are not looking to foster sustainable development. These may at most give some food security to a few communities but violate the food sovereignty of the majority of the communities. Food sovereignty of a community is based on their unique ecology, social structure, economy and is associated with their culture and rights over their own food and food production. In order to have food sovereignty, the food should be produced using ecologically sound and sustainable methods, based on the need and preferences of the communities rather than the demands of the big corporations and market. But when the agri-businesses jump into the picture, the destruction of the local production system is inevitable as at the heart of an agri-business is to increase yield. Keeping an eye on the global market the production is increased through providing extensive external inputs - now termed as ‘climate smart’- which are fatal for the soil health and natural resources.

In order to apparently develop resilience in African agriculture system - which provides up to 60% of all jobs -to external shock and protect the livelihood of the communities, the World Bank’s Global Index Insurance Facility (GIIF) and African Reinsurance Corporation (Africa Re) have joined hands to initiate a new risk sharing facility to lower premiums for insured farmers and encourage local companies to create affordable insurance products.<sup>8</sup> the supporters of the Global Index Insurance Facility (GIIF) are- EC; the African, Caribbean and Pacific (ACP) Group of States; Governments of the Netherlands and Japan and the facility is a part of the World Bank Group’s Finance & Markets Global Practice. GIIF’s aim is to develop and grow local markets for indexed/ catastrophic insurance in the developing countries and provide access to finance to micro-entrepreneurs, microfinance institutions and smallholder farmers.

A financial safety net such as index-based insurance may be important for the farmers initially, but it also does not provide solution

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8 A New Risk Sharing Facility to Lower Premiums for Africa’s Farmers. February 14, 2017 <http://www.worldbank.org/en/news/press-release/2017/02/14/a-new-risk-sharing-facility-to-lower-premiums-for-africas-farmers>

of the crisis marginalized and smallholder farmers are facing. In fact, it makes farmers less cautious about the resilience. Farmer's start relying more and more to insurance schemes. It pushes them towards adopting unsustainable farming techniques. Index-based insurance encourages farmers to buy chemical fertilizers and seeds, leave diversified farming practices essential to build climate resilience and opt monocropping. It's widely observed that the insured farmers, as compared to the uninsured farmers, would plant riskier less resilient sensitive-to-weather crops.<sup>9</sup> Such crops are profitable only in favorable conditions but the scheme makes the smallholders a client of the corporate agribusinesses and insurer who would reap the maximum monetary benefit.

The list of the solutions where funding is being directed to build agriculture resilience but most likely the beneficiary is not going to be the farmers is long. IFAD is going to provide US\$43 million to Viet Nam as loan towards infrastructure development in the name of resilience building in the agriculture sector.<sup>10</sup> The funds will go to infrastructure development such as rural roads and to increase the access of the farmers to finance, business and technical training. The much needed agriculture resilience building through developing and restoring sustainable agriculture system again remains out of the sight.

Creating market for agriculture carbon is another programme, funded by the nexus of international banks and agribusinesses that has little to do with resilience building in agriculture. World Bank is funding one such project through its BioCarbon Fund and it's tremendous enthusiasm over this indicates that they are going to promote it extensively in near future. The French Development Agency and the Syngenta Foundation for Sustainable Agriculture – a Not-for-profit organization established by Syngenta - a global Swiss agribusiness that produces agrochemicals and seeds are the partners of World Bank in this endeavor.

The first much talked about project funded by The BioCarbon

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9 Protecting Farmers from Weather-Based Risk <https://www.povertyactionlab.org/policy-lessons/agriculture/protecting-farmers-weather-based-risk>

10 IFAD International Fund for Agricultural Develop: to provide US\$43 million to Viet Nam to raise rural incomes and increase resilience to climate change. <http://www.4-traders.com/news/IFAD-International-Fund-for-Agricultural-Develop-to-provide-US-43-million-to-Viet-Nam-to-raise-rur-24198328/>

Fund is underway in Kenya since 2010.<sup>11</sup> Even the implementing NGO partner is not local; it's Swedish NGO 'Vi Agroforestry'. A press release on January 21, 2014 announced that the changed agricultural land management practices applied for sequestering carbon in soil under this project led to a reduction of 24,788 metric tons of carbon dioxide. The project claimed to have issued its first carbon credits under the Verified Carbon Standard (VCS). There are 60,000 farmers involved in this project spread over 45,000 hectares. The project which is expected to be completed by December 2017, focuses on hybrid Maize and agrochemicals, supplied by Syngenta. The agriculture system is said to have the capacity to bring in resilience, is sustainable & climate friendly and can increase the yields by up to 15-20%.

Maize is a staple in the region. The project pushes farmers to move from their native varieties, to hybrid maize and increase the inputs. Clearly profitable for Syngenta and other hybrid seed sellers, this highly corporate controlled approach to agriculture is bound to make small-scale farmers dependent on heavy inputs and forces them to even harvest with a focus on carbon saving. This clearly is a yet another attempt to monopolize agriculture by promoting practices with no credentials on sustainability and put additional pressure of mitigation on the poor and marginal farmers.

## End Note

Global Witness data revealed that in 2015 more than three people were murdered a week defending their land, forests and waterways from theft and destructive industries. Yet the same model continues. The solutions being offered to tackle the problems of unsustainable farming and smallholder farmers are no solution at all. Solutions that eye agriculture as pure business opportunity are bringing in more destructive farming. They are just opposite to the demands of the community level organizations and farmers group for promising farmers' knowledge based localized, low-input, agro ecological food systems essential for building resilience. At this point in time the promotion of such agro-system seems a far cry.

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11 nya Agricultural Carbon Project <http://www.biocarbonfund.org/node/82>

# **Policy Brief on SDG Goal 2**

## **(Eradicate Hunger, Ensure Nutrition, Sustainable Agriculture and Food Security, and Enhance Farmers Income)**

*“To the Hungry, God is bread; this God should prevail in every house and hut in the country”*  
- Mahatma Gandhi

### **Abstract**

The current paper looks at SDG 2 and its potential to eradicate hunger and malnutrition in India and globally. The paper argues that the SDG2 and current approaches towards reducing hunger and malnutrition is flawed as it is not based on current realities. The paper explains that the framing of the SDG2 is highly restrictive and looks at the problem essentially in the rural context, and defines it as one of food scarcity, which is problematic. The paper also argues that unless rapid urbanization of hunger and increasing disconnect between food and calorific requirement is taken into consideration, it might be impossible to achieve SDG2. The paper also looks into issues of sustainability in agriculture and doubling farmers’ income (in Indian context) which are important aspects of the goals. Finally some policy and programmatic recommendations are suggested which the author think may be helpful in overcoming the crisis.

### **Introduction**

193 countries adopted the sustainable development goals (SDGs) in September 2015. SDGs are a set of 17 goals emerging out of intergovernmental negotiations of over two and half years, to integrate

three pillars of development, economic, social and environmental. While the SDGs continue to pursue the unfinished agenda of the MDGs; it also goes beyond that mandating that sustainability is an equally important dimension of growth for all nations, communities and peoples, with the intention to leave no one behind. While the global communities convergence on the agenda 2030 (SDGs are popularly known as the agenda 2030, as most of the goals have to be achieved in the next 15 years till 2030), the critics have also pointed out that the SDGs remain a highly compromised agenda and doubt its capacity to bring the transformational change that is required to make growth sustainable and inclusive and protect environment. While there are several and huge estimates of the financial requirements; lack of finances remain a sore point in achieving sustainable development goals.

The SDG framework is universal in the sense that all nations have to implement all the goals, the countries have the flexibility to choose indicators to suit their political, economic and social conditions; bringing in the element of differentiation between the countries. All the countries have reportedly started preparing for implementation of the SDGs, which became operational from 1st January, 2016. In the UN High Level Political Forum on the SDGs, which is tasked by the UN to oversee the implementation of the SDGs, periodical review and share lessons among the countries, 25 countries made a Voluntary National Review (VNR) of the SDGs implementation. In 2017, 44 countries including India have committed to do a VNR.

## **India and the SDGs**

India has committed to implement the SDGs in line with the global spirit to make growth sustainable and inclusive. The Prime Minister of India, speaking the SDGs Summit in the UN in September, 2015 said “Today, much of India’s development agenda is mirrored in the Sustainable Development Goals. Since Independence, we have pursued the dream of eliminating poverty from India. We have chosen the path of removing poverty by empowering the poor.” India has notified NITI AYOOG as nodal agency for the implementation of the SDGs, has asked

the states to prepare action plans and has also embarked upon exercise to develop national indicators for the 17 goals, besides undertaking consultations on specific goals.

## **GOAL 2:**

### **End hunger, achieve food security and improved nutrition and promote sustainable agriculture**

- 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round
- 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons
- 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment
- 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality
- 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed

- 2.a Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries
- 2.b Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
- 2.c Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

The goal 2 talks about ending hunger and all forms of malnutrition, double agricultural productivity and incomes of small farmers including through ensuring their access to land and other productive assets, ensure sustainable food production systems and maintain genetic diversity.

## **Facts and figures**

- Around 800 million people in the world, or about one in nine, suffer from hunger
- The number of hungry has fallen by 167 million over the past decade and by 216 million since 1990–92
- About one in four people living in sub-Saharan Africa suffers from chronic hunger, but the region with the largest number of undernourished is Southern Asia (281 million)
- The world has the capacity to produce enough food to feed everyone adequately
- Agricultural production will have to increase by an estimated 50 percent by 2050 to meet projected demands for food and feed from a world population projected to rise to over nine billion people by 2050
- More than one in four children under the age of five are stunted (too

short for their age) due to chronic under nutrition

- More than two billion people suffer from one or more micronutrient deficiencies or “hidden hunger”
- About 1.9 billion people are overweight, of whom 600 million are obese.
- World agricultural production has grown on average between 2 and 4 percent per year over the last 50 years, while the cultivated area (permanent cropland and arable land) has grown by only 1 percent annually
- The world land area dedicated to agriculture is 38.5 percent
- Smallholder farms (i.e. less than 2 hectares) represent over 90 percent of the world’s 570 million farms, producing most of the world’s food
- An estimated 75 percent of crop genetic diversity has been lost since the 1900s; 17 percent of the world’s livestock breeds are classified as being at risk of extinction
- Just 3 crop species (wheat, rice and maize) represent virtually half of the average daily calories consumed by the world population; and five animal species (cattle, sheep, goats, pigs, chicken) provide 31 percent of average daily protein consumed

Source: FAO, 2017

Goal 2 has strong interlinkages with many other goals and delivering on Goal 2 will require robust action on those goals too, and positive action will also strengthen possibilities of delivering on those goals. Hunger and nutrition is directly related to eradicating poverty (Goal1), health (Goal 3), Gender (G5), water and sanitation (G6), energy (G7), decent work and employment (G8), inequality (G10), SCP (G12), climate action (G13), life below land (G14), life over land (G15), peaceful and inclusive societies (G16) and International cooperation and finances (G17). A clear intention to deliver on goal 2 will mean to ensure that other linked goals receive equal focus.

## **Concerns with regard to Goal 2**

Goal 2 goes beyond food production and consumption and looks into important dimensions of the food and nutrition including supply

chains and emphasizes social groups vulnerable to hunger. It also talks about sustainable agriculture and need for conservation of genetic biodiversity of plants and animals, and it also places emphasis on making land and other productive resources available to small farmers and food producers. However, it fails short of recognizing food as fundamental human right. It also fails to identify structural reasons for hunger and under nutrition in view of the fact that we produce enough food to feed all mouth on this globe. A clear focus on identifying barriers and addressing appropriate, equitable and rights based access to food would have a better chance of attacking the structural reasons. The goal fails to identify concentration of land, alienation and land grabbing, which are main hurdles in making land available for food production. It should also reduce agriculture land use for meat production, and bio-fuel production in the light of their negative impact. Reducing wasteful use of water, chemicals, energy and subsidies in developed countries could also have been one of the priorities for the goal. The primacy of adopting and promoting agro-ecological practices, which is the most important step in sustaining food production, has been undermined. The main reason of food price hikes in recent years has been the speculation of food derivatives and future markets, goal 2 would have better put a valid critique on that rather than trying to put safeguards on derivative and future markets. However, despite the shortcomings, the SDGs framework allows us an opportunity to engage with the state and ask accountability questions. Now it's largely up to the countries to make this framework work better for people in the line of hunger.

## **Status of India on Goal 2**

In the circumstances, the current paper attempts to look into three important dimensions of the goal 2, hunger and malnutrition, sustainable agriculture and food production, and farmer's income.

### **Hunger and malnutrition in India**

India is ranked 55 out of 71 countries surveyed by the Global Hunger Index.<sup>1</sup> India has over 194 million (or 15% of global hunger population)

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1 Global Hunger Index, 2015

hungry people, achieving goal 2 will be formidable challenge for India.<sup>2</sup> 51% women between 15-59 years and 44% children are underweight.<sup>3</sup> 3000 children die every day from hunger, malnutrition, and poor diet related deaths every day. Despite the fact that India is a food surplus country, 40% of fruits and vegetables and 20% food grains are wasted due to poor storage and inefficient supply chains.

India's nutrition profile has been aptly called a silent time bomb. 39% of children below 5 years are stunted (low height for age), 15% are wasted (low weight for height), 29% are underweight (low weight for age), 2% are overweight (above normal weight for height) and nearly 70% of children aged between 6 and 59 months are anemic (hemoglobin deficiency).<sup>4</sup>

An analysis of NFHS 4, reveals that all the states have managed to reduce percentage of children who are stunted. 13 states have done significant progress by reducing stunting among children below 5 by 10 percentage points, Maharashtra and WB lead by reducing stunting by 12 percentage points. Urban Rural divide remains a cause of concern, with more children in rural areas under stunting as more than 10 states have registered more than 10% stunting in rural areas as compared to the urban area. However, still stunting remains a major concern with many states reporting unacceptably high levels of stunting among children below 5 years of age. More than 6 states have more than 40% children under 5 who are stunted (Bihar, UP, Dadra Nagar Haveli, Jharkhand, MP and Meghalaya). 17 states have more than 1/3rd children below 5 who are stunted. Bihar tops the list with 48.5% of children under five stunted, followed by UP (46.3%) and Goa having least (20.1%) population of children facing stunting.

As far as wasting is concerned, Jharkhand and Dadra Nagar Haveli top the list with 29% and 27.6% children respectively. 13 states have more than 1/5th children below 5 who are wasted. 14 states have shown increasing wasting (or stagnation) as compared to the NFHS 3. Maharashtra has shown maximum backsliding (by more than 10 percentage points). Almost all the states (25) show urban bias, with

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2 Global Hunger Report, 2015, FAO

3 NFHS 4

4 Achieving SDG 2: India needs comprehensive approach, Rumi Aijaz, ORF

more children in rural areas under wasting, the difference being stark in Dadra Nagar Haveli. 9 states have also shown more wasting in urban areas, with Goa showing more wasting in urban areas by more than 15 percentage points.

Underweight women are also a cause of major concern as far as nutrition is concerned, and shows more than lack of nutritious food for women. Almost half of the states have 1/5th women underweight. Jharkhand with 31.5% and Bihar with 30.5% top the list, closely followed by DNH with 28.9%. Although almost all the states have managed to reduce the number of underweight women, many states have done significant progress. WB and Tripura have shown maximum progress by reducing the number by more than 18 percentage points, followed by CG, Bihar, Karnataka and Odisha who have reduced underweight women by more than 15% points. Vast urban rural difference is seen except in the states of Arunachal Pradesh, Daman and Diu, Mizoram, Nagaland, Puducherry and Sikkim where underweight women are more in urban areas than in rural areas. Huge difference is seen in Gujarat and Maharashtra where underweight women in rural areas are significantly higher by 16% and 14% respectively, followed by Dadra Nagar Haveli (13%) and MP (11%).

Underweight women are a concern dwarfed by anemic women. With regard to anemia among all women (15-49 years), DNH and Chandigarh tops the list with 79.5% and 75.9% anemic women respectively. 6 other states have more than 60% anemic women (Andaman & Nicobar, AP, Bihar, Haryana, Jharkhand and WB). At least 10 states show stagnation or increase in the number of anemic women including NCT Delhi, Haryana, HP, Kerala, Lakshadweep, Meghalaya, Odisha, Punjab, Puducherry, Telengana & UP. At least 8 states have fallen back in reducing the number of anemic women by around 10 percentage points (NCT Delhi, HP, Lakshadweep, Meghalaya and Punjab). Punjab tops the list of backsliding states where anemia among women has increased by 19 percentage points.

## **Food and nutrition Policy Framework**

India adopted a National Nutrition Policy in 1993, and set up National Nutrition Mission at the national and state levels, monitored by the

Ministry of Women and Child Development. However, it unfortunately could not meet the rising challenges of under nutrition in the country. Now Niti Ayog is mulling over another National Policy on Nutrition. In comparison, the country has a far more visible and outcome oriented policy framework on food security, which also seeks to improve calorific nutrition outcomes, besides addressing access to food.

The national food policy framework is built around a complex web of several programmes including the PDS, ICDS, midday meal scheme, national social access programme, maternity benefits, and MG national employment guarantee programme. Cash transfers etc. However, the most important of them is the National Food Security Act, 2013. The National Food Security Act, also called Right to food Act aimed at providing subsidized food to 2/3rd of India's population. The estimated cost of the implementation of the Act has been \$ 22 billion, almost 1.5% of the GDP. The Act aimed to cover people eligible under the Act, below poverty line population, poorest population, children, pregnant and lactating mothers. It also aimed to reform the PDS by identifying errors of inclusion and exclusion, plugging corruption and digitizing the records and PDS operations.

A performance audit of the NFSA conducted by the CAG of India, covering the period from July 2013 to March 2015, declared that as of October, 2015, 18 States/UTs implemented the NFSA by covering less than half of the intended beneficiaries ( 41.69 crore beneficiaries against the total 81.34 crore beneficiaries to be covered in all 36 states/UTs).<sup>5</sup> The report also stated that, so far only 49 per cent of the eligible beneficiaries have been identified and 51 per cent beneficiaries are yet to be identified in all the States/UTs, most of the implementing States did not identify the AAY and priority household's beneficiaries as required by the NFSA but used the old database of beneficiaries for extending the benefits, computerization of TPDS operations was not completed in the selected States/UTs and were at different stages of implementation, and that six out of nine selected States/UTs have put in place the grievance redressal mechanism however these were not fully functional. Vigilance committees at all the four levels were not found to

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5 Press Release, CAG Compliance Audit Report on Preparedness of the Implementation of the NFSA, Report No.54 of 2015, dated 29th April, 2016.

be in existence in any of the selected States\UTs. The CAG has found similar shortfalls in the ICDS in an audit conducted in 2012<sup>6</sup> and an evaluation of the MDM conducted in 2009.<sup>7</sup>

### **Judicial intervention on the right to food**

India's food security framework was strengthened substantially due to the intervention of the Supreme Court in the PIL PUCL Vs. Union of India and Others, 2001 popularly known as the right to food case, wherein it was cited that several hunger deaths have taken place in Rajasthan despite the Union of India had sufficient food reserve, and was argued that better monitoring mechanism was required to facilitate and monitor peoples access to food. The Supreme Court created an exceptional mechanism, opening a window for continued access to the Supreme Court, appointing two Commissioners to help the court monitor right to food in India. The Commissioners regularly updated the apex court on the status and performance of several programme and schemes, on which the Court issued instructions to the relevant government officials. However, after 17 years, the Supreme Court closed this case unceremoniously on 10th February, 2017. "In view of the passage of the National Food Security Act, 2013, nothing further survives in this petition. In case the petitioner has any grievance with regard to the implementation or otherwise of the National Food Security act, 2013, he may file a fresh petition," the Court said while disposing off the case.<sup>8</sup> This case is considered a landmark judicial intervention in the history of the struggle for the food security.

While India faces significant hurdle to overcome traditional triple under nutrition challenges of calorific deficiency, micronutrient deficiency, and obesity and overweight. Newer challenges are also emerging.. Significant among those is disconnect between poverty

6 Report No. 22 of 2012 -13 Performance Audit of Integrated Child Development Services ICDS Scheme of Union Government, Ministry of Women and Child Development, CAG, 2013 at <http://www.cag.gov.in/content/report-no-22-2012-13-performance-audit-integrated-child-development-services-icds-scheme>

7 Audit Evaluation of the Mid-Day Meal Scheme, CAG, 2009, at [http://www.cag.gov.in/sites/default/files/cag\\_pdf/Compendium\\_Performance\\_Audit\\_Reviews\\_Evaluation\\_MidDay\\_Meal\\_Scheme.pdf](http://www.cag.gov.in/sites/default/files/cag_pdf/Compendium_Performance_Audit_Reviews_Evaluation_MidDay_Meal_Scheme.pdf)

8 What are the lessons learned from the right to food case, Apurva Vishwanath, 20th March, 2017, Livemint, at <http://www.livemint.com/Politics/IEBWhfvkvPCaQW6xkyTjO/What-are-the-lessons-learnt-from-the-Right-to-Food-case.html>

and malnutrition (many states have shown increasing trends of under nutrition even among the better of communities), and increasing trends of overweight children. India's food security programme especially food stockpiling programme for implementing PDS has also been challenged under the trade rules of the WTO.<sup>9</sup>

## Food production and sustainable agriculture

Food grains production in India has made rapid strides rising from dismal 51 MT in 1950s to the record production of 265 MT in 2014-15. It declined in face of two consecutive drought years. However, it has failed to keep pace with overall economic growth largely limited to maximum 3%-5% as against the overall growth in economy which grew at 7%-9% pa during the last decade. The share of agriculture and allied sectors in the total GDP has declined to 14% in 2013-14. Removing contribution from forests and fisheries, the share of agricultural comes down to 12% in the total GDP.<sup>10</sup> However, around 50% of the population is still dependent on agriculture for its livelihood. Madhya Pradesh, Odisha, Bihar and Chhattisgarh are the major drivers of agricultural growth.<sup>11</sup> Agricultural production has diversified over the years with horticulture and livestock sectors doing much better.<sup>12</sup> Livestock, dairy and fishery have also shown and sustained tremendous growth potential.<sup>13</sup>

## India as agricultural powerhouse

According to the World fact book of the CIA in 2014, the global agricultural output was \$ 4771 b. but a full 42% of this output comes from only 6 countries. China (\$ 1005 b) leads the pack followed by India (\$367 b). USA (\$279 b) is the third, followed by Brazil (\$ 130 b), Nigeria (\$122 b) and Indonesia (\$121 b). China and India also account for close to 30% of the total global output. India ranks 11th and 12th

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10 State of Indian Agriculture 2015-16, DAC&FW, GOI

11 12th FYP document, Planning Commission

12 While growth in food grain production has been around 3%, horticulture has registered sustained growth of 7%

13 India is the largest producer of milk in the world. India's is second biggest producer of fruits and vegetables after china, as is India in production of wheat and rice.

globally in services and manufacturing respectively, however, it is second in the agricultural sector after China.<sup>14</sup> In the 3 decades from 1970 to 2000 India's agricultural GDP grew from \$ 25 b to \$ 101 b. However, in the next 14 years it leaped from \$ 101 b to \$ 367 b. This tremendous increase is mainly due to rise in the dairy, horticulture and inland fisheries. These three account for more than 60% of the agricultural GDP of India. UP, undivided Andhra Pradesh and Maharashtra make up the three top spots, relegating grain centers like Punjab and Haryana to 10th and 12th rank respectively. India ranks 19th in merchandise exports but 6th in agricultural export (WTO, 2014). However, India's share in total global agricultural export (\$176 b) still remains small at 2.5% despite India growing maximum variety of edible oils; it is the largest importer with 14 MT worth \$ 10 b per year. The second largest agricultural commodity that India imports is pulses.

While India's agricultural growth has been much celebrated; regional disparities remain. The government also acknowledges that agricultural sector currently faces a dilemma. While it has made large strides in achieving the agricultural development goals, it is still being challenged by a formidable agrarian crisis.<sup>15</sup> The policymakers acknowledge "pressures emanating from natural resources constraints, increasing fragmentation of holdings, frequent climatic variations, rising input costs and post-harvest losses, and agrarian crisis as an interplay of all these factors pose an enormous challenge to sustaining agricultural growth.<sup>16</sup> However, there is very little recognition of structural causes and therefore, lesser efforts to address these. Some of the structural issues are discussed below

### **Agricultural performance and sustainability**

The green revolution has been the country's best advertised story. The sharp rise in the food grains production during green revolution in the 1970s enabled the country to achieve self-sufficiency in the food production. Agricultural intensification in the 1970s and 1980s saw an increased demand for rural labour that raised rural wages and together

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14 China has less area under agricultural cultivation, consumes less fertilizer and produces more. Total food grains production in China was 571 MT in 2012 as compared to 250 MT of India.

15 State of Indian Agriculture 2015-16, DAC&FW, GOI

16 *ibid*

with declining food prices, reduced rural poverty.<sup>17</sup>

However, the green revolution outcomes have been over emphasized, as some critics say. The wonder year of the start of the green revolution 1968 did raise the production of food grains from 74.2 MT in the previous year to 95 MT. the increase of 20.9 MT was contributed by rice (7.2 MT), coarse cereals including gram (7.1 MT), and wheat (5.2 MT). In fact the good weather the world over had made it a bumper year of production. While increase in wheat production may have some contribution of Norma Borlaug's magic seeds but rest of the production came from the same indigenous seeds.<sup>18</sup>

The green revolution definitely led to monoculture<sup>19</sup>, the area under irrigation, use of fertilizers and pesticide, and attendant environmental degradation and sharply reduced the area under coarse grains. The green revolution only provided more wheat; the production grew from 20 MT in 1970s, 32 MT in 1980s and 90 MT in 2016. High yielding variety of rice was a later phenomenon (late 1970s) which came from International Rice Research Institute, Philippines. Policy measures during the green revolution have their own contribution in increasing area under wheat and later paddy. As farmers in irrigated areas realized that government was giving input subsidies including seeds to grow wheat and was also buying back on a predetermined profitable price, they fell over each other especially in north India to grow wheat and rice. From a high of 55.6 M ha in 1968, coarse cereals and gram lost acreage steadily, falling to 28 M ha in 2006. During the green revolution water consumption in agriculture rose sharply as the net irrigated area increased from 31.1 M ha between 1970-2000 while the area irrigated more than once per year increased from 7.09 m ha to 20.46 m ha during the same period. Ground water, one of the India's main sources of irrigation is also being depleted rapidly. The no. of dark blocks (taluks or mandals), where extraction is more than 85% of the availability increased from 253 to 428 out of over 5700 blocks between 1984-1999 (GOI, 2002).<sup>20</sup> Fertilizer application rose more than fivefold

17 India: Issues and Priorities for agriculture, WB, May 17, 2012.

18 Putting wheat in its place, or why the green revolution wasn't quite what its made out to be, Richa Kumar, 2016, IIT Delhi

19 ibid

20 India-Policies for sustainable agriculture, TNAU

between 1970 and 2002 to 17360 thousand tonnes with significant imbalance of nutrients (N, P & K). Pesticide consumption almost doubled from 24.32 MT in 1970 to 46.2 MT in 2000.<sup>21</sup> However, agricultural growth in the 1990s and 2000s slowed down averaging about 3.5% per annum, and cereal yields have increased by only 1.4% per annum in the 2000s. The slowdown in the growth is a major cause of concern.<sup>22</sup> The major reason for falling productivity besides, water constraint is land degradation. By the early 1980s approximately 53% of India's geographical area had been considered degraded (GOI, 2001a). Soil erosion, through water and wind, is the major contributor to land degradation (over 71%) NRSA data suggest that 15% of India's total geographical area was comprised of cultivable wasteland (NRSA, 200). One third of this land was degraded by human activity; nearly half was degraded by combination of human and natural causes (NRSA 2000).<sup>23</sup>

Punjab, Haryana and western UP, the heartland of green revolution have borne the maximum brunt of the revolution. Hybrid seed varieties, extensive irrigation systems (mainly through submersible pumps), and the heavy handed use of chemical fertilizers transformed Punjab into the agricultural power horse. It comprises only 1.5% of India's territory, but it produces 60% of country's wheat and 45% of its rice.<sup>24</sup> However, this has not been without its environmental and human costs. Punjab has seen maximum rise in cancer cases, so much so that a train running from Punjab to a city in Rajasthan, known for its cancer hospital is named 'cancer train'.<sup>25</sup> Water table in Punjab and Haryana sinks as much as 100 feet every year. Ashok Gulati, former chair of the CACP, says to produce 1 kg of rice in Punjab, the farmers have to consume approximately 5000 litres of water, while it is 3000 in

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21 India-Policies for sustainable agriculture, TNAU

22 India: Issues and Priorities for agriculture, WB, May 17, 2012

23 India-Policies for sustainable agriculture, TNAU

24 Green Revolution Fallout Plagues India's Punjab Region. Sonia Schmanski, 21st Aug, 2008, [www.newsecuritybeat.org](http://www.newsecuritybeat.org)

25 WHO found that in developing countries, over 3 million agricultural workers are annually subjected to severe poisoning for failing to take adequate precaution while spraying insecticide. As many as 59% of deaths attributable to pesticide use reported from developed countries, even though the latter account only for one-fourth of world wide consumption of these chemicals. Green Revolution that has resulted in chaos, Sandhya Jain, 17th May, 2016, [www.dailypioneer.com](http://www.dailypioneer.com)

West Bengal and Assam.<sup>26</sup>

The trajectory of Indian agriculture and associated environmental problems has brought about the understanding that agricultural growth and productivity will have to be consistent with environmental sustainability.<sup>27</sup> However, very little seems to be done on the ground consistent with these theoretical emphases.

Small holdings of small and marginal farmers have been repeatedly cited by the policymakers as biggest impediment in raising productivity. This is needs to be reviewed whether the small farmers have failed agriculture or is it the agricultural policies that have failed small farmers. The Indian Rural development Report 2012-13 recognized that “small farms have proven to be more efficient than large ones in using land and resources, especially in labour intensive crops or tending livestock, but the holdings are often too small to support a family. Crucially small farmers suffer serious disadvantages in marketing and distribution. Their smaller outputs, fragmented landholdings and often distant locations from major markets deprive small farmers of access to modern storage facilities for perishable items and distribution networks.<sup>28</sup> Chand et al (2011) said “smallholders do not lag behind other farm size categories in adoption of technologies and use of fertilizer and irrigation. Moreover, small holders make better use of inputs as revealed by the lower fertilizer imbalance index. Crop intensity, which is the main source of growth in agriculture in India, was found to be highest in marginal holdings and it declined with the increase in farm size. Advances in technology and the scale factor did not dilute the superior performance of lower size holdings. Any move towards increasing farm size on considerations like non-viability of smallholders will adversely affect productivity and growth of India agriculture.”<sup>29</sup> However, he also underlines, “while the small farms in

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26 Green Revolution in Haryana: facing fallout, Mohd. Mustaqim, 12th April, 2016, [www.ruralmarketing.in](http://www.ruralmarketing.in)

27 National Agricultural Policy, 2000 and 10th FYP onwards are replete with references of management and conservation of natural resources, land, water and genetic endowment to promote sustainable development of agriculture. FYPs have put emphasis on rainwater harvesting, controlling groundwater exploitation, watershed development, addressing imbalanced use of NPK, and address soil organic content, and identifying organic farming as a thrust area etc.

28 State of Indian Agriculture 2015-16, DAC&FW, GOI

29 EPW, June 2011

India is superior in terms of agricultural performance, it is weak in terms of generating adequate income and sustaining livelihood. Tiny holdings below 0.8 ha do not generate enough income to keep a farm family out of poverty despite high productivity. Nearly three fourths of small farmers in India fall under poverty if they do not get income from non-farm sources.<sup>30</sup> On the pretext of non-viability of small farming, government has suggested small farmers to leave agriculture and pool their lands by leasing.<sup>31</sup> However, the plan does not offer any alternative employment to farmers, 85% of whom have a holding of less than 2 ha. This will have grave consequences on farmers as they lose their land, identity and sovereignty swelling the ranks of informal labor in the cities, which in turn will have serious impact on their and their dependents food security and nutrition. This is despite the fact that more 2000 farmers are leaving agriculture every day and more than 76% want to quit agriculture.<sup>32</sup>

The policymakers supported by mainstream economists have been consistently driven by the maximization of production approach, rather than minimizing risks. They have steadfastly maintained that rise in productivity, efficiency in irrigation, increased adoption of mechanization and technology including GM technology will sustain India's food production and will increase farmers' income. However, this premise also wears thin when one looks at agriculture in Punjab, which is increasingly in news now due to rising suicide of farmers. The assured irrigated area in Punjab is 98% as compared to 11.4%, 2.0% and 35% in the USA, UK and Japan respectively. The per hectare yield for wheat (4500kg/ha) is equal to that in the USA and paddy (6000kg/ha) is equal to that in China. As regards mechanization, number of tractors/1000 ha in Punjab is 122 far above of tractor concentration in the US (22), UK (76) or Germany (65). Fertilizer use is 449kg/ha as compared to 103 kg in the US, 208kg in the UK, and 278 kg in Japan. Maximum productivity in cereal crops (wheat, rice, maize) at

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30 Farm size and productivity: understanding the strengths of smallholders and improving their livelihoods, Ramesh Chand, P A Lakshmi Prasanna, Aruna Singh, EPW, June 25, 2011

31 12 FYP document suggests farmers to leave agriculture and look for other employment opportunities. It is also suggested that consolidated land holdings will be given to farmers producer organizations

32 Over 2000 fewer farmers every day, P Sainath, the Hindu, May 02, 2013, <http://www.thehindu.com/opinion/columns/sainath/over-2000-fewer-farmers-every-day/article4674190.ece>

7633 kg/ha is above that of the US (7238kg), UK (7008 kg), France (7460 kg) and Japan (5920 kg).<sup>33</sup> However, these figures fail to explain why Punjab has second highest rate of suicides after Maharashtra.<sup>34</sup> This calls for a compelling and comprehensive review on why farmers languish while agriculture flourishes in India.

## **Farmers' income**

A number of studies have emphasized that the smallholder agriculture is non-remunerative with inputs costs increasingly and income from farming reducing.<sup>35</sup> Narayanamoorthy (2006) analysed the level of farm income using SAS data across the major states and found that the annual average income from crop cultivation for the country as a whole was only Rs. 11,628 per household. That is, the per day income of the farmers' household was just about Rs. 32 during 2002-03, which was much lower than the average agricultural wage rate that prevailed at that time in the country. Chand et al used a different methodology to compute farmers' income during 1983 to 2011-12. They concluded that per cultivator income increased from Rs. 16,103 to Rs. 42,781 during this period. Interestingly, the annual growth rate of per cultivator farm income increased at a rate of 7.29 per cent during 2004-05 to 2011-12, which is more or less equivalent to the overall growth of the economy during this period.<sup>36</sup>

A Narayanamoorthy (2016) calculated farm income from actual data on farm income fairly comparable for two time points namely 2002-03 and 2012-13 from SAS published by NSSO (2005; 2014), which reveals the reality about the state of farm income. It concluded that the annual income per farm household from cultivation has increased from Rs. 3,645 in 2002-03 to Rs. 5,502 (at constant prices of 1986-87) in 2012-13, an increase of about 3.81 percent per annum. But, the increase in income from crop cultivation was not very significant as

33 Devinder Sharma, 2016

34 449 farmers committed suicide in 2015

35 Despite the fact that 2/3rds of the population was dependent on agriculture farm income did not receive much attention in the policy circle till late 1990s. The two sources of data for farm income are generated by Situation Assessment Survey (SAS), published by NSSO, and Cost of Cultivation Study (CCS) brought up by CACP. While CCS data provides crop wise cost and income details per hectare, SAS data provides annual income from crop cultivation per household.

36 Farm Income in India; Myths and Realities, A Narayanmoorthy, 2016

compared to the income realized through farming of animals.<sup>37</sup>

The government has declared in the budget speech of 2017 that it is committed to double farmer's income in next 15 years.<sup>38</sup> Ashok Gulati, former chair of the CACP says that doubling farmers' income in 15 years will be a "miracle of miracles," as it would imply a compound growth rate of 12% per annum.<sup>39</sup> One analysis, says that after adjusting rising costs an Indian farmer's income effectively rose by only 5% pa over the decade (2003-2013).<sup>40</sup>

Niti Ayog has brought out a vision document on sustainable development recently (India long term vision).<sup>41</sup> It argues that doubling farmers incomes can be pursued through a variety of measures including remunerative prices for farmers (marketing reforms, & MSP Reforms), raising productivity (irrigation, seeds and fertilizers, new technology, shifting to high value commodities, horticulture, animal husbandry, blue economy, forestry etc.) and agricultural land policy: Leasing and records, and relief measures.

There is much emphasis on raising productivity for raising farmer's income. It is often believed that the increased productivity would help the farmers to reap higher profit. An Occasional paper by NITI Aayog (2015) on "Raising Agricultural Productivity and Making Farming Remunerative for Farmers" has also stressed this point elaborately to have more income from farming. Narayanmoorthy (2016) showed that the results generated from 1971-72 to 2013-14 prove that the profitability of high productivity states (HPS) is not significantly different from that of low productivity states (LPS) in most crops. The reason is obvious. The cost of cultivation of HPS states in all the crops is not only substantially higher than that of the crops cultivated in LPS states but also increased at faster rate.<sup>42</sup> The farmers at large would not benefit through increased productivity unless efforts are made simultaneously to control the cost of cultivation and improve the procurement arrangements through state agencies,

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37 *ibid*

38 [indiabudget.nic.in/ub2017-18/bs/bs.docx](http://indiabudget.nic.in/ub2017-18/bs/bs.docx)

39 What is the future of agriculture in India, Vishwajeet Chaudhary and Gursharan Singh, 19th July, 2016, [www.thewire.in](http://www.thewire.in)

40 *ibid*

41 India long term vision, chapter 5, Agriculture: Doubling farmers' Incomes, Niti Ayog, May, 2017.

42 Farm Income in India; Myths and Realities, A Narayanmoorthy, 2016

which are missing in the listed strategies, he concludes. A similar myth like increasing irrigation was also been busted by Narayanmoorthy.<sup>43</sup> However, he noted significant increase in come by adoption of Drip irrigation technology and SRI. Low farm incomes have resulted in high indebtedness among farmers.

In fact, the income realized from cultivation by the farmer household at current prices works out to be only about Rs. 101 per day during 2012-13.

### **Farmer's indebtedness**

A recent study compared farmers' indebtedness from SAS data between 59th round and 70th round of the NSSO surveys.<sup>44</sup> After 59th round 48.6% farmers were indebted, which increased to 51.9% farmers after the 70th round.<sup>45</sup> During the 59th round most indebted farmers were in Andhra Pradesh (82%), followed by Tamil Nadu (74%), Punjab (65.4%), and Kerala (64%). After 70th round, most farmers indebted were in Andhra Pradesh (92.9%), followed by Telenghana (89.1%), and Tamil Nadu (82.5%). The average amount of outstanding loans for all India was INR 12585 after 59th round, with farmers in Punjab having maximum loans of Rs. 41,576, followed by Kerala Rs 33,907 and Haryana Rs. 26002. After 70th round average debt rose approximately four times. For all India farmers the average loan was Rs.47000, with Kerala farmers emerging as most highly indebted by Rs. 2,13,000 followed by Andhra Pradesh farmers by Rs. 1,23,400 and Punjab farmers by Rs, 1,19,500, TN Rs. 1,15,990. During this period, institutional loans increased from 58% to 60% only.

A newspaper report says that the average debt per farm household including crop loan, in Punjab works out to be Rs. 8 lakh.<sup>46</sup>

43 Narayanmoorthy (2016) showed that the average income from the cultivation for the States Having Above National Level Irrigation (SHANLI) is not substantially different from that of the States Having Below National Level Irrigation. (SHBNLI) at both time points namely 2002-03 and 2012-13. During 2002-03, the average annual income of SHANLI was Rs. 4,636 per household, whereas the same was Rs. 4,115 for SHBNLI category, a difference of only about Rs. 521.

44 Agricultural indebtedness in India: A comparative analysis of NSSO 59th and 70th round, Reetu, International Journal of Multidisciplinary Research and Development, undated

45 59th round was conducted in 2003 while the 70th round was conducted in 2013.

46 Punjab govt. sets up expert group to study debts, waiver, Vikas Vasudeva, The Hindu, Chandigarh, april 16, 2017, <http://www.thehindu.com/todays-paper/tp-national/punjab-govt-sets-up-expert-group-to-study-debts-waiver/article18069775.ece>

## Farmers' suicide

Declining income from farming and increasing debts, one of the essential aspects of agrarian crisis, is manifested by the fact 270,000 farmers since 1995 have committed suicides.<sup>47</sup> Though the government hardly admits farmer's suicides, even when the government admits farmer's suicide, there are huge differences in the estimates.<sup>48</sup> A 2007 survey commissioned by Shiromani Akali Dal government to the local administration pegged the number of suicides at 32. At the same time Bhartiya Kisan Union drew up a list of 2600 farmers who killed themselves. Later a survey conducted by three universities Punjab Agriculture University, Ludhiana, Punjab University, Patiala and Guru Nanak Dev University, Amritsar concluded that between 2000 to 2011, 6926 suicides were committed, and farm workers suicides contributed 42% of total suicides.<sup>49</sup>

The government data shows that 80 per cent of farmers killed themselves in 2015 because of bankruptcy or debts after taking loans from banks and registered microfinance institutions. According to National Crime Records Bureau's latest farmer-suicides data, of the over 3,000 farmers who committed suicides across the country in 2015 due to debt and bankruptcy, 2,474 had taken loans from banks or microfinance institutions.<sup>50</sup> First reported by The Indian Express on August 19, 2016, farmer suicides saw a spike of 41.7 per cent in 2015 from 2014. The year 2015 saw 8,007 suicides by farmers compared to 5,650 in 2014, according to NCRB data.

Among the states, the data showed, Maharashtra (3,030), Telangana (1,358), Karnataka (1,197), Chhattisgarh (854) and Madhya Pradesh (516) led the table. Karnataka saw a more than three-fold rise in farmer suicides in 2015, as compared to 2014 when around 300

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47 Over 2000 fewer farmers every day, P Sainath, the Hindu, May 02, 2013

48 Central government recently told the Supreme Court of India that the number of farmers who committed suicide has decreased since 2009 and that factors other than agrarian and financial distress also led them to end their lives, Agriculture Crisis in India, Jayati Ghosh, Frontline

49 Forget Green Revolution. Punjab's farmers are now killing themselves, Rajeev Khanna, 14th February, 2017, www.catchnews.com

50 In 80% farmer-suicides due to debt, loans from banks, not moneylenders, Deeptiman Tiwary, 7th January, 2017, Indian Express, <http://indianexpress.com/article/india/in-80-farmer-suicides-due-to-debt-loans-from-banks-not-moneylenders-4462930/>

farmers ended their lives.<sup>51</sup> The latest data is revealing as most thought that usurious moneylenders were the culprits, while it is the loans from institutional sources that are driving people to suicides.<sup>52</sup>

## **Other critical aspects affecting farmer's income**

Farmers' income is also affected by iniquitous distribution of benefits in the farming sector (MSP, subsidies, access to credits, insurance, loan waiver etc.).

### **Minimum Support Price (MSP)**

The government declares MSP for 24 crops, but it buys only wheat and rice from farmers through the FCI and other procurement agencies. Only a miniscule number of farmers are able to sell their products at MSP. Shanta Kumar Committee estimated how many farmers avail MSP by using 70th round of the NSSO/SAS data.<sup>53</sup> During the period July to December 2012 out of 90.2 million agricultural households in India, only 2.52 million households sold paddy to the procurement agency. Of this who sold to a procurement agency only 27% of their sales were at the minimum support price. Between January and June 2013, only 0.55 million households sold to a procurement agency. And of those who sold to a procurement agency only 14% of their sales were at the minimum support price. The situation is similar when it comes to wheat. As per the survey, between January and June 2013, 13 million households reported the sale of wheat, but only 16.2% reported to have sold wheat to a procurement agency. Of those who sold to a procurement agency, only 35% of their sales happened at the minimum support price.<sup>54</sup> Besides, the MSP hardly covers the costs of production. The National Commission on Farmers (NCF, 2006) and

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51 *ibid*

52 A study estimates that 16000 farmers commit suicide every year due to indebtedness and numerous other related factors, Factors associated with the farmer suicide crisis in India, Dominic Merriott, Review Article, Elsevier, published April, 2016, [www.creativecommons.org](http://www.creativecommons.org)

53 Report of the High Level Committee on Reorienting the Role and Restructuring of Food Corporation of India

54 Only 5.8% of farmers benefit from the minimum support price system, Vivek Kaul, 12th May, 2015, <https://www.equitymaster.com/dailyreckoning/detail.asp?date=05/12/2015&story=1&title=Only-58-of-farmers-benefit-from-the-minimum-support-price-system>

the Working Group on Agriculture Production (Business Line, 2010) have suggested that the MSP for crops at 50 percent more than the actual cost of production. Due to changing nature of agriculture, cost on fixed investment, rent and supervisory cost has increased substantially over the years. This difference in costs and MSP becomes more pronounced for instance, in Punjab for wheat, for paddy in Andhra Pradesh and sugarcane in Maharashtra as well.<sup>55</sup> It is also said that the raise in the MSP has not been consistent with rising costs/prices and remunerations in other sectors. MSP of wheat has increased from Rs. 76/quintal (1970) to Rs. 145/quintal (2015), rise of 19 times while during the same period the salaries of govt employees jumped 120-150 times, university teachers by 150-170 times and school teachers by 280-300 times.<sup>56</sup>

## Subsidies

The central government and state governments provide subsidies on inputs including seeds, fertilizers, water, electricity, insurance etc. The fertilizer subsidy alone amounted to around 10 per cent of the total agriculture GDP in 2013-14.<sup>57</sup> The situation in India is that there are far too many small growers whose holdings are less than an acre and it is the big farmers who walk away with most of the benefits.<sup>58</sup> A survey commissioned by NABARD and undertaken by Punjab Agriculture University has confirmed that 94% of the government subsidies are being availed by big and medium farmers, leaving the smaller farmers for whom subsidies are actually meant sidelined.<sup>59</sup> The study shows that small and marginal farmers (34%) receiving only 6% of total subsidies.

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55 Farm Income in India; Myths and Realities, A Narayanmoorthy, 2016

56 Devinder Sharma, 2017

57 Economic Survey 2015-16 Highlights for Agriculture Sector February 26, 2016, Religare, Brookings, [http://www.religareonline.com/mediagalary/religare\\_research\\_docs/201602261413589509503-economic%20survey%202015-16%20highlights%20for%20agriculture%20sector.pdf](http://www.religareonline.com/mediagalary/religare_research_docs/201602261413589509503-economic%20survey%202015-16%20highlights%20for%20agriculture%20sector.pdf)

58 Digging into farm subsidies, M.R. Subramani, the Hindu Business line, January 24, 2011, <http://www.thehindubusinessline.com/todays-paper/tp-opinion/digging-into-farm-subsidies/article2327015.ece>

59 Big farmers eating away subsidies, Priya Yadav, Times News Network, 23rd June 2013, <http://timesofindia.indiatimes.com/city/chandigarh/Big-farmers-eating-away-subsidies/articleshow/20721822.cms>

## Access to credits

Based on the 70th round of the NSSO/SAS data the State of Indian Agriculture 2015-16, DAC&FW, GOI, says that access to institutional credits during 2003 to 2013 increased only by 2%.<sup>60</sup> Institutional loans included those from the banks (42.9%) and cooperative society (14.8%) and more than 25% farmers remained dependent on moneylenders during the period.<sup>61</sup> The poor rate of lending by banks to farmers less than 0.01 ha emerged as a major concern. According to the 70th round survey report, 63.7% of such agricultural households had outstanding loans taken from moneylenders while it was a mere 12.9% from banks.<sup>62</sup> The rigidity of the institutional loan structure, as also the public humiliation of defaulters by many commercial and cooperative banks, makes it difficult to deal with even for farmers who can access such loans.<sup>63</sup>

## Insurance

In times of climate change driven weather uncertainty insurance is crucial. Currently 20% of the farmers and 23% of total cropped area in the country is insured. Recently launched Pradhan Mantri Fasal Bima Yojana seeks to increase coverage of insured cropped area to 50%.<sup>64</sup> The scheme substantially reduced the premium to be paid by the farmers (1.5% for rabi crops, 2% for all kharif crops and 5% for commercial crops), increased risk coverage and promised faster settlement of the claims.<sup>65</sup>

PMFBY has increased the coverage of cropped area and number of farmers insured. However, many feel that a lot of optimism is being placed in this scheme, and it is too early to judge how it has performed, as it was started only last year. However, if the early indications are to be believed, this scheme is also failing farmers and benefitting only

60 State of Indian Agriculture 2015-16, DAC&FW, GOI,

61 Agricultural indebtedness in India: A comparative analysis of NSSO 59th and 70th round, Reetu, International Journal of Multidisciplinary Research and Development, undated

62 Survey proves most Indian farmers born, live and die in debt, Shemin Joy, the Deccan Herald, Delhi, 19th June 2016

63 Agriculture in Crisis, Jayati Ghosh, Frontline, 2016

64 A fifth of Indian Farmers covered under crop insurance scheme, Governance now, 9th May, 2016

65 Crop Insurance new dawn for farmers?, Rajkamal Nirmal, the Hindu Business Line, 3rd April, 2016

insurance companies. Responding to a question in Rajya Sabha on 7th April, 2017, Mr. Arun Jaitley, Finance Minister, said that during kharif season in 2016. The farmers presented a claim of RS. 4270.55 crores, however, the Rs. 714.14 crore was paid to the farmers in settlement of their claims. This amounts to only 16% of the claims made. Insurance companies collected a premia of Rs. 21,500 crore during kharif in 2016. The total claims presented was less than 20% of the premia collected, and the actual payment against the claims was only 3.31% of the collected premium.<sup>66</sup> It is obvious that insurance companies have made a killing.

## **Do the SDGs appropriately address hunger, food and nutrition?**

Both MDG and SDGs have failed to look at hunger and under nutrition issues from the perspective of fast changing world. Approaches to food and nutrition insecurity in the global south continue to consider hunger and hunger based under nutrition as the main or the only problem to be addressed and imagine the food insecure population to be primarily rural dwelling individuals (FAO, 2015). This has resulted in responses that focus largely on production based responses, despite issues of access and entitlements being identified as early as the 1980s (Maxwell, 1996 p.157). This largely involves a twin track approach, (i) food aid and social safety nets, and (ii) development programmes to enhance performance of production systems. This approach focuses almost exclusively on rural areas. Levels of urban poverty are consistently underestimated on the basis of use of same indicators, which fail to account for the higher income required to survive in urban areas. Urban poor (and especially migrants) with very little or no purchasing power are left completely to the markets. The high dependence of the urban poors on the markets as their sources of food should explicit focus on overcoming the challenges faced by urban households in accessing affordable, nutritious, hygienic and culturally appropriate food through these markets. The food and nutrition has been largely absent in the global discussions on urban

66 Pradhan Mantri Fasal Bima Yojana; Naam Kisan Ka Fayda Companiyon ka, Bharat Sharma, Desh-bandhu beaureu, May 21, 2017

development, as much as the urban focus has been missing in the discourses of hunger, food and nutrition.

Urban poor are also witnessing a significant change in the diets and the food basket. Households in the global south are witnessing triple burden of under nutrition, micronutrient deficiency and over nutrition manifest in overweight and obesity. Overweight and obesity are often framed as outcomes of income growth, yet in many developing countries (especially eastern and southern Africa) diet change is happening most rapidly in the three quarters of population that lie below the international poverty line of USD 2 per capita per day.<sup>67</sup> Changing diets more than increasing income shows changes due to poverty. This is confirmed by the fact that while fruits and vegetable prices are increasing constantly, many of the cheap and imitation fast food is luring urban poor with reduced prices. In the circumstances, traditional approaches not only address the problem, but exacerbates food system transition that is leading to new forms of under nutrition. It requires a set of policies and programmes that take a systemic view and stronger regulation of the private food sector, which is also required to reinforce food safety standards.

## **Food and nutrition in the MDGs and the SDGs**

Food and nutrition security was included in the MDG under Target 1c: 'Halve between 1990s and 2015, the proportion of people who suffer from hunger.' Both indicators of the target 1c did not acknowledge micronutrient deficiency or over nutrition. It has been generally accepted that the MDG 1 failed to reach hunger target, although the extent to which it failed is open to debate.<sup>68</sup> The MDG target narrowed the broader framing of food sovereignty and opened up space for large scale industrial agriculture and nutrition supplementation programme focus. This has been largely critiqued on the basis of unsustainable agricultural projects that have emerged, as well as unquestioned increased role of private sector actors as partners in development.<sup>69</sup> The flawed approach diluted the focus of the hunger, food and nutrition and ultimately

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67 Tschirly et al., 2015, p 110

68 Hickel, 2015

69 Vandemoortele, 2009, also see FAO, 2015c, the state of Africa Food Security

encouraging a lot of programme dominated by private interests in food aid, trade and growth champions. This misappropriation by trade, aid and growth lobbies has been argued to have put a disproportionate emphasis on the importance of large international donors and companies, rather than national governments.<sup>70</sup>

The SDG 2 continues to frame the food problem as one of scarcity, and does not reflect the present and future realities of food insecurity in the global south. Targets 2.1 and 2.2 are the only two food security targets, and both frame the food problem as one of scarcity.<sup>71</sup> This construction of the problem, in combination with the persistent rural framing of food and nutrition insecurity leads to a productionist bias evident within the remaining targets of the goal 2. The framing clearly shows that the goal has been influenced by food sovereignty campaigners as well as the agribusiness companies.<sup>72</sup> The Campaign for Peoples Goals for Sustainable Development (2014) had challenged the approach and inadequacy in framing SDGs in general, and SDG 2 in particular.<sup>73</sup> In the two statement delivered in the OWG Session (dated July 2014) by the Campaign, it challenged the logic of global food production and neoliberal food policies, and lack of emphasis on land alienation and grabbing, increasing role and influence of the agribusiness companies in global negotiations.<sup>74</sup>

## **Changing context of hunger and malnutrition in India**

Food Insecurity Atlas of Urban India (2002) for the first time brought significant attention on under nutrition in urban areas.<sup>75</sup> It indicated that more than 38% children under the age of three in India's cities and town are underweight and more than 35 children in urban areas are

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70 Nayyar, 2012

71 Jane Battersby (May, 2017), MDGs to SDGs-new goals, same gaps; the continued absence of urban food security in the post 2015 global development agenda. African Geographical Review

72 The target 2.3, doubling the food production for meeting hunger and nutrition, supported by 2a, (increasing investment in agriculture including through international cooperation) and 2c (ensure proper functioning of the food commodity markets..) are clearly an agribusiness agenda, rest of the targets manifests influence of food sovereignty campaign by bringing focus on small farmers., sustainable agriculture and genetic diversity. Both overlook the crisis in the urban contexts.

73 The author has been an active member of Campaign for Peoples Goals for Sustainable Development.

74 The statements were delivered by Mr. Paul Quintos and the author. Date of the OWG/PGA Meeting, link of statements on the UN NGLS

75 Food Insecurity Atlas of Urban India, MSSRF and the WFP, 2002

stunted. Besides, availability, accessibility and affordability of food, the nutritional status of children in urban areas are also impacted by non-food factors like housing, drinking water and sanitation, education and health services. People in urban areas are more likely to live in congested spaces, having limited access to drinking water and in poor sanitation. Even though urban wages and salaries are higher than rural wages and salaries urban poor fare poorly in terms of livelihood security as they often depend upon casual employment and daily wages. One surprising finding of the report was that urban Kerala was not considered to be food secure even though it is one of the most advanced states in terms of human development and all basic indicators.<sup>76</sup> Kerala fell in the same category in the map as urban Haryana, Rajasthan, Guajarat, Karnataka etc. the calorie intake in urban Kerala was lower than Madhya Pradesh, the most food insecure state.<sup>77</sup> Another surprising finding is that urban population in Rajasthan is more food secure than urban Tami Nadu and urban Maharashtra. This reinforces the paradox that is being argued in this paper, and advocates for the different lens to see and tackle urban poverty. The Atlas revealed a relationship between urbanization and the food consumption of the bottom 10% of the population. The report shows that the cereal intake of the lowest 10% is negatively related to the extent of the urbanization. This is vital information since cereal consumption is the main source of calories for the poorest population. The report also showed that there is disproportionate representation of SCs, and STs in the poorest sections of the urban population.<sup>78</sup> The report concludes that the problem of hunger and malnutrition in India is definitely not one of the scarce food production.<sup>79</sup>

The MSSRF and WFP together again brought the report of the state of Food insecurity in Urban India in 2010.<sup>80</sup> The report argued that urban food security deserves serious attention. It also confirmed debilitating trends. It said that about half the women in urban areas are anemic and undernutrition among women, indicated by chronic

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76 Food insecurity in urban areas, Kanta Murali, Frontline, undated

77 One view point suggests that even though calorie intakes are lower in Kerala, nutrients are better utilized since health care, sanitation and education are more advanced in the state.

78 Food insecurity in urban areas, Kanta Murali, Frontline, undated

79 In 2002 India had a surplus of 53.56 MT of food grains.

80 Food Insecurity in Urban India identifies hunger hot spots across the country, WFP, 27th September 2010

energy deficiency is increasing.

UNICEF's the State of the World's Children 2012 reported that like most parts of the world, children living in around 49000 slums in India are "invisible."<sup>81</sup> it noted "that the notion that even poor in urban areas is better" is not correct.<sup>82</sup>

The situation in urban slums is particularly worrying. Over the next five years, India's urban population is projected to double to more than 800 million, of which about 200 million-more than the current population of Pakistan-is likely to live in poverty. The population growth rate of urban slums is double the growth rate of overall urban population.<sup>83</sup> Children are especially vulnerable to the easy availability of packaged food and irregular, unbalanced diets, and unhealthy conditions in urban slums.

Activists working on food security believe that India's policies for tackling hunger have largely remained focused on rural regions.<sup>84</sup> Hunger in urban areas cannot be approached in the same way as in rural areas as they have different challenges.

NGO Child Rights and You (CRY) found in a survey in 2016 that Delhi, India's capital bears the shame of having 47% of its children (urban poor) diagnosed as malnourished.<sup>85</sup> The children do not fare any better with respect to the other indicators of malnutrition with over 45% stunted and 43% found to be wasted (acute malnutrition). It emphasized that without ration card or Aadhar card, a sizeable population of migrants is battling severe malnourishment as they remain invisible to government policies.

The IFPRI in its 2017 report showed that India is caught in a paradox situation, its rapid economic growth is coupled with much slower decline in under nutrition.<sup>86</sup> The report said that in India where

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81 Half of these slums are in five states-Maharashtra, Andhra Pradesh, West Bengal, Tamil Nadu and Gujarat.

82 Rural Poor in India better off than urban poor; Unicef, Hindustantimes.com, 1st March 2012, Delhi

83 Why malnutrition grows in Rising Urban India, Dilnaz Boga, 3rd June 2015, Indiaspend.com

84 India has programmes to alleviate hunger but not the will to enforce them, Priyanka Vora, 15th Oct, 2016, scroll.in

85 Capital Shame; hunger gnaws at them, Bindu Shajan Perappadan, 2nd May 2016, the Hindu, Delhi

86 Its Oct. 2016 report ranked India 97 among 118 countries on Global Hunger Index. India fared worse than almost all its neighbors', China, Myanmar, Sri Lanka and Bangladesh. Only Pakistan was ranked lower at 107

17% of urban dwellers or 65 million live in slums, the problem of malnutrition is glaring.<sup>87</sup> The report also projects that 900 million urban residents will be added in just three countries-China, India and Nigeria-by 2050. The report says that one in three stunted children now lives in an urban area of a developing countries such as India, and persistent child under nutrition, stubborn micro nutrient deficiency and an alarming rise in overweight and obesity in urban areas mark the shift of the burden of malnutrition from rural areas to cities. The study identified lack of exclusive breastfeeding and packaged food as major reasons, and found that 66% of households consume packaged food high in fat, with two-thirds consuming these daily. However, it also noted that (based on a survey with responses from over 100 countries) people believe that hunger and under nutrition can be eliminated by 2025 in their own countries.<sup>88</sup>

## Conclusions and recommendations

United Nations has declared 2016-2025, the decade for action on Nutrition. By reducing hunger and malnutrition, we can make progress not only on Goal 2 of the SDGs but also goals on poverty, inequality, water and sanitation, health, gender and sustainable cities. The Global Hunger Index Report predicts that India will fail to achieve its sustainable development goal target of ending hunger by 2030.<sup>89</sup> India and many other developing countries will require a sea change in the policies and programmes to tackle hunger and under nutrition besides a determined political will and robust action. Our policies have approached hunger mainly as rural phenomena and as one of food scarcity. However, as explained earlier we need to identify emerging challenges of rapid urbanization of hunger and malnutrition, and increasing disconnect between food and nutrition. Other important determinants like livelihoods, decent wage, housing, drinking water, sanitation, education, open spaces will have to be factored in tackling

87 India's economy is growing but distress migrations ensures that children are not, Anindito Mukherjee/Reuters, and Priyanka Vora, 24th March 2017, scroll.in

88 2017 Global Food Policy Report; Rapid Urbanization is Critical Issue for Addressing Hunger, Nancy Lu, 14th April 2017, thp.org

89 India has programmes to alleviate hunger but not the will to enforce them, Priyanka Vora, 15th Oct, 2016, scroll.in

hunger and under nutrition. Food production aspects require strong action with view to minimize risks in the long run, rather than emphasizing maximizing production in the short term. Farmers' income need to be enhanced significantly so they have an incentive to engage in agriculture. Food production systems need to be made sustainable by enhancing biodiversity and meet the challenges produced by climate change. Besides, challenges in reduced nutrition and supply side impediments also need to be met. Public reinvestment in agriculture is an urgent need. Though the focus needs to shift to urban poor, balance will have to be maintained in terms of rural development as moving all rural population to urban areas might not be feasible or desirable. Some of the recommendations are laid down below -

- 1. Identifying urban hunger and under nutrition:** While urban dimension has remained largely absent in hunger and food security debates; hunger also has been largely invisible in urban planning and governance contexts. There has recently been an upsurge in city scale food governance in Europe and North America, but outside a few notable examples such as Belo Horizonte in Brazil, the global south has not been actively engaged in urban food planning outside of the context of urban agriculture.<sup>90</sup> We need to identify hunger hot spots in urban areas and should have a concrete strategy to deal with that in urban planning and governance.
- 2. Strengthening food safety nets in urban areas:** As half of the children now live in urban areas and a significant proportion of them are below poverty, the focus needs to shift to urban areas and especially to urban slums. Improving functioning of programmes like PDS, ICDS and Mid-day meals should be a priority. In fact, PDS was initially started for urban labour and factory workers.<sup>91</sup>

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90 Jane Battersby (May, 2017), MDGs to SDGs-new goals, same gaps; the continued absence of urban food security in the post 2015 global development agenda. *African Geographical Review*

91 India had been importing wheat from the US under Public Law 480 (PL480) since 1954, which gave developing countries the opportunity to purchase using their own currency instead of Dollars. In 1965, due to India-Pakistan war and condemnation of the role of the US in Vietnam war, US threatened to withdraw PL480 programme. By then urban laboring class had become dependent on wheat from ration shops. The circumstances unfolding gave rise to the famous expression "ship to mouth existence," which made india not only to renegotiate PL480 from the US but also experiment with Norman Borlaug's wheat seeds, which had solved the problem of rust and helped Mexico become

3. **Food for work programme in urban areas:** Looking at the grim scenario of hunger and under nutrition and lack of jobs in urban areas, there is a compelling need for work for food programme. Work for food programme was also recommended by Food Insecurity Atlas of Urban India in 1992.
4. **Ensuring critical interlinkages of services necessary for eradicating malnutrition:** Food and calorific intake are only a small part of ensuring nutrition especially in the urban areas. Equally important are ensuring appropriate housing, access to drinking water and sanitation, ending open defecation, health services, education, ensuring nutrition of pregnant women. Another layer of complexity is added as different departments responsible for managing these services work in poor coordination, or at times at cross purposes. A convergent approach facilitating smooth coordination needs to ensure that these services expedite achieving better nutrition outcomes rather than impede them. Women's education and livelihood should also remain in the focus of attention.
5. **Jobs vs. livelihood:** Urban poor main depend on daily wages for food security and spend substantial proportion of their earning on food. However, it's largely dependent on job. Rural poor too mainly depend on wages for food. Rapid urbanization presupposes that majority of rural population will move to urban areas and jobs have to be created in urban areas. While focus on job creation in urban areas is good, it may be fallacious to think that all livelihoods can be replaced by jobs.<sup>92</sup> Neither this is desirable. In rural areas and especially in agriculture, analysts have warned against moving all farming population to urban areas. Chand et al. has warned "raising income of farmers by moving sizeable chunk of them outside agriculture (and thus raising farm size) has not worked in India and other major Asian countries."<sup>93</sup> Rather,

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exporter of wheat. Putting wheat in its place, or why the green revolution wasn't quite what its made out to be, Richa Kumar, 2016, IIT Delhi

92 Under Skill India Mission, India's target is to create 500 M skilled workers by 2022, while the current capacity of skilling is 2 million per year. In 2015 1.76 million received training, of which only 58,000 could be certified. Only 82,000 got placements. (R)

93 Farm size and productivity: understanding the strengths of smallholders and improving their livelihoods, Ramesh Chand, P A Lakshmi Prasanna, Aruna Singh, EPW, June 25, 2011

the government should make efforts to create jobs and livelihood options based on natural resources (forests and fisheries etc.) in a manner that both reinforce each other. The current approach of the government, while on hand failed to create desired number of jobs, on the other it has also reduced significant number of livelihoods based on natural resources or traditional skills.

6. **Increased investment in social services, health and education:** India needs to urgently enhance its investment in health and education, and other social sectors. India's social spending on health and education remains smaller than sub-Saharan Africa.<sup>94</sup> Many smaller countries and poorer countries have shown better commitment and progress towards reducing hunger and under nutrition.<sup>95</sup>
7. **Localizing food systems:** The current model of FCI procuring food grains from the farmers all over the country bringing it to warehouses and then sending it back was a model with inherent deficiency and thus prone for failure. In rural areas better purpose will be served with localizing food production, procurement and distribution. There are no country scale models available, but many CSOs have made successful efforts at local levels, which are worth experimenting scaling up. The IFPRI report also advocates "importance of local democracy by empowering communities to make policies that address their specific strengths and needs, we have a better chance of ending hunger and malnutrition for everyone."<sup>96</sup> The FCI procurement can be limited to make food grains available in scarce areas.
8. **Preventing land alienation and:** Ministry of agriculture and farmer welfare identifies alienation of agricultural land as one of the challenges.<sup>97</sup> The evidence shows that agricultural land

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94 India has programmes to alleviate hunger but not the will to enforce them, Priyanka Vora, 15th Oct, 2016, scroll.in

95 India has improved its ranking on the Global Hunger Index, moving up from "alarming" to "serious", the improvement is dwarfed by countries like Nepal, which is also in serious category, but has improved from 43 rank (in 1992) to 21 in 2016. India's economy is growing but distress migrations ensures that children are not, Anindito Mukherjee/Reuters, and Priyanka Vora, 24th March 2017, scroll.in

96 2017 Global Food Policy Report; Rapid Urbanization is Critical Issue for Addressing Hunger, Nancy Lu, 14th April 2017, thp.org

97 State of Indian Agriculture 2015-16, DAC&FW, GOI

conversion has become a serious issue in the country but the extent and intensity varies across different states. Between triennium ending (TE) 1991-92 and TE2011-12, net sown area in the country declined by about 1.8 million ha but it increased in some states, e.g. about 20 lakh ha in Rajasthan and 9.5 lakh ha in Gujarat. In contrast, Odisha lost over 17 lakh ha net sown area, Bihar (including Jharkhand) 12.4 lakh ha, Maharashtra (7.6 lakh ha), Tamil Nadu (7.1 lakh ha), Karnataka (3.1 lakh ha), Andhra Pradesh (2.7 lakh ha) and West Bengal (2.6 lakh ha). Contrary to general perception, Gujarat is the only state which has been able to add about 3 lakh ha to its total agricultural land during last two decades. The empirical results revealed that urbanization, road infrastructure expansion and industrial development were the most important factors affecting agricultural land.<sup>98</sup> According to the estimate of the Ministry of agriculture, more than 3.5 million ha of land went to non-agricultural purposes during 1990 to 2003.

- 9. Investing in agricultural R & D:** There hasn't been any major breakthrough in agriculture research for quite some time as agricultural research is highly constrained financially. While India spent 31% of its agricultural GDP on research and development in 2010, in the same year China spent almost double the amount, with even Bangladesh spending more on agricultural R&D than India.<sup>99</sup> The gap between India and China has been increasing. Now China spends four times more in agricultural research than India. India needs to triple its invest in agricultural R&D to reach anywhere close to China.<sup>100</sup> Many of the State Agricultural Universities are in such a pitiable financial condition, that it is alleged that finances meant for research are spent on salaries of the staff.<sup>101</sup>

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98 Dynamics of Land Use Competition in India: Perceptions and Realities, Sharma, Vijay Paul, IIM Ahmedabad, 2015

99 What is the future of agriculture in India, Vishwajeet Choudhary and Gursharan Singh, 19th July, 2016, [thewire.in](http://thewire.in)

100 India needs to triple investment in agricultural research; IFPRI, The Hindu Business Line Bureau, 11th April, 2017, <http://www.thehindubusinessline.com/economy/agri-business/india-needs-to-triple-investment-in-agricultural-research-ifpri/article9693679.ece>

101 XXX

- 10. Zero tolerance to hunger deaths:** Every hunger death is shameful for any developing country. In many countries including India, the government never acknowledges hunger death. All the efforts are made to show hunger deaths and deaths due to disease. In the PUCL case, the Supreme Court (2002) said that it is duty of all the states to prevent hunger deaths. It also said that Chief Secretaries should be held responsible for any hunger death taking place in the state.<sup>102</sup> It is high time that the country should have a zero tolerance policy for hunger death.
- 11. Resisting false solutions:** The narrow framing of the hunger and under nutrition has allowed a host of actors including agribusiness companies, hedge fund managers and private profiteers not only to enter the discussion but occupy significant policy space at all levels. Post MDGs and after the food crisis of 2008-09 saw a flurry among agribusiness companies to support food security through large scale industrial agriculture projects in Africa viz. Alliance for Green Revolution in Africa (AGRA) and Scaling Up Nutrition (Sun). Bill and Melinda Gates Foundation and Monsanto have significant stakes in AGRA in which they seek to sell their technology and monopolize seeds and other inputs.<sup>103</sup> SUN is platform representing countries, CSOs, UN agencies, business and donors. While SUN claims that these platforms should be 'government-led' it does not have in place adequate safeguards to stop corporations and their front groups gaining unprecedented opportunities to influence nutrition policy shaping and setting and promoting unsustainable market-driven policies. Critics have raised a number of issues with regard to SUN's strategy.<sup>104</sup> SUN encourages governments – especially the world's most

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102 Chief Secretary liable for any hunger death in the state, says SC., Times News Network, 30th October, 2002, <http://timesofindia.indiatimes.com/india/Chief-Secy-liable-for-starvation-deaths-says-SC/articleshow/26705652.cms>

103 The Alliance for a Green Revolution in Africa (AGRA) is a \$400 million dollar enterprise funded by the Rockefeller Foundation and the Bill & Melinda Gates Foundation and has the former UN Secretary General, Kofi Annan as the Chairman of the Board. It is instructive to note that both AGRA and USAID top positions are filled with people that come from Monsanto and Dupont, AGRA's Technology Push in Africa, A commentary by Marrien Bassey, Friends of the Earth International, <http://www.foei.org/wp-content/uploads/2012/09/AGRAs-Technology-Push-in-Africa.pdf>

104 Concerns about the role of business in scaling up nutrition, International Baby Food Action Network (IBFAN), 13th June, 2012, <http://www.babymilkaction.org/archives/9868>

poorly resourced – to set up multi-stakeholder ‘platforms’ with the SUN Business Network, which includes food corporations like Pepsi, Cargill, Nutriset, Britannia, Unilever, Edesia and many others.<sup>105</sup> In these circumstances, no one can deny conflicts of interests in improving nutrition and promoting business interests of these food giants. Of the 58 countries in this network, 40 are from Africa. India is being lured to join this network. However, activists have suggested the government not to join the network, even though some of the states (Maharashtra, Uttar Pradesh and Jharkhand) have already joined the network.<sup>106</sup> Similar conflict of interest is being alleged against the Global Alliance on Climate Smart Agriculture, which seeks provide triple bullet solution to reduce carbon emission from agriculture, enhance food security and increase farmers income. It is being promoted by CGIAR, IFAD, World Bank, UN agencies in collaboration with agribusiness giants like Monsanto, Wallmart, Syngenta and Yarra, and despite the fact that the results have been close to zero, its gaining currency in many countries and in Africa.<sup>107</sup> Genetically Modified Crops is also being sold as solutions to sustain agriculture and food production in changing climate.<sup>108</sup> These false solutions rather exacerbate hunger and malnutrition.

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105 Activists: don't join SUN, a nutrition drive, Times News Network, Times of India, 24th May 2017, Delhi

106 ibid

107 What's wrong with "climate smart agriculture" Ben Lillistan, 30th September, 2015, IATP, <https://www.iatp.org/blog/201509/what%E2%80%99s-wrong-with-%E2%80%9Cclimate-smart%E2%80%9D-agriculture>

108 GM Crops will not solve India's food crisis, 22nd September, 2013, Wall Street Journal, <https://blogs.wsj.com/indiarealtime/2013/09/22/gm-crops-wont-solve-indias-food-crisis/>

# Sustainable Urban Lifestyle

Pournima Agarkar & Priyadarshini Karve

## Preamble

With the human ecological footprint exceeding the total area of the earth, sustaining future generations of humans within the planetary boundaries of the earth's resources has become a fundamental challenge for humanity. Expanding urbanisation, leading to increase in per capita consumption across the globe adds to this challenge. The higher risk of disasters due to climate vulnerability of dense populations living in urban sprawl adds another dimension to this challenge.

Many of the cities that will exist by the end of the 21st century are yet to be built, and most of these will come up in what is today considered as the 'developing world', lead in its quest for 'progress' by China and India. The 2011 census of India for the first time showed a higher increase in urban population than rural (attributed to migration from rural to urban areas), and by 2030 or so, India is expected to have more people living in urban areas than rural.

## Recipe for Sustainable Cities

Cities are considered to be the engines of economic development of a country, and India is no exception. However, the single minded pursuit of economic growth over the last few decades have lead the cities to become parasites for the ecosystem that they are based in, as well as exploiters of the human capital of migrant populations. A sustainable city should not only focus on economic prosperity, but also on ensuring a secure, just, and equitable society for all its citizens, and conservation of the ecosystem resources that are vital to its own existence. The key

of a successful sustainable city is to find the right balance in these three priorities. It is vitally important for India to on one hand transition existing cities towards sustainability along these lines, and on the other hand to embed the principles of sustainability from the start into cities that are being developed. This transition requires fundamental changes at the urban planning and governance level, as well as at the level of the citizens' lifestyle choices and aspirations.

We have been engaged in an academic study project aimed at achieving Sustainably SMART Pune, which is a Tier 2 city based in Maharashtra state. We have identified the following key elements for urban sustainability:

1. Prioritise and optimise use of locally available resources to the best extent possible. For example, encourage and incentivise citizens to grow local foods through urban farming initiatives, and support organic farmers of native food species in the neighbourhood of the city.
2. Reduce dependence on non-renewable external resources by investing in first local and then external renewable resources. For example, the city should try to shift some of its electricity demand to roof top solar PV on all suitably located public and private roof tops, and also focus on increasing the renewable electricity component in its purchased grid power.
3. Create circular, efficient, and environment friendly paths of resource utilisation within the city, to minimise the waste leaving the city limits and impacting the ecosystem as well as village communities on the outskirts of the city. For example, incentivise retailers to sell goods packaged in eco-friendly packaging, and also incentivise and encourage creation of businesses based on recycling and reusing packaging waste with minimal ecological impact and carbon footprint within the city itself.
4. Ensure transparency and accountability in the governance systems, and focus on providing equitable access to basic services for all citizens, irrespective of socioeconomic status.
5. Assess the climate change vulnerability of the city, and address critical areas for climate proofing of the city. For example, coastal cities need to focus on preservation of mangrove systems along

the coast for protecting the sea shore from excessive and rapid erosion.

6. Encourage local co-operative businesses or local small and medium enterprises, either lead by members of the weaker sections of the urban society, or giving preference to members of weaker sections of the urban society for hiring workers, that are primarily engaged in creating sustainable products and services for the local citizens.
7. Undertake special projects and drives to inform, sensitize and empower local citizen groups to find and implement sustainable and equitable solutions for the environmental and social issues of concern for the city.

## **Examples of Sustainable Urban Lifestyle Choices**

In the course of our study, we also found several examples of how informed and motivated citizens can bring about changes in their lives, and inspire others.

### **Implementation of Rooftop Rainwater Harvesting – An initiative by Col. Shashikant Dalvi.**

Col. Shashikant Dalvi, a retired army officer, successfully designed and implemented rooftop rainwater harvesting system in his housing society at Vimannagar, Pune. The municipal infrastructure for supplying water has been outstripped by the rapid development of this part of Pune city, and hence residents have to largely depend on privately operated water tanker service or bore wells to meet their water requirements. Col. Dalvi realised that his society had to pay Rs. 25,000 monthly for purchasing water. Based on his experience in the army, he suggested implementing rainwater harvesting in the residential building. Initially the society management sanctioned an experimental project on a part of the terrace, which resulted in the reduction of the water tanker usage by 50%. This encouraged the management to expand the system to cover the entire roof top area and to recharge a bore well existing on the premises, after passing the water through a filter. Consequently, the bore well yield increased from 30 min/day to 8 - 9 hr/day, and the dependency on water tankers was eliminated. Col. Dalvi is now the

leading advocate and advisor for roof top rain water harvesting systems in Pune.

Source: <https://www.youtube.com/watch?v=B26NuqhbwqY&list=PLO9IWBWSV1ag2NXxMOJ-hG-BeukaGISGmd&index=7>

## **Reconnecting Citizens with the local ecosystem** – by **Mrinalini Vanarase**

Mrinalini Vanarase, an expert in the field of Ecological restoration, Watershed management and Ecological landscaping, has been promoting an interesting concept in Pune. Open community spaces in residential areas are often considered a nuisance and a risk due to fear of possible illegal encroachment. The standard practice is to either build a community hall/club house type structure or convert the space into a manicured garden. According to Mrinalini, these plots should be allowed to evolve as urban wilderness. If left untouched, nature takes over the land and a diverse flora consisting of native species emerges. This also attracts native insects, birds, reptiles, etc., and provides a protected habitat for them. These patches of wilderness provide a great opportunity for the citizens to connect with nature in their neighbourhood, and witness the interplay of species in the native ecosystem. From more practical considerations, these patches also act as conduits for absorbing rainwater and recharging ground water naturally, and creating a rich and fertile top soil. These areas naturally act as carbon sinks and help mitigate local urban heat island effects. Mrinalini is engaged in spreading this concept through citizens' meetings, learning camps for children, etc.

Source: <https://www.youtube.com/watch?v=nTVQQhibc6I&list=PLO9IWBWSV1ag2NXxMOJ-hG-BeukaGISGmd&index=6>

## **Sustainably managing organic waste at source** – **The Dighe family**

The Dighe family has been advocating use of renewable energy and minimising waste in their neighbourhood for more than a decade. They have set up a food waste based biogas plant on the terrace of their house located in an housing society in Karvenagar, Pune. All the kitchen and food waste from the household (peels of vegetables, fruits, leftover

food, plate waste, etc.) is taken into the biogas plant, and the biogas generated is used for cooking in their kitchen. In this manner, they have not only reduced their own dependence on LPG (a non-renewable fuel) for cooking, but are also contributing to reducing the load on the city's waste management system. They have also inspired several other families in Pune to go in for this 'waste-to-energy at source' system.

Source: <https://www.youtube.com/watch?v=xk5wJVZzpsU&list=PLO9IWBWSV1agLbPQqKI-WY-qSH-fdPBjix&index=1>

# SDG 13 Take Urgent Action to Combat Climate Change and It's Impact

Ajay K. Jha

193 countries adopted the Sustainable Development Goals (SDGs) in September 2015. SDGs are a set of 17 goals emerging out of intergovernmental negotiations of over two and half years, to integrate three pillars of development, economic, social and environmental. While the SDGs continue to pursue the unfinished agenda of the MDGs; it also goes beyond that mandating that sustainability is an equally important dimension of growth for all nations, communities and peoples, with the intention to leave no one behind. While the global communities convergence on the Agenda 2030 (SDGs are popularly known as the agenda 2030, as most of the goals have to be achieved in the next 15 years till 2030), the critics have also pointed out that the SDGs remain a highly compromised agenda and doubt its capacity to bring the transformational change that is required to make growth sustainable and inclusive and protect environment.<sup>1</sup>

All the countries have reportedly started preparing for implementation of the SDGs, which became operational from 1st January 2016. In the UN High Level Political Forum on the SDGs, which is tasked by the UN to oversee the implementation of the SDGs, periodical review and share lessons among the countries, 25 countries made a Voluntary National Review (VNR) of the SDGs implementation. In 2017, 44 countries including India have committed to do a VNR.<sup>2</sup>

1 While the minimum financial requirement for achieving the SDGs is around \$300 billion every year for the next 15 years, the international cooperation does not seem to be rising to the occasion. Besides, the aspirations on poverty eradication, food and agriculture, inequality, gender, climate change are critiqued for being extremely modest.

2 For more information on the VNRs, please see <https://sustainabledevelopment.un.org/vnrs/>

India has committed to implement the SDGs in line with the global spirit to make growth sustainable and inclusive. The Prime Minister of India, speaking the SDGs Summit in the UN in September 2015 said “Today, much of India’s development agenda is mirrored in the Sustainable Development Goals. Since independence, we have pursued the dream of eliminating poverty from India. We have chosen the path of removing poverty by empowering the poor.”<sup>3</sup> India has notified NITI Aayog as nodal agency for the implementation of the SDGs, has asked the states to prepare action plans and has also embarked upon exercise to develop national indicators for the 17 goals, besides undertaking consultations on specific goals.<sup>4</sup> NITI Aayog is to come up with the long-term vision (2015-30) and medium term plan (2015-22). It has already come up with a short-term action agenda recently. NITI Aayog is also tasked to come up with an energy policy in the light of India’s commitment to the Paris Agreement. India has also considerably improved parliamentary oversight on the SDGs by keeping a 5-hour discussion in the each session of the Parliament.<sup>5</sup> State governments have been also asked to prepare an action plan on implementing the SDGs, however, very few except Assam have done anything significant.<sup>6</sup>

## India’s progress on SDG 13

Under the SDG framework, actions under SDG 13 are largely based on the outcomes of the climate change negotiations in UNFCCC. This is unfortunate, as the UNFCCC has achieved very little during its more than 20 years of negotiations. In 2015 Paris Agreement was signed by 193 countries and was considered a landmark. The global compact and convergence is an outstanding achievement undoubtedly, however, in view of the fact that commitments under the Paris Agreement too, fail

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3 <http://www.narendramodi.in/text-of-pm-s-statement-at-the-united-nations-summit-for-the-adoption-of-post-2015-development-agenda-332923>

4 NITI Aayog is the National Institution for Transforming India, which has replaced erstwhile Planning Commission of India, and is tasked with enhancing cooperative federalism.

5 Lok Sabha mulls exclusive day to discuss the SDGs: Speaker, PTI, 24th October, 2016, <http://india-today.intoday.in/story/lok-sabha-mulls-exclusive-day-to-discuss-sdgs-speaker/1/794599.html>

6 Reportedly many states have started working on the SDGs Action Plan, however, NITI Aayog’s web-page has only Assam’s plan, <http://niti.gov.in/content/states>

to keep the rise in temperature below 2 degrees Celsius. Many critics have dubbed Paris Agreement as politically “highly compromised,” and without any mechanism for legal compliance. In these circumstances, SDG 13 could have been an additional instrument in encouraging countries to move towards low carbon development pathways. Therefore, in a sense SDG 13 is a lost opportunity. Despite the fact that climate change was the most talked about issue (besides finance) in the OWG discussions from which the SDGs emanated, it is a completely scaled down aspiration and countries do not need to make any additional effort in implementing SDG13. India’s institutional framework on climate change is focused on achieving its pre 2020 commitments and the NDCs (Nationally Determined Contributions) rather than achieving SDGs in general or SDG 13 in particular.

## India’s commitments

India made agreed to reduce its emission intensity by 20-25% by 2020 over 2005 level. In Paris Agreement, India’s NDC committed to achieve three targets;<sup>7</sup>

1. 33% - 35% reduction in the energy intensity of its GDP by 2030 over 2005 (20-25% by 2020 over 2005 in the Copenhagen Accord)
2. 40% cumulative electric power installed capacity for the fossil fuel based energy resources by 2030 (conditional and transfer of technology and international finance)
3. Additional carbon sink of 2.5–3 billion tones of CO<sub>2</sub>e through additional forest cover.

India’s NDC was labeled as not being ambitious enough. However, in view of India’s development challenges, and less ambitious NDCs by developing countries (EU, USA, China, and others), India’s NDC is better than many big polluters and especially USA, EU and China.<sup>8</sup> It is projected that India will over achieve its NDC targets

7 India’s INDC, <http://www4.unfccc.int/ndcregistry/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf>

8 India’s INDC is fair, and its renewable energy and forestry targets are ambitious, CSE,30thth September 2015, down to earth <http://www.downtoearth.org.in/coverage/climate-change-package-51338>

by 2030.<sup>9</sup> India should use this opportunity to provide leadership and encourage ramping up in ambitions of other countries. For this strategic engagement with global community there could not be a better opportunity, which is created by the withdrawal of US from Paris Agreement.

India has taken a range of actions to achieve its INDC. The continuing rapid growth in renewable energy in India combined with sustained reductions in coal imports and a slow down in coal development is a strong indication that the low carbon transformations in India's energy supply sector is gathering momentum. However, India's NDC does not yet reflect these developments. Under current policies, with the targeted 175 GW of renewable power capacity to be reached by 2022, India is already set to over achieve its 2030 NDC emissions intensity target.<sup>10</sup>

India is on a cusp of a change that can be transformative given there is a global commitment to fulfill the pledges on finance, technology and capacity building. India is highly vulnerable to climate change and expedited action on climate is in its own national interest, and a global cooperation enabling India to achieve its climate commitments, will not only help India but will help achieve aims of the Paris Agreement globally. Given these conditions are fulfilled; India must go beyond its international commitments, which will reduce vulnerability of people, ecosystem and institutions and developing a low carbon future.

However, in India, the discussion on pathways to achieve the goals have, over the past year, become the domain of central- and state-level bureaucrats who, perhaps because of competing priorities, have shown little ability and inclination to challenge the status quo, devise new partnerships and generate solutions.<sup>11</sup> India has though done reasonably well in mitigation (avoiding emissions, improving energy efficiency in various sectors, increased energy from renewable sources etc.). However, progress in adaptation, loss and damage, reduction in social vulnerability including through better education and awareness

9 Climate Action Tracker, 15th May 2017, <http://climateactiontracker.org/countries/india.html>

10 *ibid*

11 One year since the SDGs, how committed is India's Parliament, Mona Mishra, 20th September 2016, the Huffington Post, [http://www.huffingtonpost.in/mona-mishra/one-year-since-the-sdgs-how-committed-is-the-indian-parliament\\_a\\_21474664/](http://www.huffingtonpost.in/mona-mishra/one-year-since-the-sdgs-how-committed-is-the-indian-parliament_a_21474664/)

has been awfully slow.<sup>12</sup> These important dimensions have been pushed to margin, while India takes concrete steps to maintain its economic growth with reduced emissions. The paper takes a look at progress on SDG13 targets and indicators.

## **Target SDG13.1**

### **Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries**

#### **National Indicator:**

*Number of states with strategies for enhancing adaptive capacity and dealing with climate extreme weather events.*

#### **Global Indicators**

##### **13.1.1: Number of deaths, missing persons and directly affected persons attributed to disaster per 100,000 population**

India's vulnerability profile is increasing. While there are different and conflicting data in terms of number of deaths, missing persons and directly affected population, which also probably is far from the true estimate of the disasters impacts. India was among the top three most disaster hit countries in 2015, with economic losses amounting to \$ 3.30 billion (UNISDR, 2016). The report of the UNISDR titled "Human Cost of Weather Related Disaster," says that India has 19 disaster events including floods, droughts and heat waves in 2015.<sup>13</sup> India and China dominate the league of table of the disaster hit people accounting for 3 billion affected during the 1995-2015, comprising 75% of the globally affected population of 4.1 billion. Of the 27.5

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12 The slow progress on adaptation is mainly due to lack of finances. The government of India has allocated a meager sum of INR 3.5 billion for the National Adaptation Fund for the financial years 2015-16 and 2016-17, which is highly inadequate given the fact that after cyclone Ailasunderbans was allocated INR 5 billion. Environmentalists consider this amount highly inadequate, for details visit, India's budget for climate adaptation is inadequate, 11th April 2016, Livemint, <http://www.livemint.com/Politics/xBROsTMzIdFlvMDh4YJoFN/Indias-budget-for-climate-adaptation-inadequate.html>

13 The number of only exceeded by China (26 events) and the US (21 events). India is followed by cyclone hit Philippines (15) and Indonesia (11 events)

million people affected by floods in 2015, 16.4 were in India. India also witnessed 2248 deaths in 2015 due to heat waves.<sup>14</sup>

In terms of absolute numbers of affected people, India was the second highest after China with 805 million people affected in the last two decades. However, India is fourth globally in relative mortality—deaths per million inhabitants—after Venezuela, Russia and China. The low death rate, in spite of very high absolute numbers of affected population, is because of the ratio with the overall gigantic Indian population.<sup>15</sup>

However, even these data are highly contested. Though the number of deaths due to disasters has decreased, on an average 20,000 lives are lost in India every year due to natural disasters.<sup>16</sup> More than 2000 persons every year die to exposure to extreme cold or heat and a similar number of even more due to lightning.<sup>17</sup> Data varies from agency to agency even within the government. The Union Home Ministry admits a very small fraction of these deaths. According to the Ministry, in 2015, 1543 persons died in India due to natural disasters, which damaged about 1.65 M households and affected crops over an area 3.357 M ha.<sup>18</sup>

A study by Food and Agricultural Organization (FAO) say more than 22 per cent of the damages caused by natural hazards—such as drought, floods, storms or tsunamis—are accounted for by the agriculture sector. According to study, during drought period, agriculture absorbs up to 84 percent of all economic impacts. Within the agricultural sector, 42 per cent of assessed losses were that of crops (\$13 billion), with floods being the main culprit, responsible for 60 per cent of crop damages, followed by storms (23 per cent of crop damages).<sup>19</sup>

14 Tragedies of 2015: Havoc caused due to natural disasters, YESHA KOTAK | Thu, 31 Dec 2015-08:00am , Mumbai , DNA webdesk, <http://www.dnaindia.com/world/report-tragedies-of-2015-havoc-caused-due-to-natural-disasters-2157547>

15 Natural disasters cost India \$3.30bn in 2015: Here's why we should be very worried, ShreerupaMitra-Jha, 12th February, 2016, <http://www.firstpost.com/india/natural-disasters-cost-india-3-30bn-in-2015-heres-why-we-should-be-very-worried-2622940.html>

16 From 25066 in 2010, it has come down to 20201 in 20114, Fewer People Have Died in the Last 5 Years Due to Natural Calamities, DevanikSaha, 05/12/2015 The Wire, <https://thewire.in/16766/fewer-people-have-died-in-the-last-5-years-due-to-natural-calamities/>

17 ibid

18 At least 1,543 deaths in 2015-16 due to disasters, New Delhi, <http://www.livemint.com/Politics/J7pW41xsgeeq8ysu19sel/At-least-1543-people-killed-in-201516-due-to-disasters.html>

19 <http://www.downtoearth.org.in/news/fao-quantifies-impact-of-natural-disasters-on-agriculture--49026>

The global assessment report (GAR) 2015, produced by the UN Office for Disaster Risk Reduction (UNISDR) says India's average annual economic loss due to disasters is estimated to be \$9.8 billion. This includes more than \$7 billion loss on account of floods.<sup>20</sup> A total of 98.6 million people were affected by natural disasters in 2015 of which 92 percent were caused by climate change buoyed by a powerful El Niño impact.<sup>21</sup>

### ***13.1.2: Number of countries that adopt and implement national disaster risk reduction strategies in line with the Sendai Framework for Disaster Risk Reduction 2015-2030***

India's Prime Minister released first National Disaster Management Plan (NDMP) in June 2016. On this occasion the United Nations representative said "India was one of the first countries to present a plan to implement the four priorities for action of the Sendai Framework." At UN's Disaster Risk Reduction meeting at Cancun in May 2017, India was the only country, which has drawn a comprehensive national plan on its roadmap to fully achieve the Sendai framework by 2030 and a short-term goal by 2020.<sup>22</sup> The country faces a formidable range of both man-made and natural hazards as evidenced by the drought affecting over 300 million people.<sup>23</sup>

Among the Indian states Assam became the first state to adopt National Disaster Management Plan in December 2016.<sup>24</sup> It is reported that the Union Home Ministry and agencies like the NDMA, NDRF and the National Institute of Disaster Management (NIDM) are sharing long-term measures and training with states for better preparedness. According to the Ministry, during the last financial year, an amount of Rs.8,756 crore was released to different states from the

20 <http://timesofindia.indiatimes.com/india/Disasters-cost-India-10bn-per-year-UN-report/article-show/46522526.cms>

21 <http://www.firstpost.com/india/natural-disasters-cost-india-3-30bn-in-2015-heres-why-we-should-be-very-worried-2622940.html>

22 India first country to have national plan for disaster risk reduction, Times of India, May 24, 2017, <http://timesofindia.indiatimes.com/india/india-first-country-to-have-national-plan-for-disaster-risk-reduction/articleshow/58829054.cms>

23 <http://indianexpress.com/article/india/india-news-india/national-disaster-management-plan-neglects-women-disabled-and-lower-castes-aid-workers-2841384/>

24 Assam first state to reduce disaster risk, Sendai framework being implemented, Avishek Sengupta, Guwahati, Dec. 5, [https://www.telegraphindia.com/1161206/jsp/frontpage/story\\_123248.jsp](https://www.telegraphindia.com/1161206/jsp/frontpage/story_123248.jsp)

State Disaster Response Fund in addition to release of Rs.12,452 crore from National Disaster Response Fund to the states severely affected by natural disasters.<sup>25</sup> However, the states complain lack of appropriate IMD infrastructure, rainfall and weather monitoring stations and lack of forecasts providing information down to the village level, rather than giving it for regions, and lack of IMD and ISRO information in a user-friendly and understandable manner, which is useful for states.<sup>26</sup>

The central government has allocated Rs 55,000 crore(over \$8 billion) for five years from 2015-20 to all states for disaster management.<sup>27</sup> According to the Government of India, at least 38 cities lie in high-risk seismic zones and almost 60 per cent of the landmass of the subcontinent is immensely vulnerable to earthquakes or other natural disasters. While the Indian government has embarked upon building urban infrastructure across the country and develop 100 smart cities over the coming years, it is important that cities and infrastructure being built take into account the topography and vulnerability of the area to various hazards.<sup>28</sup>

There are several problems in the National Disaster Management Plan. First, it fails to lay down a clear and practical roadmap. It is too generic in its identification of the activities to be undertaken by the central and states governments for disaster risk mitigation, preparedness, response, recovery, reconstruction, and governance. Second, the plan refrains from providing a time frame for undertaking these activities beyond vaguely prescribing that these must be taken up in short, medium, mid- and long-term basis. Third, the plan does not project the requirement of funds needed for undertaking these activities, nor does it provide any clue as to how funds shall be mobilized for this purpose. The plan further does not provide any framework for monitoring and

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25 This was reported in a Conference organized in Delhi in 2016 to review preparedness for south west monsoon, At least 1,543 deaths in 2015-16 due to disasters, New Delhi, <http://www.livemint.com/Politics/J7pW41xsgeeq8sysu19sel/At-least-1543-people-killed-in-201516-due-to-disasters.html>

26 ibid

27 India government to convene high level meeting for disaster risk reduction, Times of India, Mar 21, 2017, <http://timesofindia.indiatimes.com/india/government-to-convene-high-level-meeting-for-disaster-risk-reduction/articleshow/57756231.cms>

28 Developing disaster-proof cities, The Indian Express, September 26, 2015, <http://indianexpress.com/article/india/india-others/developing-disaster-proof-cities/>

evaluation of the plan.<sup>29</sup> NGOs feel that India's new plan to tackle disasters fails to address the special needs of vulnerable groups, which could lead to millions of women, children, disabled and elderly people as well as lower caste and tribal communities being put at further risk.<sup>30</sup>

A study of State Disaster Management Plans of five states, highlighted a number of gaps viz. clarifying responsibilities among various nodal agencies, considering all stages of disaster management cycle equally, as opposed to the current emphasis on response and relief after the disaster, adequately incorporate the socio-economic vulnerability of different groups, such as women and the very poorest people into vulnerability analysis, and consider the additional risks that climate change will bring to the vulnerable populations.<sup>31</sup> The disaster management plans also fail to take lessons from the experiences of Community based disaster management approaches world over, and are too dependent on official mechanisms.

One of the fundamental problems is the lack of appropriate vulnerability assessments. Most of the state plans are based on the Vulnerability Atlas of India.<sup>32</sup> This covers entire landmass of India with macro level analysis of exposure to earthquakes, cyclones, floods, wind speed, but does not include slow onset disasters such as droughts, sea level rise.<sup>33</sup> This is helpful but limited to understand the vulnerability of state at micro-level.

### ***13.1.3: Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with the national disaster risk reduction strategies***

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29 The new National Disaster Management Plan has several flaws, PG DharChakrabarti, 15th June, 2016, <http://www.hindustantimes.com/analysis/the-new-national-disaster-management-plan-has-several-flaws/story-LrHOFHXg9gwrTogYjXJDrK.htm>

30 India's plan to tackle disasters neglects women, disabled and lower castes: aid workers, Reuters, New Delhi, 8th June 2016, <http://indianexpress.com/article/india/india-news-india/national-disaster-management-plan-neglects-women-disabled-and-lower-castes-aid-workers-2841384/>

31 Strengthening Disaster Risk management in India; A review of five states disaster management plans, CDKN and ODI, July 20016.

32 Building Material and Technology Promotion Council (2007), Vulnerability Atlas of India, New Delhi, GOI

33 Strengthening Disaster Risk management in India; A review of five states disaster management plans, CDKN and ODI, July 20016

As far as local governments are concerned, they have almost no role in managing climate change and disasters. This is ironical as world over these are local governments who are leading cities transition. At COP 21 at Paris, more than 400 cities joined the compact of Mayors. Besides a number sub-national governments (states) in the world have gone beyond national commitments to make states 2 degrees compliant. However, India is yet to take any significant steps in this direction. The 73rd and 74th Constitutional Amendment Act, 1992, which aimed at empowering local rural and urban authorities including the right to raise resources, pursue social justice policies and contribute to economic development, largely remains un implemented. A Ministry of Home Affairs circular dated 23rd June, 2015 with the subject line Implementing the Sendai Framework and Action to be taken by district magistrates, addressed to all states, does not envision any role for the local bodies except ensuring that building bye laws are strictly followed.<sup>34</sup> The Journal of Integrative Environmental Sciences (Taylor and Francis, 2016) note that the power of town and city governments vary across states and a significant decentralization of governance has not occurred. Therefore, cities institutional and financial capacities remain weak.<sup>35</sup> Despite this weakness, several cities in India have taken strong initiatives in sectors ranging from climate management to transport including Delhi, Hyderabad, Kolkata, Mumbai and Surat.<sup>36</sup> Several other cities have established partnership with the global cities that go beyond cultural and citizen exchange.<sup>37</sup> However, largely speaking, disaster management plans in almost all the states do not have any role for the communities also, except involving them in training to save themselves during disasters. This is ironical as they are the ones who reach the venue in any disaster.

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34 Ministry of Home Affairs, GOI, No.50-21/2015-DM III

35 Jan Beerman, Appukuttan Damodaran, Kirsten Jorgensen and Miranda A. Schreurs (2016) Climate action in Indian cities; an emerging new research area, , Journal of Integrative Environmental Sciences.

36 ibid

37 ibid, Pune with Bremen, Germany on biogas and waste management, Ahmadabad with Valladolid, Spain on ecological heritage preservation, Guntur with Bologna, Italy and Vaxjo, Sweden on implementing Eco-Budget etc.

## Target 13.2

### Integrate climate change measures into national policies, strategies and planning

#### Global Indicator

*13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production (including a national adaptation plan, nationally determined contribution, national communication, biennial update report or other)*

#### National Indicators

- 1. Pre-2020 action Achievements of pre-2020 goals as per countries' priorities*
- 2. Achievement of Nationally Determined Contribution (NDC) goals in post -2020 period.*

India's total installed energy capacity in May 2017 stood at 3,29,205 MW with renewable energy installed capacity of 57,260 MW (17.4% of the total) and Hydro installed capacity at 44,594 MW (13.6% to total installed).<sup>38</sup> With a target of 175 GW of RE capacity by 2022 steady gains are being made at the solar front. India had a total of 9 GW of solar capacity, including rooftop projects, as of December 2015. During 2016, the country added about 4 GW of solar capacity—the fastest pace till date. During 2017, the solar sector is likely to add close to 9 GW of capacity taking its overall capacity to 18 GW and the country into the league of nations such as China, the US and Japan in terms of solar capacity.<sup>39</sup> India is already the 5th largest wind energy producer in the world with an installed capacity of 25GW.

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38 Power Sector at a Glance, Ministry of Power, <http://powermin.nic.in/en/content/power-sector-glance-all-india>

39 India's solar capacity may double to 18GW this year, Shailaja Sharma, Livemint Mumbai, 6th January 2017, <http://www.livemint.com/Industry/DaBUAGSAWbD4ObK5XxyzJ/Indias-solar-capacity-may-double-to-18-GW-this-year.html>

India's effort in integrating climate change measures in national policies have been focused on achieving pre 2020 commitment and its Nationally Determined Contribution (NDC) as also reflected by the national indicators. India agreed in Copenhagen (2009) to reduce its energy intensity by 20-25% by 2020 over 2005 level.<sup>40</sup> Through its INDC (2015) it voluntarily committed to reduce its energy intensity by 30-35% by 2030 (over 2005 level), achieve 40% cumulative electric power installed capacity for the fossil fuel based energy resources by 2030 (conditional and transfer of technology and international finance), and create an additional carbon sink of 2.5–3 billion tones of CO<sub>2</sub>e through additional forest cover.<sup>41</sup> While India has done remarkably well on mitigation, adaptation has attracted less attention nationally. The National Plan on Climate Change (NAPCC, 2008) and State Action Plan/s on Climate Change (mainly looking at adaptation) are constrained by financial support, appropriate institutional structure, meaningful monitoring and a clear road map, struggle to find a way forward.<sup>42</sup> This contradicts India's position and emphasis on adaptation in the UNFCCC negotiations, as well as its NDC, which prioritizes building resilience to climate change impacts.

The Climate Action Tracker rates India's NDC as medium in contributing to achievement of the global goal. It also says that India's current policies are enough and India does not need to put new policies to achieve its NDC commitment.<sup>43</sup> This is a result of aggressive progress in power but also modest ambitions in the INDC. The Draft Electricity Plan projects that despite the increasing electricity demand, no new coal capacity apart from the capacity already under construction (50 GW)

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40 India Announces Plan to Slow Emissions, 3rd December 2009, New York Times, <http://www.nytimes.com/2009/12/04/world/asia/04india.html>

41 India's INDC, <http://www4.unfccc.int/ndcregistry/PublishedDocuments/India%20First/INDIA%20INDC%20TO%20UNFCCC.pdf>

42 A study conducted by IFMR, which evaluated progress of the NAPCC suggested a number of improvements to be made. It suggested that Missions on solar energy and enhanced energy efficiency have achieved greater progress compared to other missions which have qualitative goals, for more details please visit [http://www.ifmrlead.org/wp-content/uploads/2015/10/NAPCC/REPORT\\_NAPCC%20Progress%20and%20Eval%20Report.pdf](http://www.ifmrlead.org/wp-content/uploads/2015/10/NAPCC/REPORT_NAPCC%20Progress%20and%20Eval%20Report.pdf). For progress on NAPCC and SAPCC, please visit Much ado about state action plans; they are business as usual, Ajay K Jha, <https://www.fairclimate.com/library/docs/5/Much%20Ado%20about%20State%20Action%20Plan%20on%20Climate%20Change.pdf>

43 Climate Action Tracker, 15th May 2017, <http://climateactiontracker.org/countries/india.html>

would be needed after 2022.<sup>44</sup> CAT projects that under the current policies, the non-fossil power generation capacity will reach 38-48% in 2030, corresponding to a 25-31% share of electricity generation and India's emissions intensity in 2030 will be 42-45% below 2005 levels.

India has 50 GW of coal power capacity is under construction in India, with another 178 GW in the permitting pipeline.<sup>45</sup> If all of this come online, that would result in considerable over capacity, greater lock-in of carbon intensity power infrastructure and additional financial burden.

The target to create an additional carbon sink of 2.5–3 GtCO<sub>2</sub>e through additional forest and tree cover by 2030 cumulative, representing an average annual carbon sink of 167-200 MtCO<sub>2</sub>e over the period of 2016-2020. CAT estimates that over half of this target could be achieved by the Green India Mission, which is expected to enhance annual carbon sequestration by about 100 MtCO<sub>2</sub>e.<sup>46</sup> However, critics doubt availability of land (to be afforested and reforested) for such scale of carbon sequestration.

As regards the long term goal of keeping per capita emissions below that of developed countries (which India's Prime Minister committed at G8+5 Summit in Germany, 2007), meeting this pledge doesn't require any new emissions reduction compared to current policy projections upto 2030. During the period 2016-2030, India's population is projected to increase by 13%, reaching 1.49 billion.<sup>47</sup> Over the same period, per capita emission will reach around 3.4 – 3.6 tCO<sub>2</sub>e (excluding LULUCF) by 2030, which would be around 30% below the world average in 2013.<sup>48</sup>

However, the question that begs answer is since independence our installed energy capacity has increased by over 240 times (from 1362 MW to 3,29,205 MW), per capita availability has increased by over 67 times (from 16.3 KWh to 1100 KWh) and population has increased by less than 4 times (320 million to 1320 million), and more

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44 Draft National Electricity Plan, Central Electricity Authority, Ministry of Power, [http://www.cea.nic.in/reports/committee/nep/nep\\_dec.pdf](http://www.cea.nic.in/reports/committee/nep/nep_dec.pdf)

45 IEA, 2016

46 Green India Mission, National Action Plan on Climate Change, GOI 2015

47 World Economic Outlook, 2016

48 World Bank, 2017

than 300 million people still do not have access to electricity.<sup>49</sup> In that case does capacity increase results in equitable distribution?

## **Target 13.3**

**Improve education, awareness- raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning**

### **Global Indicators**

***13.3.1: Number of countries that have integrated mitigation, adaptation, impact reduction and early warning into primary, secondary and tertiary curricula***

***13.3.2: Number of countries that have communicated the strengthening of institutional, systemic and individual capacity building to implement adaptation, mitigation and technology transfer, and development actions***

### **National Indicator**

***Number of States that have integrated climate mitigation and adaption in education curricula and outreach programs***

Not many efforts are seen to integrate climate change and disaster education in the school curriculum and other outreach programmes. There is huge dearth of relevant information so as to improve peoples' understanding on mitigation and adaptation. There is hardly any material available in local dialect. Beside National Action Plan on Climate Change, there is hardly any policy document available even in the national language. None of the states have made any efforts to translate State Action Plan in even national language. However, some advertisements promoted by Ministry of Environment Forest and Climate Change and Ministry of Power, and Renewable energy feature on radio, television and newspapers. Among the institutional efforts on public education, a major initiative by the Ministry of Environment, Forest and Climate Change is running a Science Express train. It covers about 20 states and 70 cities and makes people aware of the implications of global warming and the measures, which may be taken at both local

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49 SoumyaDutta, Energy News, May 2017, PAIRVI

and national level to tackle the common threat of climate change.<sup>50</sup>

### **Target 13.a**

**Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly \$100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible**

*Indicator 13.a.1 Mobilized amount of United States dollars per year starting in 2020 accountable towards the \$100 billion commitment*

NOT APPLICABLE FOR INDIA

### **Target 13.b**

**Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and Small Island developing States, including focusing on women, youth and local and marginalized communities**

*Indicator 13.b.1 Number of least developed countries and small island developing States that are receiving specialized support, and amount of support, including finance, technology and capacity-building, for mechanisms for raising capacities for effective climate change-related planning and management, including focusing on women, youth and local and marginalized communities.*

India has been able to develop cooperation with several countries, which will be helpful in achieving its NDC. While many of these collaborations are in the field of renewable energy, these also include collaborations on infrastructure, smart city, make in India, skill India and other flagship programmes.

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50 [http://economictimes.indiatimes.com/articleshow/49377967.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](http://economictimes.indiatimes.com/articleshow/49377967.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)

India and Germany agreed on the India Germany Climate and Renewable Energy Alliance, wherein Germany has committed to providing an assistance of over Euro 1 billion for India's Green Energy Corridor and a new assistance package of over 1 billion Euros for solar projects in India in Oct 2015. Both countries welcomed the Memorandum of Understanding on an Indo-German Solar Energy Partnership based on concessional loans in the range of 1 billion Euros over the next 5 years.<sup>51</sup> India has also signed a Memorandum of Understanding in 2016 with Germany to clean Ganga. The agreement will allow Indo-German knowledge exchange on strategic river basin management issues, effective data management system and public engagement. German contribution to the three-year-long project will be Rs 22.5 crore.<sup>52</sup> A Memorandum of Understanding between the Government of India and the Government of the United States of America was signed in June 2016 to enhance cooperation on energy security, clean energy and climate change.<sup>53</sup> The EU and India have adopted a Joint Declaration on a clean energy and climate partnership.<sup>54</sup> The European Investment Bank has already provided loans for more than Euro 1.2 billion to support implementation of energy and climate related projects in India.<sup>55</sup>

India and Norway have decided to target innovation projects in companies in the field of renewable energy. A joint call between the Research Council of Norway and Department of Science and Technology of India was launched in February 2017. The call is for USD 1 million, targeting innovation projects in companies collaborating with research institutions in the field of renewable energy.<sup>56</sup>

Foreign strategic investors have largely stayed away from the flurry of deal making in India's renewable energy sector, preferring

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51 <http://www.thehindu.com/news/national/india-germany-launch-tieup-for-clean-energy/article7727601.ece>

52 <http://www.downtoearth.org.in/blog/india-and-germany-sign-agreement-for-cleaning-ganga-53714>

53 <http://pib.nic.in/newsite/PrintRelease.aspx?relid=145902>

54 [https://ec.europa.eu/clima/news/articles/news\\_2016033101\\_en](https://ec.europa.eu/clima/news/articles/news_2016033101_en)

55 [http://economictimes.indiatimes.com/articleshow/52728498.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](http://economictimes.indiatimes.com/articleshow/52728498.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)

56 India Norway discuss innovation projects in renewable energy, India Today, February 14, 2017 <http://indiatoday.intoday.in/story/india-norway-discuss-innovation-projects-in-renewable-energy/1/882869.html>

instead to build from the ground up. Out of the \$2.32 billion worth of mergers and acquisitions in India's renewable energy sector in the last 15 months, foreign companies have bought assets worth just \$290.6 million, while Indian companies have acquired \$2.03 billion worth of assets.<sup>57</sup>

## Conclusion

Despite the fact that India has done well on many sustainable development goals and climate goals, much is yet desired to achieve sustainable development in the real sense. First and foremost is that it needs a clear road map to implement the SDGs with identified roles for the state governments, and a monitoring mechanism to measure progress. It also has to draw a quick plan to overcome lack of quality data. Public education and awareness are second to none in terms of invoking agency of people in achievement of the SDGs. The SDGs are more complex than to be achieved by the policies and government programmes. The countries need to harness energy, understanding and participation of all stakeholders including the NGOs to make sustainable development a reality.

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57 Foreign investors giving M&A deals in India's renewable energy, Livemint, April 21, 2017, <http://www.livemint.com/Industry/Q5Florefv9lbFwnMQhsXpO/Foreign-investors-giving-MA-deals-in-Indias-renewable-ener.html>





Beyond Copenhagen Collective (BCPH) is a coalition of more than 40 organizations and networks working on the issues of sustainable development, environment, sustainable agriculture etc. We have been extensively engaged with India's response to Climate Crisis, Domestic Action and its position in International negotiation processes under the United Nations Framework Convention on Climate Change, United Nations Commission on Sustainable Development, United Nations Convention on Biological Diversity, and United Nations General Assembly. We have tried to attract global attention on due consideration of agriculture and food security in climate change negotiations, state responsibility and accountability for climate justice, poverty and inequality, sustainable development and global politics over climate change and sustainable development

Organizations and networks part of the BCPH collective bring with them varying experiences and expertise, ranging from grassroots works with farmers and peasant communities to engaging with policy makers and the policy through policy analysis, advocacy, lobbying, engaging with the media through their sensitization and orientation; and undertaken documentation and scientific exploration in climate change, sustainable agriculture and food security. The focus of our work emanates from the understanding that there is an urgency to work in collaborative action on climate change and climate justice issues. The collective proposes to address these issues through a variety of actions at local, state/provincial, national and global level.