

Climate Change Community



Community Update No. 71: 1st December, 2015 In this Issue

FROM THE RESOURCE PERSON

Dear Members,

We are presenting the 71st Edition of the Monthly Community Update of the Climate Change Community of Practice (CoP), today.

The 21st Conference of Parties (COP 21) to the UN Framework Convention on Climate Change (UNFCCC) formally opened in Paris yesterday and will conclude on Friday, 11th December, 2015. As in the past, we will be publishing regular updates of the Summit commencing today. I hope you find these useful and enlightening.

The Lima Conference (COP20) held last year in December, 2014 was able to lay the groundwork for Paris by capturing progress made in elaborating the elements of a draft negotiating text for the 2015 agreement and adopting a decision on Intended Nationally Determined Contributions (INDCs), including their scope, upfront information, and steps to be taken by the Secretariat after their submission.

The ADP Opening Plenary held on Sunday, 29th November, 2015 requested delegates to begin ADP 2-12 with one minute of silence in remembrance of the innocent victims of terrorism and the late Maurice Strong, one of the founding fathers of several multilateral environmental processes. It was mentioned that reaching a Paris agreement that enables the world to live "**in a climate of peace and in harmony with nature**" is the best way to honor those who have passed away.

This year the daily updates to members regarding the salient issues being discussed at COP21 being held at Paris will be cross-posted with the Disaster Management Community.

We thank you for your continued cooperation and support to this unique knowledge sharing platform facilitated by UNDP which is now in its 7th year of continuous operation and increasing from strength to strength.

Thanks & best regards, Ramesh Kumar Jalan Resource Person & Moderator Climate Change Community, Solution Exchange-India United Nations Development Programme, New Delhi

DEVELOPMENT IN THE SECTOR

Africa 2030 : Roadmap for a Renewable Energy Future .

The roadmap is available at:

http://www.irena.org/DocumentDownloads/Publications/IRENA Africa 2030 REmap 2015 low-res.pdf

African countries need to meet fast-growing energy demand and extend modern energy services to more communities while also improving people's health and ensuring long-term sustainability. The continent could meet nearly a quarter of its energy needs through the use of indigenous, clean, renewable energy by 2030, according to this report by the International Renewable Energy Agency (IRENA).

Africa 2030 – part of IRENA's global REmap analysis – provides a comprehensive roadmap for Africa's energy transition. The report identifies options amounting to nearly 10 exajoules – the equivalent of more than 341 million tonnes of coal – for sustainable development through renewable energy. Roughly half of this would come through biomass-based heat applications, which will progressively displace unsustainable and unhealthy traditional biomass combustion.

Renewable energy capacity additions could increase the share of modern renewable energy technologies in the power sector to 50% by 2030, reducing carbon dioxide emissions by more than 310 megatonnes. Amid record-low electricity prices from solar and wind energy, developing such projects has become more cost-effective than ever before.

The report recommends 14 actions to accelerate the continent's renewable energy uptake. These include adopting enabling policies, a regulatory framework to catalyse investment, measures to attract investors, and promoting off-grid renewable solutions to increase energy access and reduce poverty.

Africa 2030 is built on a country-by-country assessment of supply, demand, renewable energy potential, and technology prospects. At the global level, REmap 2030 provides a roadmap to double the share of renewables in the world's energy mix.

The report was released on the sidelines of the South Africa International Renewable Energy Conference (SAIREC) in October 2015, themed "RE-energising Africa".

How the industrial food system contributes to the climate crisis : Between 44% and 57% of all GHG emissions come from the global food system

The article is available at : <u>https://www.grain.org/article/entries/5102-food-sovereignty-5-steps-to-cool-the-planet-and-feed-its-people</u>.

Deforestation: 15-18% : Before the planting starts, the bulldozers do their job. Worldwide, industrial agriculture is pushing into savannas, wetlands and forests, ploughing under huge amounts of land. The FAO says the expansion of the agricultural frontier accounts for 70-90% of global deforestation, at least half of that for the production of a few agricultural commodities for export. Agriculture's contribution to deforestation thus accounts for 15-18% of global GHG emissions.

Farming: 11-15% : It is generally acknowledged that farming itself contributes 11-15% of all greenhouse gasses produced globally. Most of these emissions result from the use of industrial inputs, such as chemical fertilisers and petrol to run tractors and irrigation machinery, as well as the excess manure generated by intensive livestock keeping.

Transport: 5-6% : The industrial food system acts like a global travel agency. Crops for animal feed may be grown in Argentina and fed to chickens in Chile that are exported to China for processing and eventually eaten in a McDonald's in the US. Much of our food, grown under industrial conditions in faraway places, travels thousands of kilometres before it reaches our plates. We can conservatively estimate that the transportation of food accounts for a quarter of global GHG emissions linked to transportation, or 5-6% of all global GHG emissions.

Processing & packaging: 8-10% : Processing is the next, highly profitable, step in the industrial food chain. The transformation of foods into ready-made meals, snacks and beverages requires an enormous amount of energy, mostly in the form of carbon. So does the packaging and canning of these foods. Processing and packaging enables the food industry to stack the shelves of supermarkets and convenience stores with hundreds of different formats and brands, but it also generates a huge amount of greenhouse gas emissions – some 8 to 10% of the global total.

Freezing & Retail: 2-4% : Refrigeration is the lynchpin of the modern supermarket and fast food chains' vast global procurement systems. Wherever the industrial food system goes, so do cold chains. Considering that cooling is responsible for 15 percent of all electricity consumption worldwide, and that leaks of chemical refrigerants are a major source of GHGs, we can safely say that the refrigeration of foods accounts for some 1-2% of all global greenhouse gas emissions. The retailing of foods accounts for another 1-2%.

Waste: 3-4% : The industrial food system discards up to half of all the food that it produces, thrown out on the long journey from farms to traders, to food processors, and eventually to retailers and restaurants. A lot of this waste rots on garbage heaps and landfills, producing substantial amounts of GHGs. **Between 3.5-4.5% of global GHG emissions come from waste, and over 90% of these are produced by materials originating within the food system.**

Food sovereignty: 5 steps to cool the planet and feed its people.

The article is available at : <u>https://www.grain.org/article/entries/5102-food-sovereignty-5-steps-to-cool-the-planet-and-feed-its-people</u>

1. **Take care of the soil :** The food/climate equation is rooted in the earth. The expansion of unsustainable agricultural practices over the past century has led to the destruction of between 30-75% of the organic matter on arable lands, and 50% of the organic matter on pastures and prairies. This massive loss of organic matter is responsible for between 25% and 40% of the current excess CO2 in the earth's atmosphere. But the good news is that this CO2 that we have sent into the atmosphere can be put back into the soil, simply by restoring the practices that small farmers have been engaging in for generations. If the right policies and incentives were in place worldwide, soil organic matter contents could be restored to pre-industrial agriculture levels within a period of 50 years – which is roughly the same time frame that industrial agriculture took to reduce it. This would offset between 24-30% of all current global greenhouse gas emissions.

2. Natural farming, no chemicals : The use of chemicals on industrial farms is increasing all the time, as soils are further depleted and pests and weeds become immune to insecticides and herbicides. Small farmers around the world, however, still have the knowledge and the diversity of crops and animals to farm productively without the use of chemicals by

diversifying cropping systems, integrating crop and animal production, and incorporating trees and wild vegetation. These practices enhance the productive potential of the land because they improve soil fertility and prevent soil erosion. Every year more organic matter is built up in the soil, making it possible to produce more and more food.

3 Cut the food miles, and focus on fresh food : The corporate logic that results in the shipment of foods around the world and back again, makes no sense from an environmental perspective, or any other perspective for that matter. The global trade in food, from the opening of vast swaths of lands and forests to produce agricultural commodities to the frozen foods sold in supermarkets, is the chief culprit in the food system's overweight contribution to GHG emissions. Much of the food system's GHG emissions can be eliminated if food production is reoriented towards local markets and fresh foods, and away from cheap meat and processed foods. But achieving this is probably the toughest fight of all, as corporations and governments are deeply committed to expanding the trade in foods.

4. Give the land back to the farmers, and stop the mega plantations : Over the past 50 years, a staggering 140 million hectares – the size of almost all the farmland in India – has been taken over by four crops grown predominantly on large plantations: soybeans, oil palm, rapeseed and sugar cane. The global area under these and other industrial commodity crops, all of them notorious emitters of greenhouse gases, is set to further grow if policies don't change. Today, small farmers are squeezed onto less than a quarter of the world's farmlands, but they continue to produce most of the world's food – 80% of the food in non-industrialised countries says the FAO. Small farmers produce this food far more efficiently than big plantations, and in ways that are better for the planet. A worldwide redistribution of lands to small farmers, combined with policies to help them rebuild soil fertility and policies to support local markers, can reduce GHG emissions by half within a few decades.

5. Forget the false solutions, focus on what works : There is growing recognition that food is central to climate change. The latest IPCC reports and international summits have recognised that food and agriculture are major drivers of GHG emissions and that climate change poses tremendous challenges to our capacity to feed a growing global population. Yet there has been zero political will to challenge the dominant model of industrial food production and distribution. Instead, governments and corporations are proposing a number of false solutions. There is the empty shell of Climate Smart Agriculture, which is essentially just a rebranding of the Green Revolution. There are new, risky technologies such as crops genetically engineered for drought resistance or large scale geo-engineering projects. There are mandates for biofuels, which are driving land grabs in the South. And there are carbon markets and REDD+ projects, that essentially allow the worst GHG offenders to avoid cuts in emissions by turning the forests and farmlands of peasants and indigenous peoples into conservation parks and plantations. None of these "solutions" can work because they all work against the only effective solution: a shift from a globalised, industrial food system governed by corporations to local food systems in the hands of small farmers.

Redistributing up: how fuel subsidy policy has short-changed Bihar

The publication is available at: <u>http://www.iisd.org/commentary/re-distributing-how-fuel-subsidy-policy-has-short-changed-bihar</u>

In the past decade, fuel subsidies have collectively represented the single largest social transfer administered by the central government, with the central government and associated public-sector enterprises **spending a total of Rs 447,771 crore subsidizing diesel, LPG and kerosene between FY 2011-12 and FY 2013-14 alone - equivalent to over four**

times the central budget allocation to the flagship National Rural Employment Generation Scheme (NREGS) public employment programme.

Building on our previous work on the spatial distribution of fuel subsidies in India, this note outlines how the state of **Bihar has consistently been the lowest per capita recipient of fuel subsidy transfers amongst all states and Union Territories**, providing aggregated data on total subsidy expenditure per capita and disaggregated data for diesel, LPG and kerosene subsidies.

It calculates the total additional transfer required to equalize the subsidy transfer received in Bihar and that received in selected states for the three years to March 2014, showing that were Bihar to receive a subsidy transfer equivalent to that received in Haryana (the highest per capita recipient among major states) for the three years to March 2014, this would require an additional (compensatory) transfer of Rs. 74,008 crore, or Rs 6,859 for every person in Bihar.

In order to achieve parity with Delhi, Bihar would require a transfer of Rs. 42,087 crore, or Rs 3,900 per person.

Is Antarctica Ice Melting or Growing : What is really going on with the polar ice caps?.

A recent study is available at : <u>http://www.ingentaconnect.com/content/igsoc/jog/pre-prints/content-ings_jog_15j071</u>

The article is available at: <u>https://www.climaterealityproject.org/blog/ice-ice-baby-antarctica-ice-melting-or-growing-part-2?utm_source=CRLemail-antarctica&utm_medium=email</u>

A recent study published in the Journal of Glaciology by a group of NASA researchers reporting that satellite data shows that, as a whole, Antarctica has been gaining – rather than losing – ice mass during the past two or more decades. The study is available at : http://www.ingentaconnect.com/content/igsoc/jog/pre-prints/content-ings jog 15j071 .

So was NASA and the IPCC wrong about Antarctica's ice loss? Is the Antarctic ice growing?

The short answer is best summarized by the title of Andrew Freedman's article on Mashable (which everyone should read): "<u>No, NASA has not reversed itself on the dangerous melting of Antarctica.</u>"

However, in less enlightened (or maybe honest) circles, the study's finding is being reported as a massive turnabout of previous research showing the continent to be shedding ice at an increasing rate.

What these reports usually are missing are several critical points:

- This is ONE NASA study. Other NASA studies say different and research continues. It is a mistake to simply assume that this one is right and the others are wrong.
- Even if the study is correct, it doesn't indicate that global climate change is not occurring. The increase in ice mass is the result of increased precipitation, which is the result of increased atmospheric water vapor, which is the result of increased global temperatures. (There are numerous other indicators that our climate is changing.)
- The study's lead author, <u>Jay Zwally of NASA's Goddard Space Flight Center in Maryland</u>, <u>agrees that the overall global rate of ice discharge into the oceans is increasing</u>. "The good news is that Antarctica is not currently contributing to sea level rise, but is taking 0.23

millimeters per year away," said Dr. Zwally. "But this is also bad news," he added. "If the 0.27 millimeters per year of sea level rise attributed to Antarctica in the IPCC report is not really coming from Antarctica, there must be some other contribution to sea level rise that is not accounted for."

• The lead author also notes that the state might be temporary. It could take only a few decades for the ice melt in Antarctica to outweigh the ice gains.

What's going on Antarctica?

According to this study, the gains in ice from increased precipitation in the continent's interior, particularly across the East Antarctic Ice Sheet, is enough to offset the melting occurring in the West Antarctic and Antarctic Peninsula.

However, the study does not contradict the troubling trends seen in Western Antarctica where there has been widespread loss of ice along the Bellingshausen and Amundsen Seas.

What this study really illustrates is how difficult it is for scientists to measure small changes in ice. Fortunately, NASA is developing new tools – due to launch in 2018 – that will help scientists more accurately measure long-term ice changes in Antarctica.

The research on this continues, but is hardly a reason for not taking action on climate today.

The Tough Realities of the Paris Climate Talks.

Find out more at: <u>http://www.nytimes.com/2015/11/04/opinion/the-tough-realities-of-the-paris-climate-talks.html</u>.

The tough realities of addressing Climate change during COP 21 in Paris are succinctly discussed in an article in the New York Times. The article is available at: <u>http://www.nytimes.com/2015/11/04/opinion/the-tough-realities-of-the-paris-climate-talks.html</u>

According to scenarios used by the United Nations Intergovernmental Panel on Climate Change, global **annual per capita emissions would need to fall from today's five metric tons to less than one ton by 2075, a level well below what any major country emits today and comparable to the emissions from such countries as Haiti, Yemen and Malawi.**

For comparison, current annual per capita emissions from the United States, Europe and China are, respectively, about 17, 7 and 6 tons.

The practical implication of this slow logarithmic dependence is that eliminating a ton of emissions in the middle of the 21st century will exert only half of the cooling influence that it would have had in the middle of the 20th century.

Assuming that the figures quoted in the above mentioned discussion are reasonable we have many issues to be concerns about. While the urgent need is to reduce the GHG emissions drastically, we have to do a lot more on adaptation strategies to protect the vulnerable sections of our society.

As has been highlighted by many reports in the recent months, the global community (especially the developed world) has do much more than that indicated by INDC by different countries.

Simply put the consumption of materials and energy has to be reduced by huge margins at the global level on a war footing and as soon as humanly possible.

The question is whether we have the necessary obligatory commitment to undertake the necessary steps.

Global Temperatures to Rise by 3 Degrees Celsius : Assuming countries would keep on their efforts after 2030, these could limit the long term temperature increase to around 3 degrees Celsius.

Find out more at: <u>http://www.ndtv.com/world-news/global-temperatures-to-rise-by-3-degrees-celsius-1237316</u> .

Global temperatures will increase by around 3 degrees Celsius, despite current efforts to cut emissions and to limit the temperature increase to below 2 degrees Celsius, researchers have found.

An assessment by European Commission's Joint Research Centre (JRC) shows that current climate commitments submitted by 155 countries for The 2015 United Nations Climate Change Conference, COP21, would increase global temperature by around 3 degrees Celsius.

The 155 countries representing around 90 per cent of global emissions have submitted their Intended Nationally Determined Contributions (INDCs) on climate policy to the United Nations Framework Convention on Climate Change (UNFCCC) in preparation of the new climate negotiations to be held in December in Paris.

The assessment of these initial proposals concludes that, if aggregated and fully implemented, unconditional INDCs (without international climate financial support or international cooperation mechanisms) could set global emissions growth at around 17 per cent above 2010 level by 2030.

Under European Union's scenario to reach the global goal set by all Parties under the UNFCCC, ie limit global temperature increase to below 2 degrees Celsius, global emissions would peak in 2020 and decline afterwards to 10 per cent below 2010 levels by 2030.

When considering unconditional and conditional (with international climate financial support and other forms of international cooperation) INDCs combined, JRC found that global emissions could peak shortly before 2030 at 12 per cent above 2010 level.

New data brief by the International Institute for Sustainable Development (IISD) analysing recent trends in LPG consumption and subsidy expenditure.

Recent Trends in LPG Consumption in India: <u>http://www.iisd.org/gsi/news/data-blog-trends-lpg-india</u> .

Further to the recent research note, please find below a new data brief by the International Institute for Sustainable Development (IISD) analysing recent trends in LPG consumption and subsidy expenditure.

Recent Trends in LPG Consumption in India: <u>http://www.iisd.org/gsi/news/data-blog-trends-lpg-india</u>

This brief shows that in the most recent financial year:

- total subsidized consumption increased by 18%, or 166 million cylinders (the largest increase in over a decade)
- total unsubsidized consumption decreased by 19%, or 43 million cylinders (the largest decrease in over a decade)
- subsidized consumption increased to 86% of total consumption (from 81% in FY 2013-14)
- subsidized consumption increased to 97% of domestic consumption (from 92% in FY 2013-14)

Full calculations and supporting data are available on request. Additional analysis on LPG subsidies and subsidy reform is available at: http://www.iisd.org/gsi/sites/default/files/ffs india lpg overview 2014.pdf and : http://www.iisd.org/gsi/sites/default/files/ffs india lpg overview 2014.pdf and : http://www.iisd.org/gsi/news/indias-direct-benefit-transfer-lpg-programme-not-subsidy-reform :

For further details of IISD's country programme and other recent publications please see : <u>https://www.iisd.org/gsi/countries/india</u> .

Analysis and Outcomes of Meeting of the Parties (MOP 27) to the Montreal Protocol

The twenty-seventh Meeting of the Parties (MOP 27) to the Montreal Protocol on Substances that Deplete the Ozone Layer was held in Dubai from 1st to 6th November, 2015. The Montreal Protocol is among the most successful multilateral environmental treaties in history. Montreal Protocol has been highly successful in formulating the phasing out of the Ozone depleting substances (ODS) like Chlorofluorocarbons (CFCs) and Hydrofluorocarbons (HCFCs).

Hydrofluorocarbons (HFCs) which have been introduced as substitutes for CFCs and HCFC under the Montreal Protocol are considered a safe alternate to the Ozone depleting substances (ODS) which are used mainly in refrigeration but have a very high Global Warming Potential (GWP) making it very ineffective alternative in fighting climate change. Amending Montreal Protocol to include HFCs could set a course for actions that would avoid 0.5 degrees C of warming by the end of the century. And a recent study by <u>NASA</u> suggests that HFCs could have also been contributing to the Ozone layer depletion all this while.

In MOP27, after six years of discussions a contact group on the feasibility and ways of managing HFCs has been established which will be the official platform to discuss managing HFC Phase down by various parties.

The negotiations have officially begun in the contact group and parties have started discussing the challenges and solutions on a wide range of issues including but not limited to Finance, flexibility in implementation and Intellectual Property Rights (IPR). The contact group has come up with a way forward which is published in the <u>meeting portal</u>. The negotiations in the contact group will be continued in an extraordinary MOP to be held next year in Dubai so as to increase the pace of negotiations and the possibility of amending the Montreal Protocol to include HFC Phase down in 2016.

Please check the links below covered in <u>Down to Earth</u> for more detailed daily updated of how the negotiations took place and the manner in which the outcome on way forward was arrived:

Day 1: Meeting of Parties on Montreal Protocol begins in Dubai

Day 2: MOP: Challenges galore, but solutions few

Day 3: Negotiations in Montreal Protocol move at a slow pace

Day 4: Montreal Protocol: Some consensus on HFC-related challenges, but solutions still far fetched

Day 5: MOP concludes with hope to bring amendment to phase down HFCs in 2016

Announcements

Can UN climate talks catch up with the real world?

The article is available at : <u>http://www.trust.org/item/20151104083807-</u> <u>l6ezj/?utm_medium=email&utm_campaign=AlertNet+Climate+newsletter+Nov+10&utm_content=AlertNet+Climate</u> <u>+newsletter+Nov+10+CID_67bf2f093492ddd4dfa8f164fe48248c&utm_source=Campaign%20Monitor&utm_term=Ca</u> <u>n%20UN%20climate%20talks%20catch%20up%20with%20the%20real%20world</u>

While companies and citizens find ways to cope with climate change on the ground and push governments to swap fossil fuels for clean energy, officials negotiating a U.N. deal to curb global warming often appear stuck in a time warp, experts say.

At final talks before a Paris summit due to agree the new deal, South Africa's top climate diplomat Nozipho Mxakato-Diseko told journalists climate change was a day-to-day reality for developing states - "a matter of life or death" for some.

Yet the discussions in Bonn seemed far off dealing with the impacts of worsening extreme weather and rising seas as an urgent threat, tripping up over procedural rows and the precise wording of a 51-page draft text to be taken to Paris.

Mxakato-Diseko, who chairs a key group of 134 developing states at the climate talks, insisted success in Paris next month would hinge on industrialised countries committing more public money to help poorer nations adapt to growing climate stresses and adopt renewable energy.

Insisting that rich governments alone pay to fix the consequences of their historically high carbon pollution symbolises what a European Union official described as "very rigid and somewhat outdated rhetoric", dividing the world according to income levels in the early 1990s, when the bedrock U.N. convention on climate change was crafted.

"To be effective, the new agreement must reflect today's reality and evolve as the world does," said Elina Bardram, head of the European Commission team, at the October talks in Bonn.

That reality, experts say, means recognising that all countries, rich and poor, need to play a part in curbing planet-warming emissions by moving away from dirty energy sources and protecting their people from climate change impacts.

With China now the world's top emitter of greenhouse gases, and India fourth after the United States and the European Union, efforts by major emerging economies to develop in a

greener way are a centrepiece of the new accord now being stitched together.

Whatever is agreed at the Paris conference starting on Nov. 30, the six-year process leading up to it has resulted in 155 governments submitting national climate action plans for the coming decades - including 114 developing countries. That in itself is a huge achievement, analysts say.

"The world has changed significantly, and Paris will be a recognition of that," said Saleemul Huq, director of the Dhaka-based International Centre for Climate Change and Development (ICCCAD).

Developing nations have made a big concession by putting forward plans to use more solar, wind and water power and to conserve forests, but there is a limit to how far they can shoulder more of the burden of curbing climate change, he added.

An analysis of the national climate action plans, released last week by the U.N. climate change secretariat, found that a quarter of the emissions reductions pledged are conditional on receiving financial and technical support to make them happen.

BARRIERS BREAK DOWN

But people working on renewable energy projects - from Africa to Latin America - have a different take, said Monica Araya, a former climate negotiator for Costa Rica and founder of sustainable development strategy group Nivela. "If you talk to citizens, entrepreneurs or investors in renewables, or people working on energy efficiency in cities, the conversation is all about the country we want to build... the cooperation we need, the collaborations we want," she said. A citizens' platform she set up called Costa Rica Limpia is pushing for cleaner forms of public transport, to improve quality of life and decarbonise the economy further.

In other fast-developing places like China, a key reason governments have begun to crack down on dirty industries and step up efforts to rein in emissions is public dissatisfaction over air pollution, she noted.

Meanwhile, expertise in preventing floods or building solar power systems is increasingly being shared across borders in the southern hemisphere, as well as between the north and south - along with funding to put those ideas into practice.

China, for example, recently promised ¥20 billion (\$3.1 billion) to establish a fund that will assist developing countries in combating climate change.

And some developing nations, including Peru and Colombia, have made contributions to the U.N. Green Climate Fund, which will finance efforts to adapt to and curb climate change in poorer countries.

Such moves have begun to break down the traditional division between rich donor governments and recipient states, but the rhetoric in the negotiating rooms often fails to reflect this, experts say.

PARIS POLITICS

Until wealthy governments clarify how they will make good on a promise to mobilise \$100 billion a year in climate change funding for vulnerable nations by 2020 - and how it will be scaled up after that - the G77 and China group of developing countries is expected to continue using finance as a bargaining chip at the U.N. talks.

Wrangling is likely over the definition of which countries should - or could - provide climate finance, and to which vulnerable states.

Even developing nations that are willing to put money on the table don't want to be bound by the same accounting and reporting rules as their richer counterparts, experts noted.

The complex U.N. process and the tough challenge of getting some 195 countries to agree on limiting environmental damage - for which some are more responsible than others - mean negotiators, many of them government officials, will be unable to get the job finished in Paris themselves.

More than 80 world leaders are due to attend the opening, to give the talks political impetus. In the second week, ministers will arrive to hammer out anticipated sticking points such as finance and a mechanism for addressing "loss and damage" from climate change, such as displacement due to rising seas.

The French capital will also be the setting for thousands of ordinary people marching to demand greater action on climate change, as well as hundreds of businesses, non-governmental groups and city officials showcasing their efforts to slow global warming and deal with its impacts around the world.

Invitation for the International conference on Education as a Driver for Sustainable Development Goals from January 11-13, 2016.

Further details are available at: <u>http://www.ceeindia.org/esdg/About%20the%20Conference.html</u>.

The UN Decade of Education for Sustainable Development (DESD) has demonstrated how education can play a vital role leading to sustainable development. The UN DESD closed with an International Conference in Nagoya, Japan in November 2014 with the declaration of the Global Action Programme (GAP). The GAP has identified five priority areas to advance the Education for Sustainable Development agenda and enable strategic focus and foster stakeholder commitment. CEE is a key GAP partner to the priority area 'Advancing Policy'. Every country and region would need to develop their own GAP agenda bringing in local perspectives and initiative.

In September 2015, the UN also launched Sustainable Development Goals (SDGs), an outcome of global consultative processes. It is important for ESD communities to look specifically at each goal and determine how education can play an effective role in helping achieve this.

An international conference titled 'Education as a Driver for Sustainable Development Goals' is being organized by Centre for Environment Education (CEE), in partnership with UNESCO, UNEP and the Government of India. The Conference will be organized from January 11-13, 2016.

It aims at bringing together global experience and expertise to highlight and strengthen the role of education in realizing the SDGs. It will be an opportunity to build upon the learnings from the **UN Decade of Education for Sustainable Development**, 2005- 2014 and recognize Education as a key enabler.

The SDGs are applicable to the world as a whole. Increasingly, the emphasis has moved away

from a solely economic view of development to a larger view that includes the three pillars of sustainability – environmental, social and economic. With this new emphasis comes also the recognition that policy instruments or technological solutions are not going to be enough and that behavioural change was critical to achieving Sustainable **Development.** Thus the role of education in its broadest sense including training and capacity building, communication and creating public awareness, scientific research, sharing and access to information and networking; and partnerships becomes a key strategy for achieving the SDGs.

The objective of the Conference is to bring together the global experience and expertise of using Education as a way of achieving SDGs.

Expected Outcomes

- To apply the learnings of the UN Decade of Education for Sustainable Development to develop programmes to achieve the SDGs
- To look at how the Global Action Programme (GAP) on ESD can play a major role in the SDG strategy
- To develop synergies and partnerships

The conference spread over 3 days will have 5 Plenaries and 17 Working Groups

Theme of the Conference: Education as a driver for Sustainable Development Goals

Working Groups

The working groups are organized on the lines of Sustainable Development Goals (SDGs) : Goal 1: Poverty Alleviation

Goal 2: Sustainable Agriculture, Food Security and Nutrition

- Goal 3: Health and Well being
- Goal 4: Quality Education
- Goal 5: Gender Equality and Empowerment
- Goal 6: Sustainable Management of Water and Sanitation
- Goal 7: Access to Sustainable and Modern Energy
- Goal 8: Sustainable Economic Growth
- Goal 9: Sustainable Industrialization and Infrastructure
- Goal 10: Reduce Inequality
- Goal 11: Sustainable Cities and Human Settlements

Goal 12: Sustainable Consumption and Production

Goal 13: Combating Climate Change and its impacts

Goal 14: Conservation and Sustainable use of Marine Ecosystem and Resources

Goal 15: Conservation and Sustainable use of Terrestrial Ecosystems and Resources; combating desertification and land degradation

Goal 16: Peaceful and Inclusive Society and Institutions

Goal 17: Strengthening Means of Implementation

Smart inverter market grows on rise of virtual power plants.

We in India are also looking at Decentralized Distributed Generation in a big way and therefore the model discussed here would be very much relevant for India, particularly in rural and semi-urban areas.

The article is available at : <u>http://analysis.pv-insider.com/smart-inverter-market-grows-rise-virtual-power-</u>

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Intelligent inverters will become a key component in virtual power plants as more PV and other renewable energy assets are aggregated into centralized networks that require complex software systems for output control, TJ Keating, director of development for the SunSpec Alliance, told PV Insider.

Virtual power plants, which combine the output from multiple energy sources and can ramp it up or down centrally to suit power-purchase agreement (PPA) requirements, are growing in Germany and the United States on the back of rising distributed energy generation, wider use of smart meters and other smart grid technologies, and the emerging markets for ancillary services.

"Increasing functionality in the form of embedded hardware and software would be the primary differentiator of successful midstream solar companies," Deutsche Bank said in a report published in February. "Over time, the integration of storage and energy management would become the primary differentiator for solar companies," the bank said.

The proliferation of virtual power plants (VPPs) is already forcing inverter makers to include greater intelligence in their systems, while virtual power plant owners are seeking to invest in sophisticated data software to control the output from multiple energy sources, according to Mark Barineau, analyst with Lux Research in Boston, Massachusetts. "Almost all new inverters next year will be smart," he said.

In June, inverter maker SMA unveiled a partnership with LichtBlick, the German virtual power plant operator, to integrate battery storage systems connected to rooftop PV into a single IT platform that could then deliver power to electricity markets. SMA is contributing partial solutions for the PV system and its aggregation.

"When many local storage systems are linked together, they create a powerful 'SchwarmBatterie,' or battery cluster, which LichtBlick uses to stabilize utility grids and compensate for weather-related fluctuations in wind and solar power," SMA said in a press statement.

Virtual power plants give operators access to a larger generation pool with enough overcapacity to curtail and ramp up production according to off-taker demand.

Markets with surging renewable energy capacity, such as Germany, are often faced with excess supply of intermittent power.

SMA is researching different inverter solutions for virtual PV power plants, including via partnerships with companies like Lichtblick, said Dagmar Buth-Parvaresh, a member of the company's public relations team.

Other manufacturers known to be working on smart inverters include ABB, KACO, Outback, SolarEdge, Enphase and Ideal Power.

In the US, meanwhile, First Solar has been operating with a virtual power plant concept for several years. The company operates an automatic dispatch system that allows utility customers to reduce plant output and thus balance the grid, said Tony Padgett, director of O&M at First Solar.

The customer sends signals to First Solar through an application program interface, and output from the plants is adjusted in response, within a buyer dispatch down agreement.

First Solar has not provided details of the exact value of this, but according to Padgett, there are several benefits of such systems.

"It's more likely we would be able to stay online if something needs to be adjusted because we can help balance the grid. And CAISO [the California independent system operator] might start to compensate owners for that reactive control," Padgett told PV Insider's O&M trends and market outlook 2015.

First Solar now includes automatic dispatch system capability in all its plants. The system controls the output from individual inverters and can even shut them down if needed.

In September, SolarCity embarked on a similar path with a smart energy homes pilot in collaboration with the SunSpec Alliance and Southern California Edison, a US utility that operates in the CAISO territory.

The pilot will see SolarCity installing rooftop solar PV, batteries, controllable thermostats and smart inverters across 50 homes in the Southern California Edison catchment area.

On the operations side, VPPs require additional investment in software and communications assets, among others, to plan, schedule and bid for distributed energy services.

In particular, in order for utilities to automatically control the output of a VPP, the asset owner needs to install sophisticated control systems that can allow individual PV strings to be switched on and off.

At the same time, it may be useful to invest in tracking or mounting systems that allow the output of PV arrays to be more finely controlled.

"The upfront costs are higher," said Barineau. "You need to allow for bi-directional inverters and so on."

In one example, US inverter supplier TransPower says its Inverter-Charger Unit is priced at 30 cents/watt, although it says the price can be lowered to 20 cents/watt for larger production volumes.

In comparison, US inverter prices are forecast to drop from \$0.23 per watt in 2015 to \$0.20 in 2016 and \$0.17 in 2017, according to a report by Deutsche Bank, published in February.

As more solar assets are brought in, O&M will become a higher priority, but this is unlikely to significantly increase O&M costs, Barineau said.

TJ Keating of the SunSpec Alliance confirmed that the shift in O&M practices between traditional and virtual power plants might be minimal, even if additional components such as batteries are taken into account.

"[With] plant maintenance, there will be no real change," he said. "Storage has little maintenance and solar plant operations will be about the same. Most of the new comes from smart-grid operations; reactive power, frequency support and ancillary services."

Over time, these systems may even contribute to a reduction in O&M costs, by allowing plant owners to build greater levels of automation and remote control into their plants.

A further saving could come from the standardization of systems needed to ensure all plant components from a range of different plants can work together.

Though costs would vary according to the system configuration, an unpublished SunSpec Alliance smart energy project summary seen by PV Insider estimates that the lifetime cost benefits of a standardized communication interface can result in a \$0.02 per installed watt saving, due to decreased need for specialized labour.

What to expect from India's new rooftop solar policy?

The Indian rooftop solar market grew 66% in the last 12 months despite the lack of any specific rooftop solar policy initiatives. The new rooftop policy is likely to consolidate and detail out already known aspects such as yearly targets, changes in capital subsidy scheme and schemes for low cost financing. If the new policy does not introduce mandatory rooftop solar installations for buildings, the policy release will likely be a non-event.

Earlier this month, India's minister for new and renewable energy, Piyush Goyal, announced that the country's rooftop solar policy is now ready to be placed before the union cabinet. This policy is expected to lay out yearly targets to reach 40 GW of rooftop solar capacity and provide comprehensive details of operational and fiscal support for the rooftop solar market.

There is no draft policy document in the public domain but we believe that the new policy will consolidate and bring all disparate fiscal and operational support measures for the market under one comprehensive framework including for example, steep expansion in yearly targets, 15% capital subsidy for residential consumers and public buildings and low cost financing using funds from international developmental banks. Other concessional benefits such as zero import duties on equipment and accelerated depreciation benefits (available until March, 2017) are likely to continue.

In the last one year (November 2014 – October 2015), India added 240 MW of rooftop solar capacity against 145 MW in the same period before this – a growth of 66% despite a largely non-functional rooftop specific policy framework.

It is not possible to underpin the 40 GW rooftop target on fiscal support measures such as subsidies, feed-in-tariffs or generation based incentives. The role of rooftop policy in our view should be to accelerate adoption rates by enabling various technical and operational measures as the market has extremely strong fundamentals with increasing commercial attractiveness vs. grid power.

When the cabinet passed the 100 GW target in June 2015, the Cabinet note mentioned several possible initiatives such as implementing mandatory rooftop installations for private power consumers. The note also mentioned making net-metering compulsory by incorporating measures in the Integrated Power Development Scheme (IPDS).

Further action on compulsory net-metering by power distribution companies and mandates on building owners to install rooftop solar can provide a significant fillip to the market. **Given that most of the other initiatives have already been announced, if the rooftop solar policy fails to elaborate on such new measures, its release will largely be a nonevent.**

Green Climate Fund approves eight projects at Zambia meet : Approved projects worth US\$ 168 million.

The article is available at: <u>http://www.downtoearth.org.in/blog/-green-climate-fund-approves-eight-projects-at-</u><u>zambia-meet-51791</u>.

The Green Climate Fund (GCF) recently approved eight projects worth US\$ 168 million at its tenth board meeting in Zambia.

Although all the projects were vetted through the GCF's approved criteria, there were questions about insufficient attention paid to readiness/preparedness of vulnerable countries and enhancing local participation in design and implementation of projects.

There were also concerns about the timing and the size of the projects being approved. Some parties argued that the relatively small amount of US\$ 168 million in funding so close to COP 21 might be a rouse to sweeten the low ambitions of developed countries on climate change.

The eight projects were submitted to the GCF board after detailed review (including an investment risk analysis) by the GCF secretariat and Technical Advisory Panel (TAP). The selected projects were:

- Building the resilience of wetlands in the province of Datem del Maranon in Peru
- Scaling up the use of modernised climate information and early warning systems in **Malawi.**
- Increasing the resilience of ecosystems and communities through the restoration of the productive bases of salinized lands in **Senegal.**
- Climate resilient infrastructure mainstreaming in **Bangladesh**.
- KawiSafi Ventures Fund in East Africa
- Energy efficiency green bond in Latin America and the Caribbean
- Supporting vulnerable communities in the **Maldives** to manage climate change-induced water shortages
- Urban water supply and wastewater management project in Fiji

These projects were reviewed based on impact potential, paradigm shift potential, sustainable development potential, needs of recipient, country ownership and efficiency & effectiveness.

According to the GCF, the indicative minimum benchmarks cannot solely determine whether a proposal should or will be approved. Instead, they represent the minimum requirements that the proposals should meet under normal circumstances in order to become eligible for further funding consideration.

Although the above set of criteria were developed after taking into account the view of all board members, there were still objections on the strength of the readiness initiative.

The board therefore decided to establish a project preparation facility to provide funding of up to 10 per cent of requested GCF funding with a maximum of US \$ 1.5 million for any single proposal, to help developing countries in preparing their funding proposals. US \$ 14 million has been approved for funding such initiatives in the next year.

Concerns were raised about the lack of involvement of nationally designated agencies in the project design/approval process. This, parties said would lead to a dilution of ownership from

the recipient countries.

There were also concerns over gaps in institutional capacity for handling large sums of money in some vulnerable countries. More attention on this would increase transparency and effectiveness of this fund.

Parties re-iterated the importance of considering transformative projects that facilitated a paradigm shift in the specified sector. This would help in more efficient allocation and expenditure of the fund.

In the end, the board decided to review the proposal approval process based on the experience gathered from the review of the first batch of proposals, with a view to:

- Strengthen and scale up the fund's pipeline and country pipelines and programmes
- Streamline and improve the transparency of the proposal approval process
- Define further decision-making options including deferral of proposal approval
- Review how concept notes should work within the project cycle, facilitate the independent Technical advisory Panel's feedback on concept notes, and facilitate contact of the ITAP with accredited entities as useful and necessary
- Support the board to make decisions regarding funding proposals
- Strengthen project/programme eligibility criteria, including categories of incremental cost eligible for funding
- Interim procedures for redress pending the recruitment of the head of the independent redress mechanism

Another key decision was to formalise the fund's aspiration to approve funding proposals worth US \$2.5 billion next year. Hopefully the next round of projects will take into account all of the concerns voiced by board members during the meeting.

It would not be appropriate to judge the functioning of the fund from these eight projects that account for only a small portion of the fund's size. Lessons from these initial projects should be used as building blocks for better, more effective/efficient projects.

Critique by Mr Shankar Sharma on the article that India won't need coal imports by 2017: Goyal, published in the Deccan Herald recently.

 $The article is available at: \underline{http://www.deccanherald.com/content/512164/india-wont-need-coal-imports.html \ .$

While it can be seen as a good development if India's coal import will stop soon, it is difficult to believe that it can actually happen by 2017 with so many coal power plants being planned and built all over the country, some of them entirely based on imported coal, it is a difficult proposition.

However, according to an article published in the Deccan Herald recently, India won't need coal imports by 2017, according to the Coal Minister, Mr Piyush Goyal. He opines that coal shortages will be a thing of the past and India won't need to import dry fuel by 2017, except to meet requirements of the power plants located near coastal areas where it is very difficult to transmit coal. He said that he is fairly confident the era of shortages is over.

At next level of Ujwal Discom Assurance Yojana (UDAY), the Government is looking at complete ability to exchange coal or to swap coal, complete synergy in the in power and coal sectors so that coal is used most efficiently by the most efficient power plants at the nearest location and power is transmitted rather than coal.

Coal imports are declining and they fell for the fourth consecutive month in October by 5.1 per cent to 14.52 million tonnes (MT) over same month year ago. In September the import of dry fuel dropped by 27.16 per cent to 12.6 MT on rise in domestic production. India had imported 212.103 million tonnes of coal worth over Rs 1 lakh crore last fiscal. The government is eyeing to achieve 1.5 billion tonnes of coal production by 2020.

India is the third-largest producer of coal after China and the US with 299 billion tonnes of resources and 123 billion tonnes of proven reserves, which may last for over 100 years.

According to Goyal, "Energy has to reach the last man at affordable prices. Way forward is energy efficiency, low power prices."

The minister also said that South India benefited by 5000 MW of additional power in last 18 months and 20,000 MW additional transmission capacity in pipeline.

As per the minister's view with launch of discoms revival schemes UDAY, REC and PFC can lend USD 20 billion for areas like transmission, renewables etc.

According to the minister over 250 million tonnes of coal washeries in pipeline. Standard design of washeries have been developed to leverage economies of scale.

The above article is available at: <u>http://www.deccanherald.com/content/512164/india-wont-need-coal-imports.html</u>

Looking back at our own recent experience it will be even more harder to imagine how the domestic coal industry will supply all the coal required for the increasing number of coal power plants. Even if actual coal production goes up hugely, the difficulties with transportation of the coal to distant power plants cannot be wished away. The opening new coal mines, which will be needed to ramp up the coal production, itself will not be easy with so much opposition from the project affected families, and the environmental concerns.

So, it is difficult to believe that the latest statement on coal import is not one of the tall claims by the political leaders, as has been happening all these years with such tall claims.

Without any indication on the ground that India's coal dependence will come down in the near future (there is not even any official indication that the govt. proposes to reduce coal consumption in next 20-30 years), only massive lobbying by the international community and the assistance from the developed countries can change the situation.

Let us hope the COP 21 meeting will provide some relief to the global environment.

9

Urban Farm Takes Whole Lifestyle Approach to Local Food : Grow well, eat well, live well, be well.

The article is available at: <u>http://www.sustainablecitiescollective.com/seedstock/1118613/indiana-urban-farm-takes-whole-lifestyle-approach-local-</u> food?utm_source=feedburner&utm_medium=email&utm_campaign=Sustainable+Cities+Collective+%28all+posts%2

For the past seven years, the work of Growing Places Indy has evolved to include a winter

farmers' market, yoga classes, a summer apprenticeship program, educational offerings, and several urban farm sites.

The journey started with the Indy Winter Farmers Market, founded in 2008 by Laura Henderson, who now serves as executive director of Growing Places Indy. Created to give Indianapolis residents a year-round supply of locally-produced foods, the winter market operates from November to April inside the Indianapolis City Market in downtown Indianapolis.

"At the time there were no winter markets in downtown Indianapolis," says Henderson. "Within the first month of operation, we knew we were on to something. There was not enough of a supply of local food to meet demand."

Then, in 2009, Henderson was given the opportunity to start a garden at White River State Park, located near downtown. Acting on her desire to farm in the city and connect people to where their food comes from, she jumped at this chance. At the time, Henderson knew only two urban farmers in Indianapolis. She connected with one of them, and together they procured a grant from the Indiana State Department of Agriculture to begin an internship program. Thus, Growing Places Indy was born.

As Henderson deepened her involvement in the city's local food movement, she found that many others shared her vision–not just urban farmers, but advocates wanting to transform the food system.

Now, the entire operation is based on a philosophy of not just surviving, but thriving.

But before it reached that point, Henderson still had some inner work to do. While spending time in Europe with her husband, Tyler (who now serves as farm manager), she found herself comparing Indianapolis to places in Europe that seemed to have much more to offer. It was then she realized that positive change could emanate from her.

In all, 60 varieties of vegetables, fruits and herbs are grown annually. This has not gone unnoticed by area eateries—39 restaurants in the vicinity of downtown Indianapolis use produce from Growing Places Indy, which, weather permitting, delivers food via bicycle.

But the growing and selling of healthy and local produce only meets the "grow well" and "eat well" standards. Growing Places Indy takes this further by educating people to "live well" and "be well." A key avenue to meet this need is yoga.

"We incorporate yoga into all of our programs—this is part of my journey as a yogi," says Henderson, who sees yoga as going hand-in-hand with eating well.

"We empower people with tools to lead full, abundant and thriving lives," Henderson says, who is trying to meet an educational need in the city's impoverished Near Eastside neighborhood. "In the Near Eastside, 40 percent of people live below the poverty line. Diet-related diseases are off the charts."

Profitability, while necessary for sustainability, is not Henderson's primary motivating factor. Rather, she views her role as teaching people how to use local food (and yoga) to live healthy lives. She acknowledges this goes against the grain, especially PV module prices drop by 80% below 2009 levels; Czech Republic reignites home user market: Modules, large-scale PV see big price drop in 2010-2014.

The article is available at : <u>http://bit.ly/101aSIj</u>

Solar photovoltaic module prices have fallen by around 80% on average since the end of 2009 while electricity costs from large-scale solar PV plants halved between 2010 and 2014, according to IRENA's Quarterly Update published in October.

Crystalline module prices in Germany have dropped by more than 70%, from €1.95/Wp in March 2010 to €0.58/Wp in October 2015.

At the same time, Chinese crystalline module prices have fallen by almost 63% from ≤ 1.5 /Wp in March 2010 to ≤ 0.56 /Wp in October 2015.

The installed costs for utility-scale solar have decreased to a global average of around \$0.09/kWh (\$90/MWh), meaning that electricity from large-scale PV is beginning to compete with fossil fuel-fired electricity costs in some parts of the world.

Levelized cost of electricity from renewable power generation technologies commissioned in 2014. The size of the diameter of the circle represents the size of the project. The center of each circle is the value for the cost of each project on the Y axis. Real weighted average cost of capital is 7.5% in OECD countries and China; 10% in the rest of the world. Source: IRENA Renewable Costing Database.

Brazil's solar auctions are currently contracting for solar PV at around \$0.08/kWh while recent tenders in Jordan resulted in bids in the range of \$0.06-0.08/kWh. In the United Arab Emirates, the Dubai Electricity and Water Authority has tendered for the lowest-cost electricity to date, just under \$0.06/kWh.

At the same time, SunEdison has just won a bid to sell solar power in India at record-low 4.63 rupees/kWh (\$0.0706/kWh), Reuters reported on November 4. The company won an auction for a 500 MW project in the state of Andhra Pradesh.

The previous lowest solar tariff in India was about 5.05 rupees/kWh for Canadian company SkyPower Global's 150 MW PV project in the state of Madhya Pradesh.

Though the SunEdison project could boost the appeal of renewables in India, solar energy still has a long way to go before it can effectively compete with coal on price, which costs between 1.5 and 5 rupees/kWh in India, according to Reuters.

SunEdison has signed an Intellectual Property licensing deal with PV technology firm Solaria to produce a new line of ultra-high efficiency 400 watt solar modules, the two companies announced on October 26.

The new SunEdison Zero White Space solar module architecture squeezes more electricity out of the module by reducing the amount of unproductive white space surrounding each cell.

SunEdison said in a press release that the new module – its most efficient to date – is especially suited for home and business applications where space is limited.

Meanwhile, Suntech announced November 3 that it has launched a new smart DC module

that integrates Tigo's modular TS4 platform.

The new application is designed to enhance system performance by using wireless communications, optimizing power output and providing real-time monitoring. The module is designed to cut overall maintenance costs by eliminating module-level or cell string mismatch and by reducing the chance of module malfunction.

Increasing power output in constricted installation spaces, the Suntech smart DC module also offers up to 30% longer strings that will balance of system costs, the company said in a press release.

Suntech plans to integrate the TS4 into a variety of its modules that cater to both rooftop and commercial markets in Europe and Australia.

New incentive program could boost ailing Czech PV sector

The Czech government launched a new incentive scheme on October 15 for energy efficiency that will also support the installation of residential PV systems for self-consumption. The government will allocate a total of 27 billion CZK (\$1.13 billion) for the program over the next 10 years, of which 520 million CZK (\$21.8 million) in 2015 and 2.85 billion CZK in 2016. The Czech Parliament has also recently approved an amendment to the country's renewable energy law that exempts rooftop PV projects up to 10 kW from requiring building approval. The Czech Republic had 2.1 GW of installed PV capacity at the end of December 2014, according to data from the country's Energy Regulatory Office.

China's bottled water industry to exploit Tibetan plateau : The Tibet government wants massive expansion of the bottled water industry by tapping the Himalayan glaciers, but the environmental stakes are high

 $\label{eq:theta} The article is available at : \ \ \ http://www.thethirdpole.net/2015/10/29/chinas-bottled-water-industry-to-exploit-asias-water-tower-4/?utm_source=third+pole+newsletter&utm_campaign=6bee1c64e8-Tibetan+plateau+faces+%E2%80%9Cecosystem+shift%E2%80%9D&utm_medium=email&utm_term=0_43686cf8d_{5-6bee1c64e8-46416721}.$

Tibet wants to bottle up much more of the region's water resources, despite shrinking glaciers and the impact that exploitation of precious resources would have on neighbouring countries.

This week the Tibet Autonomous Region's government released a 10-year plan to encourage the massive expansion of the bottled water industry in the ecologically fragile region.

The target is to build 5 million cubic metres of bottled water production capacity by 2020. Since Tibet produced 153,000 cubic metres of water in 2014, according to Xinhua – this is indeed a huge jump.

Water in Tibet is abundant and so much cheaper than in other parts of China. Water bottled upstream among snow-capped peaks is also perceived as pure, commanding a premium. This has led to a huge influx of companies hoping to cash in on the region's water resources. Though it only makes up a very small proportion of China's annual bottled water production, such premium water is seen as the new point of growth for the country's booming bottled water industry.

But tapping glaciers will come at a huge cost to Tibet's fragile environment, warned China Water Risk's recent report "Bottled Water in China – Boom or Bust?". The Qinghai-Tibet

Plateau – known as Asia's water tower – is the source of the continent's major rivers that provide a lifeline for China and other parts of Asia.

In the last two decades, China has become the world's largest bottled water consumer and a major producer. However, with per capita consumption 19% lower than global average, the market is expected to continue to boom. Even if China reaches the consumption level of Hong Kong, the market scale would be four times larger than today's. In 2012, China produced 55.6 million cubic metres of packaged water.

In the light of President Xi Jinping's desire to build an "Ecological Civilization", China has also strengthened policies to conserve forests and natural protection zones. China's strong commitment to dealing with climate change also includes actions to protect its glaciers.

But how does the growth of the bottled water industry in the region fit into such policies? What does it mean for China and downstream countries if bottling production capacity soars? The glaciers in the Qinghai-Tibet Plateau have already shrunk 15% over the last three decades. With the stakes so high, the government and investors should rethink their strategy.

The Qinghai-Tibet plateau is already a hotspot for the bottled water industry. By 2014, the government had approved licenses for 28 companies to produce bottled water in the Tibetan Autonomous Region. Bottled water activities are also growing rapidly in neighbouring Xinjiang, Qinghai and Yunnan provinces, with companies even bottling water straight from glacier tongues.

Gelaixue Glacier Water is one such company. According to its official website, all its water comes from the glacier tongue of the "No.1 Glacier" – which sits 4,480 metres high in the Tianshan mountains, Xinjiang province.

This is just the start of the rush to exploit the region's water resources. Cash-rich companies, including pharmaceutical, confectionery, petroleum and biotechnology, all want a finger in the pie. In November 2014 as part of a government advocacy event called "Good water in Tibet should be shared with the world", the TAR government signed 16 agreements with various investors, totalling 2.6 billion yuan (US \$409 million).

With the support of local and central government, companies have moved fast. Since early 2015, Sinopec Group has sold glacier water bottled from Tibet in its 23,000 petrol stations and convenience stores across China. Official data shows the overall design capacity in TAR had reached 3 million cubic metres by the end of 2014, already half way to the 5 million target. Sales doubled in 2014 compared to 2013, reaching 830 million yuan, according to the TAR government.

Environmental risks

Although the development plan highlights the "three bottom lines" – social stability, environment and safety– the industry is still growing against the tide of many of China's environmental policies.

The environmental and regulatory risks of the bottled industry are high, if China is determined to protect its water sources and ban all exploitative activities in protected areas around river sources. The Qinghai-Tibet Plateau is not only important source of water for China but also Southeast and South Asia. The region is the source of ten of Asia's major rivers. This includes the Yangtze and Yellow rivers, China's two major watersheds and economic belts and also the transboundary Lancang (upper Mekong) river, the Nu (Salween) and the Yarlung Zangbo (Brahmaputra) river.

This upper watershed should be protected for long term prosperity rather than exploited for short term development. China's leadership recognises the tough choices needed to balance climate, water and energy security, with the need to protect watersheds. Yet local policies appear to be misaligned.

The region is among the places most vulnerable to climate change. According to the Chinese Academy of Sciences, glaciers in the Qinghai-Tibetan plateau have already shrunk 15% over the past three decades. In the short term, melting glaciers means higher bottling potential; but in the long term, rivers will dry up with disastrous consequences downstream.

However, is it ethical to withdraw any water from protected areas where glaciers are already shrinking and where the central government has invested billions of yuan in conserving the region for climate adaptation and mitigation?

Also, the cost of bottling mineral water at the foot of high-altitude glaciers is much higher, with the extra technologies and transportation needed to bring the product from source to market. The carbon emissions of the latter should also not be ignored.

The local government in Tibet has also said it will promote the export of bottled water. Is this the right way forward to secure China's water security? The government of Jilin province in northeast China is also encouraging drinking water for export. Here, the bottling capacity of Changbaishan (Ever White Mountain) is expected to grow to 50 million cubic metres with 10% production exported by 2020.

While many companies are flooding in to exploit the "blue gold" of Tibet, there are signs some are struggling to survive. On 28 July 2015, shares of Tibet 5100 – one of China's top high-end bottled water brands – fell 12.7% in the Hong Kong Stock Exchange after the China Railway Corporation stopped providing free mineral water to its passengers.

Tibet 5100 sources its water from glaciers at an altitude of 5,100 metres in Tibet and was one of the first companies to market glacier water in China. During 2011 to June 2015, the company sold 200 million litres of bottled mineral water to the China Railway Corporation.

As the joint report "China's Long March to Safe Drinking Water" published by China Water Risk and chinadialogue in March 2015 pointed out, China invested up to 7 billion yuan to secure public water supply in rural and urban areas during the 12th Five Year Plan period (2011-2015).

The investment will continue to grow in the coming years since the State Council has reiterated the government commitment on securing public water quality in the "Water Pollution Prevention and Control Action Plan".

More people should use this zero sewage discharge toilet

In 2013, the UN officially recognized November 19 as World Toilet Day to motivate and mobilize millions around the world on issues of sanitation. It strives to make sanitation for all a global development priority and to draw attention to global sanitation issues. The theme for 2015 is nutrition and sanitation, giving emphasis on the importance of toilets to support adequate nutrition and better health and educate people who do not have access to toilets. Nutrition is related to potable drinking water and cleanliness as well as proper hygienic practice. "One out of three women around the world lack access to safe toilets," U.N.

Secretary General Ban Ki-moon said in a statement. "As a result they face disease, shame and potential violence when they seek a place to defecate. The 2030 Agenda calls on us to renew our efforts in providing access to adequate sanitation worldwide. We must continue to educate and protect communities at risk, and to change cultural perceptions and long-standing practices that hinder the quest for dignity." Consequently in the SDGs we have Goal 6: Ensure access to water and sanitation for all.

The article is available at: <u>http://www.indiawaterportal.org/articles/more-people-should-use-zero-sewage-discharge-toilet#comment-</u>

The three-decade old 'Gramkranti Eco-Bio Toilet' doesn't pollute or need a septic tank or a sewage network. In fact, its output is a nutrient-rich liquid that can be used as a pesticide!

Toilets need a septic tank or a connection to a sewage network, enough water to clean and flush, and regular maintenance to ensure proper functioning--except if it's the 'Gramkranti Eco-Bio Toilet'. It looks just like a conventional toilet but needs none of these. Designed by someone with no formal degree in science, it even uses much lesser water when compared to the ones with a flush tank.

55 year old Sanjay Joshi, originally a small land holding farmer of Daryapur town in Amravati district, Maharashtra, developed this unique toilet which uses a bacterial culture to eliminate the need to dispose or treat human waste. In fact, its only output is a colourless, odourless nutrient-rich liquid that can be used as a pesticide!

Joshi had an inherent interest in science but poverty prevented him from pursuing a degree and he had to abandon his studies midway. But his sense of curiosity would not let him sit still.

"I once saw a mistry (mason) building a septic tank and asked him about the two chambers. He was unaware and said that he was just doing a job. That made me think about the actual process of making toilets", Joshi says. How many years will it work? How much can its capacity be? Will it stink? Will it need scavenging, especially manual scavenging? He read a lot of scientific material--in the 1980s pre-Internet, pre-Google days. In fact, at one point of time, it became difficult for him to find a bride as no father would agree to marry his daughter to a person who sold toilets for a living. After some time, he finally zeroed in on the successful formulation of the bacteria.

The innovative toilet has a conventional toilet seat with a small size tank ($2 \times 2.25 \times 2.25$ cu ft). The tank design is configured to attain highly efficient in-situ decomposition of excreta with the help of a patented bacterial culture. What remains as an output is a reusable liquid-basically a micro-nutrient--that can be used as fertilizer/pesticide spray.

"The work is done by this culture. To put it simply, this bacterial culture eats the human excreta, and the colourless, odourless water that we get is that bacteria's excreta", Joshi says. Also, unlike output from a urinal or open sewage, this by-product prevents flies and mosquito larva from breeding. Those who don't want to use it as pesticide can either sell it or simply drain it away in conventional drains. A toilet seat from the market is added to the specifically built tank which has the trade secret culture inside after which the unit is ready for sale.

Joshi's friend Ravindra Ganorkar, a large-scale land holding farmer and a social worker from the same village, joined him a few years ago. The duo experimented with the make of the toilet tank and the look in general. It is thanks to their research that the output liquid is being used as a pesticide. Joshi is the brain behind the concept while Ganorkar helps in the logistics and management.

The first such toilet was installed almost 30 years ago. Earlier it was pretty difficult to convince people to use such a toilet. All it needed was one person from a village to start using it. Within months, Joshi would get orders for more toilets from the same village. Over the last three decades, Joshi has installed almost 12,000 such toilets across Amravati district and neighbouring areas. Publicity has been through word-of-mouth till date, which Joshi and Ganorkar now plan to change.

Inspired by the Central Government's Swachch Bharat Mission, the duo has decided to go big and expand. This toilet has been installed at about 50 government schools in Daryapur tehsil. **The first toilet was sold for Rs 840. Today it costs Rs 6,000 for one unit with the tank and seat. Convincing people 30 years ago was an uphill task but by now, scores of people in the area know about his product, so getting orders is easier.** "My only dream is to make open defecation free India a reality", says Joshi.

Besides this, Mahatma Gandhi Institute for Rural Industrialisation, Wardha, has certified that the tank used is hygienic and suitable for low-cost latrine usage. The National Environmental Engineering Research Institute (NEERI), Nagpur has examined the tank output and certified that it is safe for human health. Panjabrao Krishi Vidyapeeth, Akola has certified that the output liquid has sufficient NPK contents and micro-nutrients to be used as organic pesticide.

Rajani and Rajesh Vasantrao Deshmukh from a nearby village Yevada, needed something compact for their small house. The couple, which has a four member family, installed this toilet about six years ago and since then has entertained guests during two marriages and one death. Another resident of the same village Kiran Jayantrao Deshmukh went in for this toilet about five years ago when she decided to re-construct her old house. "With the new house, I neither wanted a septic tank toilet which would need more space, nor a paver-block toilet which would need manual scavenging", Kiran said as she proudly showed the combined toilet-bathroom in her compact courtyard.

Savita and her husband Uddhav Sadashivrao Hirulkar from the same village, installed one unit 19 years ago. Their kitchen and pooja ghar is about 5 feet away from the toilet beyond a half-wall/half-grill partition. "There is no smell whatsoever even though we cook our food close by. The best part is that there is no need of manual scavenging", says Savita.

The advantages are innumerable. The use of the output liquid as pesticide spray, both before sowing and mid-crop cycle, reduces use of chemical fertilizers by 25%, the duo claim. When the toilet seat is fixed on the tank, there is no P-trap (it is a u-shaped or s-shaped plumbing arrangement that prevents odorous gas from drains/sewers from rising up through the toilet, sink or drains into homes). "Because we have done away with the P-trap and introduced a sloping smooth tile instead, very less water is needed. As against 12-16 litres of water needed during one flush in modern toilets, this uses just 5-6 litres of water," Joshi adds. The team has provided a pipe for gas escape instead.

The main advantages of this toilet are:

- No solid waste output
- Only colourless, odourless liquid output
- Needs barely 5-6 I of water
- No need of sewer network
- No need of septic tank, soak pit etc
- Prevents water contamination in any form
- Saves infrastructure cost for sewage network and treatment cost

- Output liquid can be used as pesticide spray
- Hygienic conditions prevents diseases
- Can be used as public toilet catering to 250 people/day
- Can be used in all terrains

Satish Shankarrao Sakhare, sarpanch of Maholi (Dhande) Grampanchayat has stepped in to bridge the gap. Among the 3,000 people of Maholi, there are about 350 households that do not have a toilet. A model of the Gramkranti Eco Bio toilet unit with a fabricated room-roof cover has been kept right outside the Grampanchayat building for prospective users to see. "We have decided to make our village 'Open Defecation Free' by December 2015. We will install the Gramkranti Eco Bio Toilet in all these houses. **The government has already sanctioned Rs 12,000 per dwelling"**, Sakhare says.

The government has identified 11 of the 115 villages in Daryapur tehsil under the Swachch Bharat Mission. Joshi-Ganorkar duo sells the tank-and-seat installation for about Rs 6000 plus transportation cost. The user needs to build a room over it. Certain experiments – as one model installed in front of Maholi Panchayat office – have been estimated to cost Rs 17,000. But despite the seemingly prohibitive cost for small land owners, their toilet has found takers. "There is lot of willingness to use a toilet," Joshi adds.

Pramod Joshi, a restaurant owner, and his family members are inspired citizens. He had already known about the Gramkranti Eco Bio Toilet. Soon he paid for several units of these toilets. His family members too were inspired and started contributing. Till now, the family has helped build 50-odd toilets in the three months.

Critique by Mr Shankar Sharma on the article : India caught in climate change quandary, published in the Deccan Herald recently .

The article is available at : <u>http://www.deccanherald.com/content/512663/india-caught-climate-change-guandary.html</u> .

According to the article "**India caught in climate change quandary**", a lot of damage is already inevitable due to the emissions of heat-trapping GHGs by richer countries

Spare a thought for poor India. India is home to 30 per cent of the world's poorest, those living on less than \$1.90 a day. Of the 1.3 billion Indians, 304 million do not have access to electricity; 92 million have no access to safe drinking water.

Further, India is going to be hammered by climate change. The livelihood of 600 million Indians is threatened by the expected disruption of the southwest monsoon from July to September, which accounts for 70 per cent of India's rainfall. India's rivers depend on the health of thousands of Himalayan glaciers at risk of melting because of a warming climate, while 150 million people are at risk from storm surges associated with rising sea levels.

A lot of damage is already inevitable, a consequence of the emissions of heat-trapping greenhouse gases by richer countries. So, many Indians ask, why must we pay more? On what grounds can India be asked to temper its use of energy to limit its emissions of greenhouse gases like carbon dioxide?

"Today, I see the carbon space occupied by the developed world," Prakash Javadekar, the environment minister, said in an interview with The Associated Press in September. "We are asking the developed world to vacate the carbon space to accommodate us. That carbon

space demand is climate justice."

The successful resolution of this confrontation of priorities does not matter just for India's sake. The tension between economic development and the imperative to curb greenhouse gas emissions remains the central challenge of the diplomatic effort to muster a coalition of rich and poor countries to combat climate change.

The United Nations expects India's population to reach 1.5 billion by 2030, bigger than China's. If over the next 15 years, it follows anything like the fossil fuel-heavy path out of poverty that China took over the last 15, it could blow any chance the world has of preventing a disaster.

A critical question for anyone with a stake in preventing a climatic catastrophe is how to conceive and finance a development path for 1.5 billion Indians that prevents this outcome. Scientists and environmentalists, executives and government diplomats packing their bags to attend the climate summit meeting in Paris, starting November 30, must keep the challenge in mind.

After so many failed rounds of diplomacy, everyone involved is eager to declare the coming meeting a success. So far, 129 countries accounting for nearly 90 per cent of greenhouse gas emissions have submitted plans to contribute to the cause. While the progress is undoubtedly real, the central challenge remains unresolved.

Countries are not being asked to make legally binding commitments to reduce their greenhouse gas emissions. They will show up, instead, with "Intended Nationally Determined Contributions" to the mitigation effort.

Advanced countries will offer absolute cuts in carbon emissions. But the less developed are expected only to reduce their emissions-intensity — a measure of the carbon dioxide released to produce a certain amount of economic activity — in a recognition that their energy consumption still has a long way to grow.

The new approach was necessary to achieve any progress. But it required putting the tough questions aside. Nearly as populous as China, yet way behind in terms of economic development, India presents one of the tougher ones.

For instance, a recent report by the World Bank argues that economies like China and India must totally decarbonise their electricity supply around mid-century and achieve negative emissions from then on, using carbon capture technologies and vastly increased forests, to suck excessive carbon out of the atmosphere.

To power growth of about 8% for the next 15 years, India's electricity consumption — which accounts for over half its greenhouse gas emissions — would rise 6 to 7 per cent a year. Even under the most ambitious goals for nuclear power and renewable energy, more than half of this power is expected to come from coal, the dirtiest fuel.

By 2030 India's coal consumption could triple or quadruple. India has come up with a mitigation contribution plan for the Paris meeting. It aims to get 40 per cent of its electricity from non-fossil fuels by 2030 and to reduce its emissions intensity by 33 to 35 per cent from 2005 to 2030. It also offers to vastly increase its forest cover.

The plan, however, pointedly notes that India's energy consumption amounts to only 0.6 metric tonnes of oil equivalent per person, about a third of the world average. It explains that

"no country in the world" has ever achieved the development level of today's advanced nations without consuming at least 4 tonnes.

Development can be decoupled from carbon emissions, the World Bank insists. Moreover, economists at the World Bank argued in a separate report released recently that emissions reduction policies could be structured to benefit the poor in the next 15 years — for instance by using revenue from carbon taxes to pay for social insurance.

Under the right set of policies, the World Bank projects that even the most disruptive climate change would add only 3 million people to India's extreme poor in 2030. Bad choices, by contrast, would add 42 million to that number. Some in India seem convinced by the logic.

The above article is available at: <u>http://www.deccanherald.com/content/512663/india-caught-climate-change-quandary.html</u>

However, large scale addition to GHG emissions through massive fossil fuel burning and other associated actions within the country's borders cannot be in the true interest of its own people. For, those actions which are the cause of GHG emissions, are also the cause of accelerated destruction of our natural resources, such as forests, minerals, agricultural lands, water bodies, and leading to the unacceptable level of pollution of land, water and air. Hence adding to such activities will not result in the elimination of poverty, as has been made out by successive governments.

As has been noticed since independence, massive destruction of our natural resources have not been able to eliminate the poverty fully; but has led to increased destitution in many communities and in unhealthy air, water and food for all, while about 30% of the population are still without access to commercial energy such as electricity. So the impacts of high GDP growth paradigm for decades is there for all of us to experience.

Instead, shall we not focus on massive improvements in efficiency, DSM and conservation of our energy and other natural resources, and ensure equitable distribution of the resources?

A number of studies have indicated that the renewable energy sources can meet all our legitimate energy needs on a sustainable basis if we can shift to sustainable ways of living.

So the question is why Is India consuming its natural resources at such an accelerated pace?

Sanitation For All : Let us achieve the new SDG target.

The article is available at: <u>https://www.linkedin.com/pulse/sanitation-all-lets-achieve-new-sdg-target-helen-clark</u>.

Helen Clark, Administrator, UNDP spoke at the World Assembly of Women in Tokyo sponsored by the Government of Japan. One of the issues she spoke on was the importance of sanitation, with a particular focus on the needs of women and girls.

Around the world, 2.5 billion people are estimated not to have basic sanitation, and over one billion must resort to open defecation.

Lack of access to adequate sanitation puts the lives and health of women and girls at risk. As well, girls miss many school days and often drop out of school altogether because of lack of private toilets in schools.

Sanitation featured as a key area in the Millennium Development Goals, and this is carried through in the new Sustainable Development Goals. New SDG Six calls for the availability and sustainable management of water and sanitation for all by 2030.

Achieving that goal requires three things:

1. Leadership and political will. Access to sanitation for all needs to be placed at the heart of national development agendas.

2. *Investment.* The cost of achieving the SDG by 2030 is estimated at a cost of US\$27 billion invested each year until then - or around .036 per cent of global GDP. This is achievable.

3. Integrated and proven approaches which cut across ministries, sectors, and silos are needed.

Let us hope that sanitation will now get the attention it deserves. Access to it is a matter of human dignity and a basic right. It is also critical for poverty reduction and sustainable development.

COP21 Responding to Health and Data Challenges : Case for Climate Change and Atmospheric Pollution.

The article is available at: <u>http://www.iscintelligence.com/event.php?id=294</u> .

On 25th September, at the UN Summit in New York, world leaders embraced a sweeping 15year global plan titled "Transforming our world: the 2030 Agenda for Sustainable Development" and contained the agreement on a set of 17 goals and 169 targets that would come into effect on 1 January 2016.

Health and climate change topics have their own dedicated Goals: Goal 3. Ensure healthy lives and promote well-being for all at all ages, and Goal 13: Take urgent action to combat climate change and its impacts. Moreover, the aspect of health, environment pollution and climate permeate explicitly or implicitly other goals.

In a comprehensive, peer-reviewed and quantitative climate—health assessment to date, the World Health Organization (WHO) examined the global burden of disease already attributable to anthropogenic climate change up to the year 2000.

The study indicates that the climatic changes that have occurred since the mid-1970s could already be causing over 150,000 deaths and approximately five million 'disability-adjusted life years' (DALYs) per year through increasing incidences of diseases such as diarrhoea, malaria and malnutrition that occur mainly in developing countries.

It also estimates that the climate-change-induced excess risk of the various health outcomes will more than double by the year 2030.

In 2015, the WHO Executive Board endorsed a new work plan on climate change and health. This includes:

- **Partnerships:** to coordinate with partner agencies within the UN system, and ensure that health is properly represented in the climate change agenda.
- Awareness raising: to provide and disseminate information on the threats that climate

change presents to human health, and opportunities to promote health while cutting carbon emissions.

- **Science and evidence:** to coordinate reviews of the scientific evidence on the links between climate change and health, and develop a global research agenda.
- **Support for implementation of the public health response to climate change**: to assist countries to build capacity to reduce health vulnerability to climate change, and promote health while reducing carbon emissions.

Skilling India, skilling the world.

The article is available at : <u>https://www.linkedin.com/pulse/skilling-india-world-john-fallon</u>.

Prime Minister Modi's visit to London is a reminder that in the race to build a world of better education, few places compare with India for the scale of the challenge and the ambition. He has rightly highlighted the problem of **India's "acute skills shortage"**, and how this is hampering the pace of economic growth and undermining international competitiveness.

There are a number of reasons for this. Traditional rote-learning, for centuries the teaching style of choice, where students regurgitate knowledge, is increasingly out of sync with workplaces that value emotional intelligence and interpersonal skills. Team-building, conflict resolution, empathy, leadership, and resilience – this is the stuff of the successful 21st century worker; but it is not the stuff that schools are sufficiently good at teaching.

The Pearson India team recently published our annual Voice of the Teacher survey. **They found that 57% of Indian teachers consider their students insufficiently prepared for employment on completing school. Three quarters of teachers want greater industry input into course content** – a theme heard loud and clear when the Pearson board visited India last month.

Yet the infrastructure is there to make big improvements. Technology lets us learn what we want, when we want, at the pace we want. It can give us instant feedback and tell us where an individual -I - am going wrong and what I need to do to progress. And most importantly of all, it can do this for billions more people than the traditional classroom can. Not just access to learning - but also progress.

This skills challenge is not one of those great, intractable global issues. Solutions shouldn't be hard to come by. It will require closer collaboration between educators, and employers. Nobody knows better than employers what sort of skills are needed for the workforce, and nobody knows better than teachers how to impart these skills onto young people. Governments need to put in place structures and incentives which encourage this collaboration.

Then there's the education providers like Pearson, who also have a vital role to play, through businesses it owns like IndiaCan, which runs over 100 career coaching centres across India. Better employment outcomes are perhaps the ultimate measures of educational efficacy.

Free market forces and government policies may determine unemployment levels, but with the right education, nobody ever need be unemployable. **India needs to continue to think outside the box when it comes to skilling up its population.**

Get it right, and we all win: the school leaver gets the job, businesses get their

talent, and a nation continues to lift itself up.

Ten principles to help assess funding for local climate adaptation : Definitions.

The article is available at : <u>https://www.weadapt.org/knowledge-base/global-initiative-on-community-based-adaptation-gicba/ten-principles-to-help-assess-funding-for-local-climate-adaptation?utm_source=weADAPT&utm_campaign=3d47c60300-Monthly%20Newsletter&utm_medium=email&utm_term=0_be94db1743-3d47c60300-97775189.</u>

The Ten principles to help assess funding for local climate adaptation are:

- 1. **Equity:** Funding should target the most vulnerable geographical areas and groups.
- 2. Urgency: Disbursement should meet urgent needs.
- 3. **Efficiency:** Adaptation finance should be spent on local people.
- 4. Effectiveness: Interventions should reduce and not increase vulnerability.
- 5. Transparency: Stakeholders must have information on what funding is available, how it is deployed, and how it is used.
- 6. **Accountability:** Actions, measures and processes are dispersed to as local a level as is practical, and are channelled through a country's own institutions and systems.
- 7. Sustainability: Actions must be environmentally, socially and economically sustainable, with longer-term and scaling-up implications considered.
- 8. **Flexibility:** Results should be robust under a range of climate scenarios.
- 9. **Human rights:** Programmes should further the principles in the Universal Declaration of Human Rights.
- **10.** Participation: Planning should involve stakeholders across appropriate levels of governance and across civil society.

REPORT ON WORKSHOP to Strengthen CRZ Notification and Coastal institutions for protection of fisheries

The Coastal regulation of the country is crumbling with the part-time coastal institutions at the national and state level and non-existent coastal bodies at the district level. Recent changes to the Coastal Regulation Zone (CRZ) Notification, 2011, instead of strengthening these institutions that are in dire need of support, have diluted the notification.

In this context, a sharing workshop was organized at Red Cross Bhawan in Bhubaneswar on the occasion of World Fisheries Day. The workshop was organized by COAST COUNCIL in collaboration with CPR, A New Delhi based think tank, UAA & Odisha Traditional Fish Workers Union (OTFWU).

The event was graced by State Agriculture and Fisheries Minister Pradip Maharathy and

Health Minister Atanu Sabyasachi Nayak.

Mr Maharathy who inaugurated the event by lighting the lamp said, "in principal I agree the demands raised by the Fisher folks of Odisha and Government has already planned Housing, lean area Compensation and covering under Food security Act. I support the just demands raised by the Union and will call a high level meeting to consider 21 point demand submitted to me here, will also appraise the CM regarding this."

Atanu Sabyasachi Nayak also expressed solidarity with genuine demands of fisher folk and said I understand the situation as time to time I am updated on their problem from people of my constituency. He also said Naveen Patnaik Government is committed to solve problems of fishing community.

Ms. Meenakhi Kapoor of CPR presented the outcome of the study done across 9 coastal states of the country.

While outlining the objective Sudarshan Chhotray, convener of Coast Council said "Odisha having 482 long coastline is more vulnerable to frequent Natural Disasters and ill effects of Climate of Change, needs to pay more attention as far as regulations like CRZ. Needs a robust mechanism and effective enforcement of coastal regulation zone violation".

Meenakhi Kapoor on the other hand stressed on implementation of central guide lines and awareness among coastal communities like fishermen, salt workers Kewada Pluckers etc.

Mangaraj Panda of United Artists Association (UAA) urges upon both conservation and livelihood should go hand in hand. Among others Prasan Behera President and K Aleya, General Secretary of Odisha Traditional Fish Workers Union(OTFWU) spoke on the occasion. Leaders of Traditional Marine Fishermen from districts like B. Kotesh, Ganjam, Ms. Sakhi, Puri, Jibanlal Behera, Jagatsinghpur, Tusharkant Sardar, Kendrapara, Ratikanta Mallick, Bhadrak, Narayan Behera, Balesore also spoke on the occasion.

We the fishermen, Coastal Communities and civil society organizations of India, on the occasion of the World Fisheries' Day, urge the Odisha State Government and Indian Government to take measures to ensure the following for the fishermen of the country:

- ✓ <u>Active and District Level Coastal Committees</u>: The CRZ Notification mandates that in coastal districts DLCCs be formed and they should have minimum of three representatives of the traditional coastal communities. Most states have not gone beyond the prescribed number of three for community representation. A representation number in proportion to the population of the district or number of coastal taluka in a district would be a true community representation on DLCCs. Besides, DLCCs wherever being constituted have not been given a role in decision-making. Fishermen to have their say in the governance of the coasts the DLCCs should be involved in the process of project appraisals.
- ✓ Meaningful community participation in coastal planning: Currently, all states are in the process of preparing Coastal Zone Management Plans. Public Consultations are being held on the plans and maps prepared in the scale of 1:25,000. The CRZ Notification, 1991 also mandates that the CRZ maps are prepared in cadastral scale of 1:4000. We the common people do not make much out of the maps in the scale of 1:25,000 scale. CRZ maps of 1:4000 scale should be provided at the time of public consultation.
- ✓ <u>Community managed CVCAs</u>: Critically Vulnerable Coastal Areas are areas, which can be conserved in view of the protection of traditional livelihoods. The CRZ Notification

suggests 12 sites to be notified as CVCAs. The State Governments should involve fishermen in demarcating and identifying CVCAs in these 12 sites and in other ecologically fragile areas. Delineation of these and other ecologically fragile areas with immediate effect in pertinent to the survival of coastal livelihoods. Further fisher people and other coastal communities should be involved in the management of these areas as well.

- ✓ <u>Public participation in monitoring</u>: We spend the maximum time on the coast. We are familiar with the sea and most often than not we would be the first ones to notice any change to the coast. However, so far our role in monitoring is limited to only reporting violations to the coastal institutions. The coast would benefit if we are made part of evidence collection and assisting DLCCs in establishing violations. However, for this to take place the coastal institutions should be accessible to us whether through the DLCCs or 'Open Days'.
- ✓ <u>Transparency and easy availability of information</u>: With more powers to the DLCCs, it should also be ensured that the minutes of the DLCCs are put up on the website, are available in District collectors' office and with the community members of the DLCCs. The websites of the SCZMAs should be interactive and not just informative. While there are options of registering our grievances on most SCZMA websites, they should also be a mechanism to track action taken on those grievances. The websites can also collect and review suggestions for improvement in the implementation of CRZ norms.

Performance of Odisha Coastal Zone Management Authority(CZMA) So far

- Has held 27 meetings till date.
- more than 3 members from the coastal communities on DLCCs (Jagatsinghpur has 5 members)
- DCZMCs conducted public consultations on CZMP (as reported in the OSCZMA meeting minutes in November 2014)
- 178 projects examined till date
- "Case-wise investigation seldom happens" Mangaraj Panda
- Decision taken in Nov 2014- Copies of PPT 7 days in advance to members
- Definition of 'Appropriate Action' on violations is missing
- "CZMA writes to the collectors to take action but no action has been taken b/w 2008 and 2011." –Dr P.K. Mohanty, Professor, Behrampur University
- Decision taken in Nov 2014- Examine half yearly compliance reports from project owners

Only when these steps are achieved can the coasts and the fisher people can thrive. On this World Fisheries Day we appeal to the State Governments and the Ministry of Environment Forests & Climate Change of Union Government

Why Gender approaches matter to climate compatible development?

The brief for the COP at Paris is available at: <u>http://solutionexchange-un.net.in/ftp/clmt/resource/res_info_27111501.pdf</u>.

Earlier, we had apprised you of the ongoing CDKN-supported global research in India, Peru and Kenya led by Practical Action UK, together with Gorakhpur Environmental Action Group (GEAG), Institute of Development Studies and other partners on the Drivers and Challenges of Gender Equality and **Climate Compatible Development (CCD)** in urban location.

Findings are now emerging from the study which has generated usable insights for policy and practice, to foster inclusive development and climate interventions, from past and current

projects in disaster risk management and climate change adaptation.

We wish to share with you some preliminary findings:

Men and women have shared as to how climate change has different impacts on them in urban settings. We are also discovering a range of drivers and constraints to integration of gender approaches to support CCD as given below:

- Organizations using participatory methods to implement their activities were able to create an enabling environment for women to engage in the project, even if they did not follow an explicit gender approach.
- Requirements from donors to address gender considerations are key driver for organisations to apply gender approaches in climate change initiatives.
- Cultural and social barriers continue to restrict urban women's participation in decision making at community level and higher up in the ladder. On the other hand, many urban women play a leading role in disaster risk reduction and climate adaptation, for example by sharing new information (such as evacuation plans) with family members and by participating in disaster simulations and post disaster recovery.
- The lack of awareness and sensitivity towards gender equality within government agencies responsible for CCD policy, planning and implementation (from local to national level) limits the transformation of gender relations and reinforces prevailing gender bias.
- CCD programming that does not integrate a gender approach fails to monitor, evaluate or document progress and outcomes pertaining to gender relations and equality. Therefore, creating spaces for organisations to learn and reflect on their practice can support the incorporation of gender issues and improve project outcomes.

The brief for the COP at Paris is available at: <u>http://solutionexchange-un.net.in/ftp/clmt/resource/res_info_27111501.pdf</u>.

Coming soon in 2016: Full findings and recommendations will be published in early 2016, through a series of reports and briefs and presented at the Overseas Development Institute, London as well as other relevant conferences and events.

India : Rapid transition: Climate change and development plan of the Modi Government

The briefing paper is available at: <u>http://solutionexchange-un.net.in/ftp/clmt/resource/res_info_27111502.pdf</u>.

The Government of India, under Prime Minister Narendra Modi, is currently undertaking a rapid transition in its electricity, agriculture, and cities and urban transport sectors in order to reduce greenhouse gas pollution and enhance climate resilience while at the same time, stimulate social and economic development.

This briefing paper argues that the Modi government and major industrialised countries have a shared interest in fast tracking India's low-pollution and climate-resilient development plan (operationalised in the above sectors) and therefore, a shared interest in negotiating and implementing a strong global agreement to reduce greenhouse gas emissions.

Key findings:

- India's cities, villages and rural areas are highly vulnerable to the physical impacts of climate change, including increasingly frequent floods, droughts, and heatwaves, all of which have the potential to cause significant food shortages and major health crises.
- The Modi government's low-pollution and climate-resilient development plan can reduce the impacts of climate change in India while also delivering many social, economic and environmental benefits, for instance electrifying the homes of the poor, creating rural employment opportunities for young people, and averting premature deaths from acute respiratory infections from indoor and outdoor air pollution.
- India's actions are very important in moving forward a strong agreement in Paris and avoiding dangerous global climate change.
- India's Intended Nationally Determined Contribution lodged to the UNFCCC in October 2015 estimates that more than \$US2.5 trillion (at 2014-15 prices) will be required to meet India's low-pollution and climate-resilient development plan between now and 2030. Industrialised countries can help India meet and enhance its commitments by providing strong public and private sector finance and technology.

This paper is part of a series of briefing papers that examine the climate change policies of the countries key to a global agreement at the United Nations Framework Convention on Climate Change (UNFCCC) negotiations in Paris in December this year, and its effective and ongoing implementation.

Climate change is a key concern for the Modi government, and justifiably so. The threats posed by unmitigated global warming are becoming acute in India, and will only get worse. Indeed, India is highly vulnerable to the physical impacts of global warming. These impacts include increasingly frequent floods, droughts, and widespread food shortages and major health crises from heatwaves. Sea-level rise is also a major concern, for example, the greater city of Kolkata, home to more than 14 million people, is considered the most at risk urban population in the world to sea-level rise, while Mumbai, home to more than 11 million, is second.

To help tackle these challenges, the Government of India has played an active role in the UNFCCC negotiations, as well as cultivating bilateral relations on climate change. In previous UN negotiations, India has rightly emphasised the obligation on the part of developed countries to lead in mitigation in accordance with the principle of common but differentiated responsibilities.

This, however, may be changing. Indeed, Modi has signalled that India may assume some kind of leadership role at the Paris negotiations, explaining: 'India will set the agenda for the upcoming Conference of Parties'.

On the bilateral front, Modi has managed to secure billions of dollars from the US government to fund India's clean energy projects, released a memorandum of understanding with China committing to the UNFCCC process as a top priority to avoid dangerous warming, and has sought to cultivate a coalition of 50 nations committed to developing solar electricity to try to further reduce the costs of producing this technology.

Megacities will save mankind, not doom it : Cities Today might seem gridlocked by traffic and chocking in air pollution, but urban planning might actually be our only hope The article is available at : http://www.urbangateway.org/news/megacities-will-save-mankind-not-doom-it-0 . The future of the city is the future of our society. By 2050, 70 per cent of the world's population is likely to be urban, with many living in megacities of more than 10 million people. In some countries, the pace of change is extraordinary.

What took Europe 200 years is now taking 20 in China and India. In 1950, the fishing village of Shenzhen in south-east China had 3,148 inhabitants. By 2025, the UN predicts, it will exceed 15 million. Urbanisation has accelerated by a factor of 10, and this has been accompanied by a shift of balance from the so-called "developed" to "developing" countries. Much of this growth elicits fear and consternation.

Over the next decades, the onslaught of urban growth will happen in deprived parts of Africa and Asia that today lack access to basic services such as clean water and sanitation. Countless people will move into cities still struggling with uncontrolled development, lack of investment and poor governance.

Well-designed, well-governed cities will in fact improve the lives of billions of people who will be newly urban by 2050.

In an industrialised society, buildings and the movement of goods and people between them account for two-thirds of energy consumption. As a result, cities contribute to about 70 per cent of global CO2 emissions. But while this sounds like bad news, there is plenty of evidence to suggest that cities can be designed to be both productive and clean.

Stockholm reduced emissions by 35 per cent from 1993 to 2010, but grew its economy by 41 per cent, one of the highest growth rates in Europe. Copenhagen has done much the same. Cities with high quality of life are relatively compact and pedestrian-friendly, with good public transport and generous parks.

Good examples are not only to be found in affluent Northern Europe. Today, Medellín and Colombia's capital, Bogotá, are seen as examples of how to turn cities around through investment in infrastructure such as cycleways, bus rapid transit systems, libraries and schools – all driven by charismatic and committed mayors.

Design plays a huge part. Cities that are consistently rated highly by the public in terms of quality of life are relatively compact and pedestrian-friendly, with good public transport and generous parks and civic spaces. These more desirable cities are comparatively dense and have evolved historically from a traditional European concept. **A new study suggests that urban sprawl costs the US economy more than \$1 trillion annually.**

Across the globe, people are likely to live longer and healthier lives in cities. In most countries in the world, cities provide better access to education and health services. **The longest life expectancies today can be found in high-density, highly developed cities like Hong Kong or Singapore. Unlike cumbersome national governments and international organisations, cities can act quickly and decisively. When it comes to the future of life on Earth, cities are not the problem – they are the solution.**

London in the 19th century provides interesting insights. As it exploded with migrants attracted to urban jobs, it became the world's first megacity. And, like some megacities of today, it became over-congested, dirty, polluted and dangerous. Life expectancy for a man was less than 30 years. It was, as the late planner Peter Hall described it, the "City of Dreadful Night". However, by the late 1880s London had turned itself round. It invented the first form of metropolitan government in the world and initiated a programme of investment in a wide range of infrastructure: sewers, housing, parks, public transport and much more.

Despite all the problems that we experience in the city today, London is a reminder that big cities can be tamed, humanised and improved.

However, in order to do this, cities require leadership, strong design and focused investment, which is really the need of the hour.

Exacerbating Health Risks in India due to Climate Change: Rethinking Approach to Health Service Provision

The article is available at: <u>http://www.igi-global.com/viewtitlesample.aspx?id=140559&ptid=129596&t=exacerbating</u>

Human health status determines individual and societal wellbeing. Climate change induced health impacts are expected to put additional stress on human wellbeing and equity through intra-generational and inter-generational health outcomes. Understanding the climate changehuman health interaction is imperative for following a pathway of sustainable development. In India, there is paucity of evidence, assessment, research based knowledge and communication on climate change induced health risks, and intervention need assessments.

Simultaneously, there is a fair degree of inadequacy in the infrastructure for provisioning healthcare services. In our view the gap will become critical in the face of emerging climate induced health risks in India. Past research shows that the most important threat to India's sustainable development is poor performance in the health related indicator. Climate change will make it additionally worse due to the lack of preventive approach in the health sector.

In this perspective, we argue that, to ensure sustainable development in India and address the emerging health risks in a cost effective way, and for integration and strengthening of traditional scientific practices, there is a major need for development of a National Preventive Health Care Mission (NPHCM1) under the umbrella of NAPCC (National Action Plan on Climate Change). This mission mode can facilitate the sustainable development process in the country through targeted preventive actions that can reduce impacts on health and, to a large extent, reduce the accelerating pressure on the health infrastructure delivering cure-based solutions. The goal of this article is to develop the concept and arguments towards the development of NPHCM based on multi-disciplinary, multi-sectoral and multiple

health systems approach. A holistic social welfare based system that combines the best approaches in both traditional preventive and modern cure health systems and is governed by the socio-economic realities, is suggested.

Research Strategy and Rationale

This article is based on primary information gathered through expert consultations and data collected from secondary sources. The expert consultations are, by nature, unstructured and exploratory interviews. Experts with national and international experiences in the healthcare provisioning, healthcare policies, climate sciences, economic development, etc. have been consulted during the research process. Further, experts from both public and private sector, together with those from the bilateral and multilateral financing agencies have been interviewed.

We propose institutionalization of climate change induced disease category-wise multidisciplinary action research groups (ARGs). These ARG scan lead, plan and execute a holistic and preventive health care system. This will address climate change induced health risks in the country.

With a goal towards sustainable development, the 2009 NAPCC and the Indian Network for

Climate Change Assessment (INCCA) of the Government of India are providing a platform for multiple stakeholders to address climate change related problems in the country.

However, there is no separate action plan to target reduction of health impacts in the NAPCC. We propose that given the dearth of strategy and the immediacy of the problem, addressing the issues related to health impacts in mission mode would have the advantage of expediting the action through planned steps and targets while, simultaneously, generating ample scope for large scale mobilization of finance from public and private sources as well as global adaptation fund to enhance resilience. Climate data shows, unambiguously, a rising trend in the mean surface temperature of the earth.

While climate change is expected to exacerbate human health risks, it also provides an excellent opportunity for defining and implementing preventive actions. Developing nations like India, with low

infrastructure facilities, limited resources, varied development priorities and, often with large population, are particularly vulnerable to health impacts - more so under the climate change regime.

The greatest challenge facing the current Indian health service provisioning system is that it has to cater to the health service needs of its large population within a short time and with sustainable impact. Limited health 'cure infrastructure' (low per capita availability of doctor, hospital beds, etc.), lack of qualified health practitioners, absence of a strong monitoring system in disease surveillance and rising cost of 'cure infrastructure' are some of the major drawbacks of the existing system in India.

There is therefore, a need for mainstreaming more preventive measures which will enhance human health resilience and make the population less exposed and more resilient to the predicted impacts of climate change.

To provide preventive care to the Indian population, a paradigm shift in strategy is required. The new regime needs to emphasize on an integration of 'traditional preventive health care systems' with modern cure targeted pharmaceuticals and non-health sector interventions.

Such a system is expected to reduce the long term demand for cure infrastructure and will provide a more holistic inclusive solution to the Indian problems.

Many thanks to all who contributed to this issue of Update!

If you have items to feature in the Updates, please send it to Solution Exchange for the Climate Change Community at : <u>se-clmt@solutionexchange-un.net.in</u>

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