



## Table of Contents

A.	BACKGROUND .....	1
1.	Climate Change & the Indian State .....	1
2.	Milestones.....	1
3.	Varied Responses to Climate Change .....	1
3.1.	Macroeconomic Policy.....	1
3.2.	Corporate Response.....	2
3.3.	Civil Society .....	2
4.	Local Environmental Positions .....	2
4.1.	How the Rural Poor understand Climate Change .....	2
4.2.	Garner & Project .....	2
4.3.	A Sense of Purpose .....	3
5.	Business Opportunity.....	3
5.1.	Providing a vital Environmental Service to Society at large.....	3
5.2.	Offsetting – Cap & Trade.....	3
5.3.	Clean Development Mechanism (CDM).....	3
6.	Climate Projects .....	4
6.1.	Business Ventures .....	4
6.2.	Objectives.....	4
6.3.	Finances .....	4
6.4.	Feminine nature of Climate Projects .....	4
7.	ADATS.....	5
8.	Fair Climate Network .....	5
8.1.	The Platform .....	5
8.2.	FCN Tech Team .....	6
8.3.	FCN Projects .....	6
8.4.	FCN Standards.....	6
9.	Financing Climate Projects.....	7
10.	The Life of CDM Projects.....	7
B.	CRITIQUE .....	8
1.	Development NGOs .....	8
2.	Coverage .....	9
2.1.	Geographic Area .....	9
2.2.	People .....	9



2.3.	Membership based People’s Organisations.....	10
2.4.	Impediments to Unity .....	10
2.5.	Size & Scale .....	10
3.	Staff.....	11
3.1.	Project Preparation.....	11
3.2.	Implementation .....	11
3.3.	Monitoring, Repair & Maintenance .....	12
	Maintaining Outputs .....	12
	Pursuing Outcomes .....	12
	Redefining Maintenance.....	13
4.	Performance .....	13
4.1.	Cumulative & Within-month Functionality.....	13
4.2.	Drop in Functionality.....	14
4.3.	Causes .....	14
4.4.	Who Maintained their Biogas units? .....	14
	The Matter of Fact Ones .....	14
	The Climate Conscious .....	14
	The Twice Shy.....	15
	Carbon Revenue .....	15
4.5.	The Ones Who Did Not .....	15
	Upward Mobility .....	16
	Real Constraints Faced by the Poor .....	16
	Selection of End Users .....	16
	The Wanton and the Careless.....	16
5.	NGOs and the State.....	17
5.1.	CDM Project Proponents .....	17
5.2.	The Relationship.....	17
5.3.	Collaboration.....	17
5.4.	NGOs and the State – Complementary Roles .....	18
	Decentralised & Diverse Endeavours.....	18
	Role of the State .....	18
	Complementation .....	18
	A Final Push .....	19
	The End of the Projects Mode .....	19



## A. BACKGROUND

### 1. Climate Change & the Indian State

Though it was environmentalists, scientists and climate activists who flagged Human induced climate change 3 decades back, India’s political and bureaucratic leadership played a proactive role on the world stage when they took over.

It is ironic that while India was able to find an elegant balance between desperately needed development goals and reducing Greenhouse Gas emissions; some in highly industrialised economies found the task impossible. They opted for quick short-term results over a more sustainable future.

### 2. Milestones

1994 UNFCCC	27 years back, while the world accepted the science behind Climate Change as a generic truism, India was one of the first countries to recognise it as an existential threat, long before visible signs of catastrophic climate change started appearing.
1997 Kyoto Protocol	3 years later, our stand on common but differentiated responsibilities (CBDR) and categorising 37 polluting countries as “Annex 1” was internationally accepted, albeit with some reluctance.
2005 Marrakesh Accord	It took another 8 years to operationalise the Protocol and adopt 3 market mechanisms to implement Kyoto – Clean Development Mechanism, Emission Trading System & JI.
2009 COP15, Copenhagen	4 years later, leadership provided by India within the newly industrialised countries (BASIC), in order to make a critical appraisal of inadequate responses, was widely acknowledged and deeply appreciated.
2015 Paris Agreement	5 years back, we recognised that the situation has become critical, abandoned our CBDR stand and accepted that every single country had to set targets and move towards zero-carbon growth if at all our species was to survive.
2021 Today	Today, there are hardly any climate deniers. All 196 countries finally agree, <i>but only after</i> the Intergovernmental Panel on Climate Change (IPCC) declared that we may have crossed the tipping point.

### 3. Varied Responses to Climate Change

#### 3.1. Macroeconomic Policy

Scientists, specialists and industry advise to shape national, international and inter-governmental responses needed to make systemic macroeconomic policy adaptations to climate change.

However, being an existential threat that affects every single aspect of life and living of every single sector, each economic stakeholder comprising business, trade, manufacture, marketing, service providers and others, sooner than later, develop their own understanding and craft separate responses.



### 3.2. *Corporate Response*

Influenced by climate change, enlightened business leaders in the corporate sector have started to rediscover their products/services, redefine viability, relearn processes, and reshape enterprises. They see imminent limitations in the extractive and non-participative economies of today. They know that the new climate friendly economies of tomorrow need to be carved with re-imagination and re-invention.

### 3.3. *Civil Society*

Civil society, citizen groups, religious bodies, *et al*, with their own take, influence individual actions of members based on their own rationale and sense of climate justice. While this may or may not have any quantitative impact, it has proved to be imperative to build consciousness, establish norms, and compel everyone to demonstrate climate integrity.

The greatest contribution of civil society has been to mainstream climate into a comprehensive world view; an ideology that is refreshingly based on solid science.

## 4. Local Environmental Positions

### 4.1. *How the Rural Poor understand Climate Change*

The rural poor, who are the worst affected and least able to develop coping mechanisms had hitherto been left out of the debate. They have their own view of the changing climate through the prism of the local environment. These may be based on mythical interpretations, imaginary exaggerations, and even fatalistic acceptance. Nevertheless, they are among many perfectly valid and legitimate positions on climate change. They stand tall as equal with all other frameworks since they too shape survival strategies and thereby contribute to the overall global response through everyday actions.

I am often asked, by well-meaning people, whether the actions of bit players on the fringe of mainstream economy really matters. Especially when it is so evident that just a small section steers the creation and distribution of wealth. Scientist colleagues ask how we can give credence to myth, imagination and fatalism.

My response is neither moral nor altruistic. Morality is culturally determined and conveniently varies from group to group. Altruism depends on where one stands in social ranking. Instead, these questions need an objective answer.

Climate is a central determinant of continued Human life on earth. That is precisely why adverse climate change is an existential threat. When the essence of economic activity is understood as Human interaction with Nature, the sum total of all actions of everyone on planet Earth is embodied in our collective response to climate change. No section of society can be ignored.

### 4.2. *Garner & Project*

Their take may not have an inherent dialectical value, ideation and resource to go beyond mere survival. This is where the role of intellectuals who accompany the rural poor comes into play; to explore and avail opportunities, adapt and facilitate the development of more effective coping mechanisms that complement and supplement the mainstream response.

The Fair Climate Network is a 14 year old international platform that garners and projects hundreds of local environmental takes on Climate Change, as experienced by the rural poor who are negatively affected by erratic and unpredictable weather patterns in their respective regions.



### 4.3. *A Sense of Purpose*

This view of the changing climate through the prism of their own local environment is a powerful driver. A genuine dialogue between primary stakeholder perceptions/experiences on the one hand, and climate science provided by secondary stakeholders on the other, is a vital precursor to taking up climate projects.

Only a deep understanding of how the extractive economy callously exploits natural resources and a shared belief in an alternate paradigm will sustain the prolonged attention span needed to develop, implement, maintain and monitor long-term climate mitigation and adaptation projects over several decades. It provides a sense of purpose and the *raison d'être* that Humans subconsciously seek in all sustained activities.

Failing to arrive at a common perception and joint commitment through genuine, patient and long drawn two-way conversation leads to less than optimal results in many a climate project.

Perfunctory planning exercises through standardised formats, merely termed “stakeholder consultations”, will not suffice. Nor will the setting up of functional groups that invite equalised participation in predetermined project designs.

## 5. Business Opportunity

Climate projects offer the rural poor a unique business opportunity par excellence.

### 5.1. *Providing a vital Environmental Service to Society at large*

The “adaptation” angle in climate projects alleviate some of the adverse effects of climate change like depleting biomass, lack of potable water, poor air quality, energy scarcity, etc.

The “mitigation” aspect addresses the fundamental cause (excessive Greenhouse Gases) that does not visibly and directly affect the rural poor. However, addressing mitigation allows the rural poor to provide a vital environmental service to society at large. Being able to measure and quantify Greenhouse Gas avoidance (biogas; solar) and reduction (tree planting; low carbon farming) allows them to sell these avoidances/reductions as certified emission reductions.

### 5.2. *Offsetting – Cap & Trade*

Annex 1 countries who, under the UNFCCC, are obliged to reduce their GHG emissions pass down their national targets to different sectors. These targets are further tossed down the line till each individual enterprise (a manufacturing unit, factory, transport company, sales hub, etc.) receives a nationally determined compliance quota. A sizeable portion of these quotas are to be met through real reductions by replacing inefficient machinery, switching to solar, sourcing green, altering processes, etc. But a certain percent can be met through Offsetting.

### 5.3. *Clean Development Mechanism (CDM)*

Offsetting is a process by which economic actors in non-Annex 1 countries, who were not obliged to make any GHG reductions, do so anyway through projects registered as Clean Development Mechanism (CDM). Once quantified and certified as genuine and additional by the UNFCCC, these Emission Reductions can be sold to individual Annex-1 country enterprises to offset the permissible portion of their compliance quota.

The Emission Trading System (ETS) facilitates this as a UNFCCC regulated compliance carbon market.



### 6. Climate Projects

#### 6.1. Business Ventures

Climate projects, be they undertaken by companies or communities, are business ventures. Pro-poor projects, even when facilitated by development agencies and NGOs, are not charitable projects, handouts or entitlements. They are decentralised community owned and managed business ventures.

#### 6.2. Objectives

- A. Switch from non-renewables to renewables.
- B. Solve practical gender needs – clean cooking, saving time, repetitive drudgery, child care, indoor air quality, diminishing returns from fields that have exceeded their carrying capacity, etc.
- C. Earn Carbon Revenue by selling CERs to:
  - i. Compliance Buyers – i.e. industries who need to Offset a part of their GHG Emissions.
  - ii. Voluntary Buyers who wish to demonstrate carbon integrity by moving towards zero-carbon operations.
- D. Meet strategic gender needs by gaining a position of strength and recognition *within their families*.

#### 6.3. Finances

Capex to implement technologies like Biogas, Solar, fuel efficient Woodstoves, planting Trees, etc. obtained by selling the first few years' *yet-to-be-generated* Emission Reductions at the *actual-cost-of-production* to carbon investors through forward sales with upfront payments.

After meeting delivery targets and clearing commitments, carbon revenues to be distributed to End Users of technologies in direct proportion to volumes they generate/sequester.

#### 6.4. Feminine nature of Climate Projects

There is a unique difference in off-farm and non-farm pursuits that rural women take up, when compared to their male counterparts. Male businesses aim only to make money. Businesses undertaken by women try to meet practical gender needs while, at the same time, also aim to make money.

*“Men buy cross-bred cows to sell milk, but there won't be a glass of milk for the child in the house. Men buy a fancy pair of bullocks, which they feed the whole year round in order to put to work for less than 30 days during agricultural operations.*

*“We, on the other hand buy 2 sturdy cows that can do a little bit of light ploughing, and also give half a litre of milk every day for our children and to make some chai.”*

*“When we run a small shop or eatery, our children never go to school hungry.*

*“So too a small shop or eatery, stitching readymade gowns and blouses at home, and selling a basket of vegetables.”*

Rural women find that climate projects fit into their understanding of business ventures.



### 7. ADATS

ADATS is a 43 year old grassroots NGO working with 55,010 small and poor peasant families from 1,257 villages of Chickballapur District, Karnataka. For the past 26 years, we have implemented community owned and managed climate projects. <https://adats.com/>

More than 22,000 rural women reduce GHG and, at the same time, earn carbon revenue by providing a vital environmental service to society at large. Another 1,100 farmer families have switched to tree crops and sequester GHG. End Users of technologies, after thoroughly familiarising themselves with climate science and the offset mechanism, are encouraged to see themselves as “business women” and not recipients of anyone's charity.

- Long before Kyoto and Marrakesh, we developed a model to plant trees in this part of the world, calculate GHG sequestration, and offer it to emitters in the other part of the globe.

In April 1998 the DoE, US government, certified it as an Activities Implemented Jointly (AIJ). In 2011 this project was registered with the UNFCCC as one of the world's first large-scale Afforestation/ Reforestation projects. <https://adats.com/cdm/regff>

Over the past 26 years more than 3,000 families attempted to switch from *timely* rain dependent field crops to more hardy tree crops. 1,103 families from 250 villages planted 2,35,595 saplings with their own resources and have a survival rate of 55%. They have, to date, earned ₹ 3.84 crore as carbon revenue and will continue to do so for the next 50 years.

<https://adats.com/cdm/forestry>

- Immediately after Marrakesh Accord, ADATS registered the world's first CDM project in December 2005 and built 5,500 domestic Biogas plants for as many “businesswomen”. After clearing their “debt” with a French carbon investor, they have earned ₹ 5.12 crore as carbon revenue and will continue to do so for the next 7 years. <https://adats.com/cdm/velcan>
- In 2010 we registered yet another CDM Project and built 11,633 more Biogas units. This group of End Users are in the final year of meeting their delivery commitments to a Dutch carbon investor. [https://adats.com/cdm/bcs\\_biogas](https://adats.com/cdm/bcs_biogas)
- In 2020 we registered a fuel-efficient Woodstoves project for 4,043 very poor women who do not own cattle or have space near their kitchens. This project is being financed by a self-perpetuating rotating fund with startup capital provided by a philanthropist friend from Norway. [https://adats.com/cdm/bcs\\_ics](https://adats.com/cdm/bcs_ics)

### 8. Fair Climate Network

FCN was set up in 2007 to share the experiential learning of ADATS with other grassroots NGOs.

#### 8.1. The Platform

A wide range of committed and competent individuals and organisations, including grassroots NGOs, climate activists, journalists, environmental NGOs, northern NGOs, youth, carbon investors, social entrepreneurs, carbon auditors, suppliers of green technology, IT professionals, finance experts, management consultants, etc. got together with a dual objective:

- i. Develop, defend and propagate region specific local environmental takes on Climate Change.
- ii. Share the experiential learning of ADATS to develop, register and implement Climate Projects that help the rural poor cope with adverse effects of climate change and, at the same time, reward them for avoiding/reducing Greenhouse Gases.

Very soon it was realised that though ADATS had managed with in-house expertise, other grassroots NGOs would require a high degree of professional expertise to meet the second objective.



Expertise is needed not just to register a project, but even during implementation, monitoring and verification in order to meet constantly evolving, complex and fairly esoteric requirements of the UNFCCC.<sup>1</sup>

### 8.2. FCN Tech Team

An FCN Tech Team comprising a senior CDM Specialist, NGO Dynamics, Projects Managers, Facilitators and Finance Manager was set up to provide three sequentially phased services:

#### Phase I

Assist grassroots NGOs to choose apt and implementable technologies that can be interpreted as Climate Mitigation Projects and generate carbon offsets.

*(for grassroots NGOs who wished to explore Climate Mitigation Projects and carbon revenues as a strategy for pro-poor sustainable development)*

#### Phase II

Assess the baseline, choose a methodology, make carbon calculations, determine monitoring protocols, write the Project Design Document (PDD), validate with an UNFCCC accredited carbon auditor, and register under CDM and/or Gold Standard.

*(for grassroots NGOs who decided to develop Climate Mitigation Projects)*

#### Phase III

Assist NGOs to develop structures and systems for project implementation and putting monitoring protocols in place, as per registered PDD requirements, and conduct biennial verifications and issuances.

*(for grassroots NGOs who have registered Climate Project and identified a Carbon Investor)*

### 8.3. FCN Projects

33 Member NGOs developed 38 climate projects, across India, to enable 3.6 lakh families to make an annual reduction of 8.55 lakh tonnes GHG. These projects include domestic Biogas, Photovoltaic Lamps, Fuel Efficient Woodstoves, Afforestation/Reforestation and Low Carbon Farming.

16 of these projects are currently being implemented across India and Nepal. The remaining project have not yet been able to attract ERPA financing.

### 8.4. FCN Standards

The Fair Climate Network has 2 uncompromising conditions before we offer support to develop, source finances and implement Climate Projects:

- i. Community ownership & management of Climate Projects by the End Users of respective technologies
- ii. Upfront, open, transparent and legally binding Carbon Revenue sharing agreements between the Project Proponent (grassroots NGO/CBO) and End User families

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<sup>1</sup> Even ADATS, with all our tech savviness, lost out on two occasions.

Once when registering our A/R project when 2 years of painstaking efforts were rejected by the carbon auditor. See <https://adats.com/cdm/regff>

Second time when 2,774 End User women failed to properly monitor as per PDD parameters and not a single tonne could be verified. See [https://adats.com/cdm/bcs\\_ics](https://adats.com/cdm/bcs_ics)





FCN also insists that climate projects should be engendered with women occupying a central place as owners and controllers of finances.

<https://fairclimate.com/library/docs/6/Engendering%20Climate%20Projects.pdf>

### 9. Financing Climate Projects

The fundamental principle upon which the FCN marketing mechanism is based is that hundreds of thousands of rural women provide a valuable environmental service that no one else can offer.

Enlightened corporates need credible Carbon Offsets to demonstrate their commitment to maintaining climate integrity. The Fair Climate Network brings both parties together.

FCN acts as an aggregator of not just Greenhouse Gas reductions, but also the powerful stories that go behind their generation.

These Offsets are either bought by an Annex 1 country entity that wants to meet its compliance quota, or by an enterprise that wishes to demonstrate its commitment to maintaining climate integrity by publicly retiring in the UNFCCC Registry. When done by an Indian corporate in a non-Annex I country, where there is no compliance regulation, the message is even more powerful

- FCN Tech Team assists the project to develop open and transparent financials and arrive at the actual cost of implementation, maintenance, monitoring and verification.
- A corporate agrees to purchase *yet-to-be-generated* CERs at the *actual-cost-of-generation*, over a period of 7-8 years.
- Emission Reduction Purchase Agreements (ERPA's) are entered into with corporate bodies who wish to offset a part of their GHG Emissions with valuable Carbon Offsets that have powerful stories of grit and struggle behind their generation.

During the first 7-8 year ERPA period when all CERs are delivered to carbon investors, expenditure in a typical Biogas project breaks into project implementation (55%), repair and maintenance (4%), monitoring, verification/issuance (14%), and field salaries/expenses (26%), provided NGO overheads are kept at zero.

### 10. The Life of CDM Projects

CDM, under the Kyoto Protocol, ended on 31 December 2020. 7,851 projects and 340 Programmes of Activities were registered, of which only 3,274 projects (42%) and 86 PoAs (25%) have been issued 2,115.65 million CERs as of today.

After the expiry of the Kyoto Protocol, there is no more distinction between Annex 1 and non-Annex 1 countries and therefore the rationale for the former offsetting a part of their emissions through CDM disappeared. Under the Paris Accord, *all countries* have to reduce their emissions.

However, since billions have been invested in the Emission Trading System (ETS) over the past 14 years, other schemes may continue to recognise existing CDM activities as bilateral programmes that make use of results-based climate finance, giving market predictability for current CDM participants.

The UNFCCC is also engaged in promoting CDM as a tool for uses other than offsetting, including assisting host countries achieve their Nationally Determined Contributions under the Paris Accord. Therefore, the UNFCCC is temporarily continuing CDM, pending approval by COP26 in November '21. It is therefore possible that the CDM Executive Board continues to register activities after 2020 and makes available an enhanced online platform for voluntarily cancelling CERs.

Another possibility is that CDM remains instrumental as a tool for delivering results-based mitigation using its voluntary cancellation feature. In the voluntary market, many certification bodies like Gold Standard are discussing the way forward to transition to Paris Agreement.

## B. CRITIQUE

*2050 is fast approaching. Nations, corporates, business leaders and informed individuals were acutely aware that time was running out. The IPCC had warned that we have crossed the tipping point. Yet, till very recently, responses didn't seem to match the realisation. They appeared casual and indifferent, bordering on the callous; defensive comebacks with metaphoric shields up and weapons drawn.*

*The rural poor, on the other hand, with lives intertwined with nature and bearing the direct brunt of climate change and unpredictable weather patterns, have an intuitive grasp even if not based on datasets and scientific explanations.*

*Community-based climate projects facilitated by grassroots NGOs have, for the past decade and more, tapped this intrinsic potential in as serious and responsible a manner as possible.*

*We will now critique these efforts in order to identify lapses and make improvements.*

### 1. Development NGOs

NGO is a generic term that embraces all statutorily registered and other non-governmental bodies, loosely clubbed under the umbrella of civil society.

- They include bodies of do-gooders who do a spot of social work without any critical analysis; who do not reflect on the structural causes of poverty or question inequities; who do not speak of empowerment or entitlement.
- Some specialise to operate only temporarily, providing relief in the immediate aftermath of calamities with great compassion and not bound by bureaucratic procedures which could delay responses.
- Others work on specific topics like ecological restoration, sustainable agriculture, community health, education, etc. and develop a fairly high degree of sectoral competence.
- All social workers are not philanthropists merely offering succour to the needy. Many make sound assessments of inadequacies and work in a structured manner, providing resources and infrastructure for comprehensive rural development programmes.
- There are NGOs who support activists and field work while, at the same time, lobbying causes and undertaking campaigns.
- Then there are individuals and small groups who live and identify with the underprivileged, and together attempt to change local situations and power balances between people and nature, oppressors and the oppressed, men and women, ethnic groups.

They are not haunted by the constant nervousness that only funding and projects will allow them to contribute. ADATS' own involvement started this way for the first 3-4 years.

<https://adats.com/home/history>

- And finally, there are grassroots NGOs and community-based organisations (CBOs) facilitated by them who together critically analyse socioeconomic situations and evolve relevant and targeted responses. They aim to make fundamental alterations in patterns of discrimination, oppression and subjugation. Bottom-up planned and executed projects, programmes and activities undertaken by them empower communities and alter the skewed power balance in village societies.

Over the years, there have been many shifts in the role played by grassroots NGOs, pertinent to the times and situation. Along with changed functions, their relationship with the State



swung from cooperation to adversarial. Elsewhere, we have traced this evolution in some detail. Please see <https://adats.com/documents/book5/download/0515.pdf>

Community-based climate projects are best implemented by this last category. Among them, those with an established socio-political presence and proven staying power to implement 10-60 yearlong projects. For them, climate projects come atop functional unity and add to the social capital built through years of disciplined unity and struggle.

The reason is not just because they are intimately rooted in communities. It is also because effective climate interventions do not only aim at alleviating the negative effects of climate change through *Adaptation* measures. They also address fundamental issues of global inequity and injustice. This inherent ideological bent of community-based climate projects fits pat into the values, philosophy and lifestyle practices of grassroots NGOs.

Furthermore, addressing inequities demands a fundamental rethink on societal norms and tough calls to abandon mainstream comforts. Strenuous and labour-intensive everyday demands to lead sustainable lifestyles is not quite as easy as portrayed in romantic presentations of green living.

Preparing meals with primary farm produce is not as easy as cooking with processed products. Simultaneously tending to multiple standing crops and harvesting different plant and tree products all year round is not easy. Rearing milch animals, collecting cow dung and hand mixing gobar every morning and evening to fire a biogas unit follows a rather rigid schedule.

## 2. Coverage

### 2.1. Geographic Area

The influence of grassroots NGOs/CBOs spreads in concentric circles. They have considerable socio-political clout in one or more core villages/clusters they operate out of. This presence wanes as one moves farther from the core centres. While this is true for all NGOs, it is especially so for those who pursue a transformative agenda of community organisation and empowerment.

Degrees in influence will reflect in not just implementation and monitoring efficacy, but also in the delivery of timely and effective repair/maintenance services. Biogas units in the core centres will be of a higher quality than those built in the outreaches; End User women will get a timelier response to their complaints; data to monitor daily usage will tend to be more accurate.

If and when acknowledged, this deficiency will correct itself over time. As and when both, project proponents and End Users recognise the pattern, already decentralised structures of grassroots NGOs will become even more so. Many more core villages/clusters will gradually begin to assume responsibilities. The overarching reach of the NGO's socioeconomic agenda, not just in climate change matters, will dramatically increase.

### 2.2. People

Societal transformation, by definition, runs against the grain. It challenges mainstream norms, beliefs and practices; be it misogyny, sexism, chauvinism, discrimination, superstition or sectarianism on the one hand, or senseless exploitation of natural resources on the other. Thereby, the number of families influenced by progressive and transformational messages, values and everyday life practices propagated by grassroots NGO will be limited.

While the multitudes may, for example, avail benefits like children's schooling, those who genuinely believe in the exception-free equality of the girl child will be far less. While people across caste divides may exhibit functional unity to collectively bargain and together aggregate/market their produce, the ones who break out of narrow and parochial personal identities/practices to forge a



genuine unity will be far less. While many women may avail reproductive health services, very few will strive for strategic gender gains to fundamentally alter positions *within their families*; menfolk who openly support feminist struggles will be even fewer.

### 2.3. *Membership based People's Organisations*

As a result, the so-called "target group" of an empowerment-based grassroots NGO, as well as the membership of a CBO facilitated by it, will hardly ever be an entire caste-class comprising all the poor. Except for brief interludes when particular issues are being addressed, it will never be "*all the Dalits*" or "*all the fisherfolk*" or "*all the women*" in even a single village; let alone a district or region. This is where the "*membership-based*" definition of transformative CBOs comes in, with individuals and families from a particular caste-class consciously opting to participate in a formally structured and disciplined unity; an entirely different concept from "membership fees" in functional groups.

### 2.4. *Impediments to Unity*

When we flaunt Unity as universal panacea, we do not address the most fundamental of all impediments that prevents genuine Unity.

As groups or communities, people want to "*be better than some other; any other*"; a yearning that is stronger than material needs. As long as they can identify a caste or community or any grouping that is "*lesser*" than their own, economic deprivation and physical discomfort can somehow be tolerated. Poverty and a lack of resources becomes unbearable only when one cannot identify anyone worse off than oneself in pompous and inflated self-perceptions of proper behaviour, mannerism, diction, enunciation, diet, attire, physical features, genealogy, faith and worship – i.e. social standing. If that "*lesser other*" can somehow be blamed for one's own lacking, all the better.

This is not a natural or species specific Human trait. It is a deliberately constructed mindset in a stratified society. It serves to detract the population from non-egalitarian and discriminatory realities.

On the other hand, the biological truth is that no one is equal, even within the same group, community or gender category. We are not only different from each other; some are better than others in something or the other. We recognise these differences in appearance, traits, abilities, skills, possessions, *et al* as arising from each person's individual makeup. Diversity is not just accepted; it is expected. It doesn't prevent us from intermixing and healthy intercourse.

It is the artificial social constructs of caste and eugenics that tries to attribute these to social ranking, It is a mistake to believe that this indoctrinated mindset plays only in the upper castes and economically better off. As just explained, it conditions the poor in the manner they look down at each other and is the greatest impediment to affecting genuine unity across narrow and parochial caste lines and gender divides.

### 2.5. *Size & Scale*

Herein lies the paradox. While it is grassroots NGOs and CBOs who are best suited to implement community-based climate projects, they have structural limitations in geographic reach and population coverage. Climate projects, on the other hand, in order to be financially viable and also to make a discernible impact on the environment, need to be of a certain size and scale.

- Overheads, monitoring, verification and issuance costs of a domestic Biogas project will be financially viable only when distributed over 5,000 or more units. Unless these are in a fairly concentrated geographic region covering more than half the population, there will be no measurable impact on natural regeneration of the surrounding biomass.



- Afforestation/Reforestation projects need a far bigger target area to cover far larger preparatory, monitoring and verification costs.

This, apart from the business sense needed to handle large funds, meet statutory requirements and deliver on contractual negotiations. Fairly effective grassroots NGOs/CBOs suddenly find themselves out of their league when they have to deal outside their “target group” in geographies where they have only a cursory presence.

### 3. Staff

Community-based climate projects are kickstarted with extensive training on earth science, climate science, offset mechanism and the extractive political economy to NGO leaders and the core staff in order to place proposed efforts in a framework. As earlier stated, project delivery personnel need a rational understanding based on science, and an intrinsic grasp on climate change in order to develop a sense of purpose.

Three entirely different mindsets, capabilities and skillsets are needed during the decadal lifespan of climate projects. Many a rooted grassroots NGO may not have the resources to deploy these different types of project delivery personnel. For reasons already elaborated, resource rich NGOs may have other capabilities, but not the organisational culture and socio-political clout to undertake climate projects.

#### 3.1. Project Preparation

Besides information that can be gleaned from literature scans, satellite imagery, *et al*, the preparation of climate projects needs exhaustive and authentic data and information. The most basic of these is demographic and energy usage details on participating families, obtained through individual door to door surveys coupled with astute observation. Land use projects need an accurate delineation of every single discrete plot on which trees are to be planted, sustainable agriculture undertaken, or low carbon farming practiced.

Much of this information is required to calculate pre-project Greenhouse Gas emissions and on-site carbon stock to determine the baseline. The remaining is to objectively measure outputs and impact. Gathering this data and eliciting information is neither easy nor quick. It requires painstaking effort by development workers who have a high degree of intimacy with participating families. Temporarily recruited new staff will hardly be able to do justice; nor can the task be contracted to research students. It requires time consuming involvement of longstanding core staff of the grassroots NGO who already enjoy a relatively high degree of trust and acceptance.

I have already spoken of the basic Human need for a sense of purpose to recognise a *raison d'être*. This applies not just to secondary stakeholders, but also to primary stakeholders – End Users of technologies and participating families. In order to obtain authentic information, every single “interview” has to be preceded by or accompanied with an explanation on climate change and efforts planned to mitigate.

#### 3.2. Implementation

The actual implementation of a registered climate project – be it construction of Biogas units or installation of fuel-efficient Woodstoves or preparing fields, constructing water tanks and planting/replacing saplings – may well start with a lot of excitement and enthusiasm. The able bodied have to be mobilised to excavate biogas pits for single women, water sharing arrangements have to be made for those without borewells, border disputes need to be amicably settled.



Fervour is inversely proportional to repetitive performance and diminishes when rote sets in. Procuring construction material for tens of thousands of units and supervising hundreds of masons needs a totally different kind of effort and organisation that exhilaration alone cannot support for very long. It quickly boggles the brain with repeatedly performed mindless routines. Motivated youth who joined grassroots NGOs with radical thoughts and revolutionary ideals are hardly suited to perform mundane tasks, days on end, year after year.

Very quickly, more enterprising masons are upgraded to *Maistry* status and delegated to perform procurement and supervisory tasks. With a little training and handholding, they learn to record unit-wise and daily/weekly progress in the digitized monitoring solution. A new cadre of Case Workers completely replaces the initial staff.

Implementation may appear to proceed smoothly, as per schedule and targets. But the organic link between the pre-project preparatory phase, when shared goals and objectives were mutually evolved, gets considerably weakened when the original development workers gradually distance themselves from the project.

This dichotomy comes into forceful play in the post-implementation phase when daily usage/tree survival has to be continually monitored, and repair and maintenance services provided.

### 3.3. *Monitoring, Repair & Maintenance*

Placing monitoring tasks in silos within an organisation reduces it to a mundane recording of numbers and tabulated data. They hardly get looked at, reflected upon, or critically analysed to recognise patterns. At most, they merely list errands to be run and chores to be performed.

And yes, the data does enable carbon auditors to conduct biennial verifications and determine GHG reductions, much like financial audits undertaken to merely meet a perfunctory statutory compliance.

#### MAINTAINING OUTPUTS

Normal enterprises supply products and services to their customers. Products like mobile phones and kitchen appliances, and services like internet connectivity and transport are the *Outputs* of these enterprises. After-sales support is provided to help their customers keep products/services in good working order, within the boundaries of warranties that do not cover externalities. The bread and butter of such enterprises is determined by the quality of products followed by support given to their *Outputs*.

*What their customers achieve through the use of these products/services is outside the scope of and beyond the concern of the enterprise.*

This applies even to noble enterprises like schools, colleges and hospitals.

At this elementary level, repair and maintenance is just about getting the job done in order to keep the thing running. It can be performed in climate projects by an unenthusiastic staff diligently performing humdrum duties assigned to them. Broken pipes get fixed, gate valves and nozzles replaced, stoves repaired, digester domes re-plastered, panels replaced and saplings provided.

#### PURSUING OUTCOMES

But climate projects have much larger ambitions. Their bottom-line is societal and behavioural transformation. Climate projects aim to deliver *Outcomes* like protecting non-renewables, GHG avoidance/reduction, augmenting income through carbon revenue, meeting practical and strategic gender needs, etc. through the use of products like Biogas units and solar panels, and services like low carbon farming. They aim even higher, to make *Impacts* like making subsistence cultivation



viable through sustainable agriculture, regenerating biomass, and promoting new-age businesses where the rural poor offer vital environmental services to society at large.

Outcomes, by very definition, have extraneous causes. Outcomes are shaped by factors outside the predictive ability or control of project management. They are hindered by factors beyond the scope of planned project efforts. To use management parlance, they require managing assumptions.<sup>2</sup>

Families are compelled to sell their cattle when haystacks catch fire. Droughts force distress sale of cattle. Migration leads to locked houses and abandoned Biogas units. Border disputes in congested villages lead to wanton destruction of physical assets. Survival rates of planted saplings crash when groundwater depletes.

Time and time again, we find that uninterrupted usage of technologies, repayment of credit, survival rate of trees, *et al* are inseparably linked to displays of unity and mutual cooperation.

### REDEFINING MAINTENANCE

At a deeper level, maintenance needs to address externalities which are neither immaterial nor irrelevant when viewed from an Outcome/Impact perspective. Community support has to be mobilised. The centrality of women has to be continually emphasised. Sharing of resources has to be promoted. End Users have to be motivated to continue using sustainable solutions and not switch to temporary freebies like subsidized LPG or cheap fertilizers and pesticides. Sagging spirits have to be lifted and patience counselled to let time be the healer.

All this and much more cannot be done through humdrum staff; however diligent and sincere they may be. Only motivated development workers who have the trust and acceptance of the people, and also a holistic comprehension of the total effort can do it. They nudge efforts to traverse the extra mile and swim against the tide. They bring to the fore that elusive drive which allows one to overcome seemingly insurmountable hurdles.

## 4. Performance

Functionality is a measure to gauge the performance of Energy projects. It tells us how many days the Biogas unit or improved Woodstove has been used, and inversely measures the number of days they did not use non-renewables. It is expressed in percent terms – the higher the number, the better.

Forestry projects use cohort age, girth, height and Survival Rate to calculate the volume of carbon stock captured by roots, trunk and stems since the allometric of each tree species is already known. Specially developed parameters are used to calculate GHG avoidance in sustainable agriculture and low carbon farming.

### 4.1. Cumulative & Within-month Functionality

- Cumulative Functionality tells us how many days the Biogas Unit worked from the day it was commissioned till today. It reflects the economic efficacy of the climate project in terms of Emission Reductions generated.

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<sup>2</sup> The planned Outcomes are positive, although project managers must be prepared for unplanned Outcomes which may be positive or negative. The unknown elements of planned Outcomes constitute what might be grouped together as “Risk” which is based on “Important Assumptions” or “External Factors”. Disasters strike without warning and unexpected events unfold before there is time to plan counter measures.

- Within-month Functionality tells us how many days the Biogas unit worked in any given month. This number shows the satisfaction level of End User women – i.e. the number of days in each month when they were able to avoid collecting firewood and using traditional cookstoves.

#### 4.2. Drop in Functionality

An analysis of 16 FCN supported energy CDM projects shows that Within-month Functionality in Biogas stayed at over 90% for the first 7-10 years. Most Biogas units were used, albeit with minor problems like a blocked burner, broken knob, etc. A nagging pressure emanating from a responsible concern to clear ERPA's and get out of indebtedness to carbon investors may also have contributed – End User women may have under-reported and mildly fudged usage data.

After that, disuse and abandonment made it slide down to 75% and 55% in subsequent years. But the drop in Within-month Functionality did not immediately affect overall functionality because of the cumulative weight of earlier performance. Cumulative Functionality fell to between 77% and 71% only by the 15<sup>th</sup> year.

Attrition in fuel-efficient Woodstoves has been negligible with almost everyone using them for the full 5-year stove life and then continuing to use replacements provided by the project.

#### 4.3. Causes

Much of what affects functionality has already been touched upon in preceding pages. Drought, fodder scarcity, cattle health and family emergencies force people to sell off their cattle. Migration in search of work leads to shutting down homes. The promise of free LPG connections and subsidised cylinders also leads to an abandonment of Biogas units till hard times hit and there isn't enough cash to replace cylinders.

Prolonged disuse hardens the dung. Cracks develop in the digester and it requires a Herculean effort, with the help of neighbours, to empty the dome, re-plaster from within and reload 2-3 cartloads of fresh go-bar. The cavalier attitude of menfolk when it comes to solving women's problems compounds the problem; spending money on replacing cylinders is not their pressing priority and getting meals ready on time is not their problem. Many End User women, after a brief interlude with LPG, are forced to revert back to scrounging for crop residues, shrubs, bushes and any available biomass to fire their traditional *chullas*, quite literally with tears in their eyes.

#### 4.4. Who Maintained their Biogas units?

Fed up and frustrated with trying to find out why some families neglected their Biogas units, we decided to look at the ones who have kept them functional for the past 7-15 years. The ones who succeed belong to a few broad categories:

##### THE MATTER OF FACT ONES

Families whose primary occupation is cultivation simply find the Biogas useful. Cooking and cleaning is easier and faster. They find slurry far more sensible than paying hard cash to buy chemical fertilizers. They have draught animals for agricultural operations that tractors cannot perform, and also have milch animals.

They are relatively large families with a strong woman presence. They range from upper caste farmers to Dalits and Adivasis. The poorer ones own more or less contiguous holdings and have common lands close by.

##### THE CLIMATE CONSCIOUS

Diehard Coolie Sangha Members, largely women cadre, have a strong take on nature, environment and the ecology, and a simplified understanding of climate science. They genuinely believe that they





should not release smoke and poisons into the atmosphere. It is their grit that sustained tree planting efforts for 19 years, with hardly any financial support, from 1996 till 2015. They just knew that we would eventually get their GHG sequestration certified and bring carbon revenue to them simply because that is what we had said we would do.

There is a palpable pride when, after each verification, CERs/VERs are issued. The fact that some get more and others less due to differences in functionality or survival rates just doesn't matter.

### THE TWICE SHY

And then there are those who switched to LPG, abandoned their Biogas units, and later repented. It was not just inflation, rising cylinder prices and reduced subsidies that hit them hard. Women experienced a sudden loss of control. They became totally dependent on menfolk to not just shell out money to replace cylinders, but also to physically transport them from towns to village homes. Not needing cow dung as a cooking fuel also tempted families to sell off their cattle in hard times, making even a little milk for children or a cup of *chai* a commodity to be bought.

End User women who managed to hold on to cows and somehow refurbish their Biogas units swear to never again make the same mistake. This year, after the pandemic and Lockdown, there are more and more women in this category of the born again. Once bitten, twice shy!<sup>3</sup>

### CARBON REVENUE

Contrary to our expectations, we have not found the actual receipt of carbon revenue to push up either functionality or survival rate. Substantial amounts earned by End User women and participating farmer families were received with pride and joy. Everyone spoke of how welcome it was during the hard days of the pandemic and Lockdown.

Perhaps because ADATS had drilled a business sense for the past 2½ decades, continuously saying that they could provide a vital environmental service to society at large, carbon revenue was viewed in a matter of fact manner, as business income. Nomenclature like End User and Businesswomen reinforced this message. Just as a successful laundry does not motivate everyone to start commercially washing clothes, so too we did not witness people rushing home to repair their Biogas units only in order to earn carbon revenue. Nor farmer families planting saplings only because they would hopefully earn compensation after 10-15 years.

After distributing carbon revenue, the number of Biogas repairs did go up. As just mentioned, many End User women kicked themselves for temporarily abandoning their assets. And many more farmer families planted saplings. But we are unable to make a clear and direct attribution. We have the impression that generating CERs/VERs after clearing ERPA and selling offsets in the voluntary market served to validate the model and firmly establish it in the realm of the possible for the rural poor.

#### 4.5. *The Ones Who Did Not*

- A quarter to one-half of the End Users stopped using Biogas units by the 10th and 15th years.
- Only half the 1,103 farmers who planted saplings in order to switch to tree crops, managed to grow enough trees to sequester GHG and earn carbon revenue.
- As already mentioned, attrition in fuel-efficient Woodstoves given to the poorest of the poor is negligible.

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<sup>3</sup> Families may still have LPG and even electric stoves. In climate parlance this is called "stove stacking" – i.e. holding on to many technologies and using more or less of one or the other.



### UPWARD MOBILITY

Over the past decade, since getting their Biogas units, some End User families improved their economic situation. This was largely due to schooled and educated children getting city jobs and sending home regular monthly remittances. As parents grew older, they were unable and found it unnecessary to maintain cows. These households switched to LPG and even Induction stoves which they could now afford.

Setting aside climate considerations, we have no option but to accept this kind of attrition due to poor people moving onto higher technologies. Ironically, this does not happen with bigger landholders from higher castes because they continue with cultivation and, as we have earlier stated, they simply find the Biogas useful.

### REAL CONSTRAINTS FACED BY THE POOR

Continuous drought and famine broke the backs of the poorest. Many families sold their cattle, migrated in search of work, and abandoned their Biogas units.

Some End User women even took their portable fuel-efficient Woodstoves with them. But when they exited geographic boundaries of the climate project, they could no longer be counted.

In spite of more than 3,000 families attempting to switch from *timely* rain dependent field crops to more hardy tree crops, two-third of them lost every single sapling during the hot summer months, and only one-sixth had measurable success.

Which leads us to critique our own role.

### SELECTION OF END USERS

The poorest of the poor are the unquestioned primary stakeholders of grassroots NGOs. We empathise with the adverse effects of climate change atop all other woes and want to alleviate at least a bit of the misery of Dalit and Adivasi lives, and that of single women, the disadvantaged and the discriminated. The poorest of the poor are our natural clientele. So much so that reaching out to slightly better off families, in order to meet the scale and coverage demands of climate projects, is painful for grassroots NGOs.

Passion and commitment blinds us to the very real possibility that the poorest may not be able to keep their cattle during years of drought and fodder scarcity. We overlook their vulnerability to migrate in search of work during lean years. We repose faith in estimates that project a normal business viability under ordinary circumstances. We encourage even village sweepers who own no cattle to build Biogas units to be fired with their daily sweepings.

With quixotic optimism, we make contingent plans in our desire to include "our people" in Farm Forestry projects. We overlook even predictable effects of climate change. We ask them to bank on water sharing arrangements with neighbours who have some limited water source, ignoring possibilities of even their groundwater depleting. We suggest they look to erratic and whimsical MG-NREGA wages for watch-and-ward, and dysfunctional schemes for financial support.

We are reluctant to offer lesser technologies like fuel-efficient Woodstoves because they still use some firewood, albeit less, and there still is smoke and indoor air pollution, even if less.

### THE WANTON AND THE CARELESS

Let us not, at the same time, romanticise geography and individual poverty and pretend it is only resource vulnerability that physically prevents the poor from utilising technologies.

Populist freebies and the benevolence of both, the State as well as NGOs, acts as an impediment to bucking up and developing a business sense. There are losers who are out to demand any and every benefit simply because it is free. There are those who believe that it is the NGO who stands to gain



by their participation. There are those who just cannot tolerate women's problems being solved and carbon revenues flowing directly into wives' bank accounts. There are, in short, the bloody minded. Unless we accept a 20% attrition End Users across caste-class lines, poor as well as better-off, disproportionate energy will be spent on straightening the dog's tail, at the expense of supporting the ones who heroically strive to succeed.

### 5. NGOs and the State

#### 5.1. CDM Project Proponents

Worldwide, the overwhelming majority of CDM projects are undertaken by industry in non-Annex I countries. Community based CDM projects are mandatorily undertaken by NGOs, CBOs and the like.

#### 5.2. The Relationship

Early post-Independence role of grassroots NGOs was to demonstrate novel innovations in community development, with the intention that the State would adopt and scale them up. This held true for technical solutions as well as building social infrastructure to deliver literacy, credit, pre-primary health care, *et al*. In the latter function, the rural poor were prepared and readied to participate in scaled up State schemes through the creation of special delivery instruments. Where the public recognised their own contribution to the design and content of schemes during the greenfield phase, it went a long way to instil acceptance and adoption.

*In those early days, the relationship between NGOs and the State was based on mutual respect and learning.*

In due course, bureaucrats standardised pre-implementation steps taken by NGOs to prepare beneficiaries and obtain their participation into structured toolkits. A flurry of less innovative NGOs responded to calls to prepare the ground for State implementation using pre-determined toolkits comprising guides, syllabus and flashcards. These NGOs acted as social contractors delivering pre-packaged pre-implementation "software".

*Over time, this became the norm and mutuality was gradually replaced with adherence and dependence.*

The more efficient among these social contractors, the proven lot as it were, upgraded themselves to become underpaid contractors to execute State designed/funded schemes with a fair degree of efficiency, and at reduced cost.

*The relationship between NGOs and the State degenerated to supplicant and benefactor with technocrats posing themselves as repositories of all solutions and bureaucrats as controllers of resources.*

#### 5.3. Collaboration

None of these approaches will work in climate projects. At the very outset I emphasised on the radical rethink needed in macroeconomic policy to face the challenges of climate change; a role where only the State can play the lead. At the same time, due to the existential nature of the threat, manifold responses of different actors will emerge.

There is a need to find a consonance between myriad approaches of non-State and State actors to together define a common mainstream. Such concert can only be obtained through mutuality and a genuine acceptance of the other.

*Resistance to arrive at such consonance from either/both, State or civil society, is counterproductive.*



### 5.4. NGOs and the State – Complementary Roles

#### DECENTRALISED & DIVERSE ENDEAVOURS

It is worth reiterating that, quite apart from the internationally mandated obligation that only non-State actors undertake climate projects, success in community-based projects can be achieved only by long-term efforts owned and managed by the negatively impacted themselves. Different populations need to believe that their personal lifestyles, interactions with the local environment, and the manner in which they eke a livelihood has to fundamentally alter.

Perceptions and assessments will be nuanced and responses will be diverse. Consonance amongst these diverse responses cannot be enforced; it has to *evolve*. In spite of an evident urgency to achieve scale, replication through standardisation will destroy diversity, reduce participation to a mundane exercise, ownership will be token, and there will be no lasting results. Scaling up cannot be through mere multiplication.

Grassroots NGO approaches of the type earlier described are eminently suited to promote these diverse and decentralised undertakings for reasons already elaborated.

#### ROLE OF THE STATE

The State, on the other hand, has to take hard macroeconomic policy decisions that combat climate change at a national and planetary level. It has to steer the economy and nudge industries to adopt climate friendly practices and technologies. Resisting deep-seated impulses to micromanage, it needs to step aside and maintain a healthy distance from community endeavours that address climate change in particular, as well as poverty alleviation issues that are intrinsically linked to carbon footprints.

This does not mean that the State abdicates its governance role vis-à-vis climate projects. Instead, a radical rethink is needed in both, bureaucracy as well as body politic, to complement community efforts facilitated by non-State actors, oversee and keep them in sync with the national effort.

#### COMPLEMENTATION

At the very outset, the State and progressive/transformational NGOs need to shed their adversarial attitudes towards each other.

The State has to recognise constructive criticism and stop labelling and bracketing dissent. It must resist the urge to come up with defensive comebacks with metaphoric shields up and weapons drawn.

Activists and grassroots NGOs need to recognise differentiated roles and sheath their swords. We have to accept that global catastrophes and civilizational threats need to be addressed by the whole of humanity, with nation States taking a major role. This will not lead to any abandonment of our core values, loyalty or commitment. Instead, it will pave the way for a respectable contribution by the rural poor to the total effort.

Even in the corporate sector we witness the start of a fundamental rethink, departing from the traditional capitalist mode, mindset, management style and functioning, and even definitions of bottom-line. The State should incentivise industry to develop technologies that optimise the use of renewables at the rural/farmer family level.

State agencies should clearly state their position on the fossil fuel based extractive economy and not give out mixed messages and conflicting signals when dis-incentivising the use of non-renewables. Where possible, line agencies should channelize their resources into community owned and managed climate projects. Credit should be made available for investment in decentralised family-level technologies and support should be provided during natural calamities like drought and flood.



### A FINAL PUSH

2030 is slated as a global milestone in climate change when an international stocktaking as it were will be conducted to see if we are indeed headed to a planetary catastrophe by 2050. The world has started to recognise that the entire population needs to be actively involved in a collective reset of the new economy. Egalitarianism is no longer viewed as just a moral compulsion or desired value for good/stable governance. It is an imperative for survival. Climate change has sounded the death knoll of stratified economies where just a handful created wealth. The enlightened hear the bells toll; others do not.

Domestic and international offsetting will continue in some form or the other. Community-based climate projects will still be able to trade their avoided/reduced emissions in the voluntary market as well as domestic ETS. Their strength and relevance are not in the miniscule volumes they contribute, but in the involvement of the total population. In quantitative terms, volumes avoided/reduced by community mitigation may be very little, even insignificant. But a global response to climate change cannot be effective without the involvement of the entire population. Unless an involved population all together participate, in their own different ways, this existential threat to the continued survival of our species cannot be effectively addressed.

Though community-based climate projects have been around for the past 10-15 years, they are far too few, most of them promoted by the Fair Climate Network in this part of the world. In this decade, many more have to be registered and set up in order to glean learning from a wider range of diverse regions, peoples and situations.

They should blaze a trail and offer proof of concept on the ability of affected people to partner with social entrepreneurs, organise themselves across parochial divides, respond to respective ecologies, undertake long term and sustained adaptation measures, verify results and offer a fungible service to society at large.

### THE END OF THE PROJECTS MODE

These community led responses should be mainstreamed. They should not forever stay limited to a project mode. The size and scale of national coverage cannot be obtained by projects.

No number of projects undertaken by grassroots NGOs, even when rapidly scaled up as just suggested, will be able to cover the entire country and embrace all the rural poor. It is not just a question of numbers and replication. Even if there were that many capable NGOs able to develop and implement so many projects, climate projects undertaken by grassroots NGOs can only demonstrate the validity, viability and efficacy of a new-age business model.

Community endeavours to adapt to climate change should be a prototype to be nationally adopted by affected rural populations and pave the way for a new normative in climate mitigation, rural development and poverty alleviation, way beyond being “projects”.

The State can facilitate this subtle transmutation just as it once did in 2005 when multifarious Employment Guarantee struggles of grassroots NGOs/CBOs were expanded into a nationwide and universal NREGA. To do this, the State will be to accept without aspersions, commit to decentralisation without usurpation, and prevent hijacking by vested interests.

Bagepalli,  
March 2021

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