

3rd FCN-LCF Coalition – Strategic Plan

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3rd FCN-LCF Coalition – Strategic Plan

(October 2011 to December 2012)

1. VISION

The Vision of the 3rd FCN-LCF Coalition is one of Tribal and Marginal Farmers living in harmony with nature, with deep respect for traditional wisdom and contributing to climate integrity.

2. MISSION

To improve the quality of life of the indigenous communities in the project area by helping them meet livelihood needs from their lands and immediate environment through a process of strengthening community organisation and capacity building of Participant NGOs of the 3rd FCN-LCF Coalition; all strategies to be pursued within a framework of deep respect for the traditional wisdom of indigenous people, transparency, participation and gender equity.

3. CORE VALUES

Group-1	Group-2	Group-3	Group-4
<ul style="list-style-type: none"> Commitment to poor farming communities 	<ul style="list-style-type: none"> Respect to the traditional wisdom of indigenous people 	<ul style="list-style-type: none"> Spirit of Inclusion 	<ul style="list-style-type: none"> Integrity/dignity
<ul style="list-style-type: none"> Gender Sensitivity – identification of women farmers 	<ul style="list-style-type: none"> Equality among coalition 	<ul style="list-style-type: none"> Community centred 	<ul style="list-style-type: none"> Value of non-denominational, non-dictatorial, non-hierarchical
<ul style="list-style-type: none"> Respect for biodiversity 	<ul style="list-style-type: none"> Being open to new ideas 		<ul style="list-style-type: none"> Climate Justice
<ul style="list-style-type: none"> Ensuring sustainable development process 			
<ul style="list-style-type: none"> Ethical selection of farmers 			
<ul style="list-style-type: none"> Transparency and accountability 			

4. OBJECTIVES

4.1. Goal

Small Holder Farming establishes Viable Climate Mitigation Strategies through LCF

4.1. Purpose

NGO Capabilities Enhanced and LCF Model demonstrates Viable Small Holder Farming

4.2. Objectives

- 6 Participant NGOs gain Capability to Access Carbon Resources
- 6 Farmer Organisations formed as Instrumentality to take LCF Forward

3. 7,500 Tribal Families & Marginal Farmers Adopt Sustainable Agriculture Practices
4. Crop-wise Emission Reductions Measured in 4 sub Agro Ecological Zones

5. SITUATION ANALYSIS

5.1. Low Carbon Farming

5.1.1. Scope

The farm sector offers significant opportunities for carbon sequestration and emission reductions. Emissions from farming contribute 14% of global Greenhouse Gases. In India, farming contributes to 28% of the national GHG emissions. Low Carbon Farming practices offer farmers the opportunity to capitalize on the carbon market, as they shift to agricultural methods that are more sustainable, involving lower input costs that result in reduction and sequestration (improved soil carbon content) of carbon emissions in the process.

The situation is that Sustainable Agriculture cannot be scaled up due to market failure due to the exclusion of social and environmental costs and benefits from the transaction. These costs and benefits are known to all stakeholders but traditionally there has been no mechanism to bring them into market considerations.

The Carbon Market attempts to correct elements of this market distortion by paying for social and environmental benefits produced by farmers and reckoned in terms of Emission Reductions.

5.1.2. Strategy

Agricultural VER Projects support sustainable farming by encouraging farmers to adopt a basket of practices that reduce/minimise/remove the use of synthetic fertilizers (CH₄ avoidance and N₂O deduction) while, at the same time, improving soil carbon content. This is done through reduced tillage, precision fertilization, anaerobic composting, using organic fertilizers, mulching, intercropping, multi-cropping, and a horde of techniques specially designed for particular regions, populations and climatic zones. Taken together, we term them as "Sustainable Agriculture (package of) Practices" or "SA".

Carbon sequestration activities include planting fuel, fodder and fruit trees, and protecting those that are already there on the farms. Fast growing vegetation that do not encourage nesting by vermin can be planted on field bunds and boundaries, or on plots that are not currently utilised to maximum potential. This vegetation can be used for mulching.

Planting multiple crops on the same field support biodiversity. Proper crop mixes, based on science and demonstrated results, promotes resilience by bringing about a balance in the farm ecology and reducing the risk of crop failures due to pest attack. Multiple cropping also reduces the financial risk exposure for farmers against erratic and spatial rainfall.

5.1.3. SA Technologies

To reduce agricultural CO₂, CH₄ and N₂O emissions and sequester Carbon:

- Use reduced or no-tillage farming
- Alter crop mixes and rotations
- Change the timing, amounts, and frequency of the use of fertilizers and other inputs that use energy
- Change the mix of irrigated versus dry land
- Increase irrigation efficiency
- Change the management of livestock manure
- Change the types of livestock and their diets to reduce the release of methane from their digestive tracts

- Change approaches to managing water and straw in rice production
- Increase irrigation efficiency
- Change the timing, amounts, and frequency of the use of fertilizers and other inputs that use energy
- Convert cropland to grassland
- Improve the quantity and quality of forage on grazing land, and move herds more often
- Plant trees

5.2. Background

5.2.1. FCN Members & Low Carbon Farming

The Fair Climate Network supports its Members to develop Energy CDM Projects that generate CERs and claim carbon revenues for the sustainable development of the poor. Except for a single Afforestation/Reforestation CDM registered by ADATS, no one has ventured into Land Use and Land Use Change (LULUC) projects.

But the reality is that a large number of FCN Members are grassroots NGOs, keenly involved in Sustainable Agriculture (SA) efforts. They have developed remarkable technologies that go by various terms like organic farming, chemical free cultivation, low external input sustainable agriculture, permaculture, etc. These have resulted in shifts in cropping patterns and cultivation practices, and demonstrated drought resistance. They have shown these techniques as workable on demonstrations that range from small pockets in scattered villages to hundreds of hectares in contiguous tracts.

Scaling up these Sustainable Agriculture practices is the challenge. This will be possible if the small and marginal farmers were given an incentive to adopt the new practices.

Quantifying methane avoidance in practices currently being propagated under Sustainable Agriculture, introducing new practices to further bring down the carbon footprint, and claiming Emission Reductions to earn carbon revenue could be the solution.

Low Carbon Farming therefore becomes a serious concern for the Fair Climate Network.

5.2.2. Ecological Regeneration

Low Carbon Farming creates conditions for a healthy farm ecosystem and vice-versa, healthy ecological conditions and sustainable practices support low carbon farming. Biomass needs to be established in terms of vegetation and cattle, organic waste from livestock; biodiversity through birds and insects. These form the critical elements in Low Carbon Farming. The reduction and eventual elimination of agro-chemical intervention is a must. Adequate vegetation produces adequate Biomass which goes into the soil in order to enrich it with carbon; tree cover, along with medicinal herbs, produce fodder, fibre and fruit.

In semi-arid drought prone regions, long term investments are needed to promote the above described basic elements of ecology. Only then will the milieu be hospitable for Low Carbon Farming. Serious and heavy investments are needed to bring diversified vegetation and a balanced/healthy animal population – both of which are severely depleted in the past years through mainstream practices propagated by “modern agriculture”. This will automatically add other biodiversity in species of birds, insects etc.

Such investments would themselves be a measure of carbon sequestration. Long term measures should form a substantial part of efforts undertaken in order to secure the future of Low Carbon Farming.

5.3. History of FCN & Sustainable Agriculture

5.3.1. The Long Journey

This journey began when 9 FCN Members attended a half day meeting in December 2008, where we explored the possibilities of bringing Sustainable Agriculture within the realm of the Clean Development Mechanism (CDM). We looked at the CDM cycle, enumerated existing methodologies, and came to the sobering conclusion that there wasn't much scope to interpret existing SA practices of grassroots NGOs within the Clean Development Mechanism of the UNFCCC. In spite of that, we decided to list our current practices in organic farming, low external input sustainable agriculture, permaculture, *et al*, and re-examine possibilities once more.

Four months later, in March 2009 we again took a detailed look at CDM methodologies in agriculture sector, which is dominated by methane avoidance projects, and none on Sustainable Agriculture. Here our resolve to find a solution got steeled. Soon after in July 2009 the second day of our FCN Meeting was entirely devoted to discussions on the scope of agriculture in CDM. The first glimpse of hope emerged in this meeting with a better understanding of the VER route, Voluntary and US markets.

5.3.2. FCN-EDF Collaboration

It was decided to set up a long-term collaboration between Environmental Defense Fund (EDF), New York, and the Fair Climate Network. EDF Staff visited 4 grassroots NGOs, including ADATS, SEDS, AF and Sacred, from 19 to 25 January 2010, and held discussions with PWDS, a SA Network from Tamil Nadu. Zach Willey, a Senior Economist at EDF, specializes in developing economic solutions to greenhouse gas emissions and natural resource degradation problems in terrestrial ecosystems. A synopsis is available in our Library at <http://www.fairclimate.com/library/topic/3> On 26 and 27 January 2010, they met with various scientists from SAN, ICRISAT and CRIDA at Hyderabad. A Synopsis of Sustainable Agriculture practices observed in the field visits are also in our library. On Friday, 29 January 2010, we held a round-up meeting at the FCN Tech Team office in Bangalore where it was decided to take the collaboration forward.

The EDF-FCN partnership would explore the viability of procuring Verified Emission Reductions (VERs) from the cultivation of small and marginal farmers. In the first 1½ to 2 years we would:

1. Inventorise current farming practices and calculate the Baseline Emissions in 4 regions where Accion Fraterna, SEDS, Sacred (a SCINDeA partner) and PWDS work
2. Develop Methodologies that clearly identify new practices that need to be adopted to reduce emissions
3. Calculate pragmatic Emissions Reductions that can be achieved by adopting these new practices

This partnership would increase the reach of both parties. EDF is a science based organization that has worked for the last 10 years to develop methodologies and demonstrate VER generation potential for the agricultural sector across the globe. They have completed 100 plus projects in the USA and are currently engaged with the farming sector in China and Vietnam.

EDF would provide the scientific backup and support for the LCF Coalition Programme, and are committed to the long haul that any serious work in agriculture entails. Participant NGOs would delineate project boundaries, establish tenure, and develop carbon contracts with farmers.

FCN would manage NGO dynamics and bring latent potential to the table.

5.3.3. The 1st FCN-LCF Coalition

In March 2010, 5 Participant NGOs met at Bagepalli to take matters forward. We first reviewed what had happened in the past 15 months. The role of EDF to provide scientific advice and access US

carbon markets was thoroughly discussed. A formal decision was taken to form the LCF Coalition Programme of the Fair Climate Network and take it forward in a phased manner.

A 1 year Pilot Phase was supported by EED, Germany, and EDF. Huge progress was made by the 5 Participant NGOs who proved that Low Carbon Farming was doable, measurable and provable. Please find details at <http://www.fairclimate.com/library/topic/3>

In December 2010, a presentation was made on this project at CoP 16, Cancun, where Low Carbon Farming got international recognition. Several months later, we developed a Methodology to measure Emission Reductions from Crop(s). Currently, in this 2011 crop season, we have set up GHG Laboratories at 4 NGO sites where we will be measuring emissions on Mainstream and SA Reference Plots. After 3 crop seasons, in early 2014, we will have sufficient data to calibrate the DNDC Model and calculate actual emission reductions on particular fields in 4 sub Agro Ecological Zones. This 6 month phase is being supported by EDF, New York, who also provide us with the Science.

5.3.4. The development of an LCF Methodology

The FCN Tech Team started looking at *existing* methodologies where LCF could fit in. The key concerns were the diverse nature of small holding farming with many variants of SA practices. To our dismay, we found that all existing methodologies focused on large farms. We quickly realised that we needed to develop a separate methodology which incorporated diverse small holder agriculture and allowed for flexibility.

Review of existing methodologies

Emission factors are of 2 types:

1. Area based emission factors – emissions per unit area of land
2. Mass based – emissions per unit quantity of fertilizer or manure applied

CDM methodologies adopt a mass based approach – emissions calculated per unit mass of manure or fertilizer. VCS methodologies, on the other hand, consider area based approaches where emission factor for a given area of land under certain crop-management is derived and used. Assessing emissions in SA practices requires a combination of both.

Existing VCS and CDM methodologies were not directly suited to include Low Carbon Farming as a project activity. The closest methodology we found was VCS' Sustainable Agriculture Land Management. However, each farmer family would have a unique set and extent of practices which they would want to adopt. This would include not just land management, but activities that may range from manure management, altered crop rotations, fertilizer application rates, methods and timing.

GHG emission levels of individual practices through each of these practices would be different. This required a method to calculate emissions from various processes, rather than from just the ones for which CDM methodologies exist (E.g. manure management). A recent methodology approved under CDM for SRI in Paddy provides a strong boost in this direction. The big challenge was to include dry land cropping.

It should be noted that although there exist different methodologies for particular aspects like manure management, the source for basic calculations is the "IPCC Good Practice Guidance for Greenhouse Gas Inventory". But to date, there are no emission factors in the IPCC emission factor database that can be used to estimate emissions based on VCS or CDM tools. Further, there is a lack of 'emission factors' for different sets of practices.

It was clear from the review of existing methodologies and tools that there were none directly applicable to Low Carbon Farming. Aspects pointing to the need for a new Methodology were:

- Different Methodologies adopt different rigour for emissions assessments, and this is further limited by (non)availability of 'emission factor' data

- There is more scope and importance given to agricultural land management in VCS than in CDM. In the later, no direct agriculture land management are considered under mitigation. Only isolated and atomised aspects of farming, like manure management, are referred.

Our Evolving Methodology

We realised that Low Carbon Farming needed an area based approach whose key features had to be:

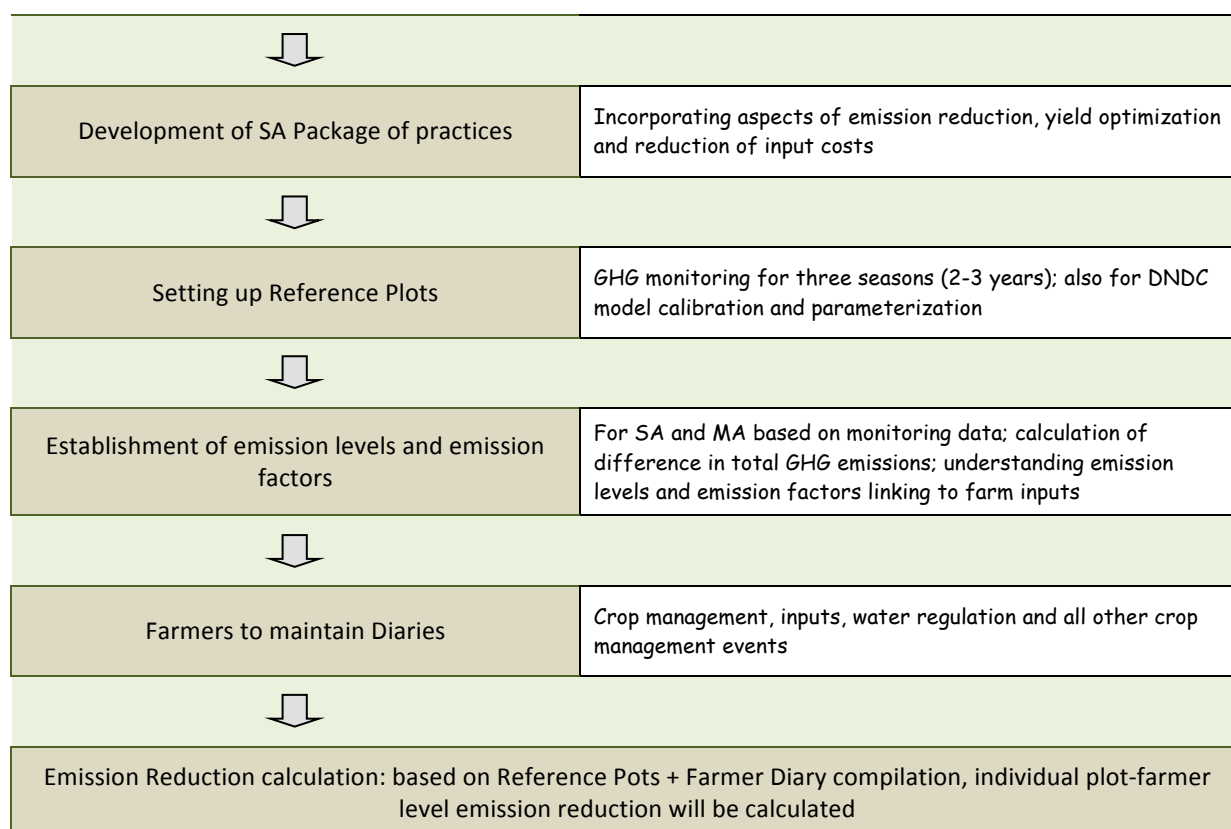
- Open and flexible to include different crops and systems and small holder farmers
- Package of practices developed with the Partner NGOs specific to the region/communities, - the components of the package was interpreted under 3 GHGs:
 - i. N₂O emission reduction:
Practices reducing direct and indirect emissions from different cropland soils. Mainstream agriculture is characterized by above excess application rates and low nitrogen use efficiency farming practices (such as single dose)
 - ii. CH₄ emission reduction:
Water management and organic matter management
 - iii. CO₂ Sequestration:
Organic matter management, tree planting, mulching, etc.
- Field based actual measurements built in as the heart of the methodology meeting the maximum rigour requirements
- Farmer Diaries as tools to assess plot level mitigation efforts
- DNDC simulations to estimate process based emission reductions ¹
- Emissions calculations at the plot levels calculated based on process simulation (DNDC), driven by farmer-plot specific applications and management
- Reference Plots accurately measure differences in Mainstream and SA practices, and calibrate and incorporate crop-management-ecology details of farming into DNDC and arrive at relationships linking farm inputs to GHG emissions
- Carbon sequestration measured over longer time periods (> 5 years)

When monitored for 3 continuous years, Reference Plots elucidate emission factors for specific crop-region-management.

Application of the Methodology

Reconnaissance survey	Crops, crop management, soil type, irrigation etc.
↓	
Crop selection	Choosing manageable crop which can be considered for generating emission reduction
↓	
Scenario Development Studies: <i>Questionnaire survey</i>	A sample of mainstream farmers across the region will be surveyed to understand the mainstream crop management and agricultural input rates
↓	
Emission Reduction feasibility	Literature based emission assessment to understand potential of ER generation

¹ The De-nitrification Decomposition (DNDC) Model needs to be fed in with more than 100 factors or parameters for each cropping pattern, in each sub Agro Ecological Zone (AEZ), in order to calculate GHG Emissions from agriculture. About 20-25 of these parameters can be got only through continuous monitoring during the plant/crop growth cycle.



5.3.5. The 2nd FCN-LCF Coalition

Once we had the Methodology in place, the Fair Climate Network decided that we were ready to set up the next FCN-LCF Coalitions. Several FCN Members expressed their willingness.

The 2nd FCN-LCF Coalition was formed by 4 grassroots NGOs. They had a solid base in Sustainable Agriculture, having propagated various practices for several years. One amongst them also provides technical knowledge and skills to a Network of about 42 NGOs.

1. Timbaktu Collective, Anantapur district, AP
2. GRAM, Nizamabad district, AP
3. IIMF, Adilabad district, AP
4. WASSAN, Ranga Reddy district, AP

Together, these 4 NGOs will cover 6,000 farmer families in 121 villages in this 1½ year long Pilot Phase. These families will undertake LCF (i.e. Sustainable Agriculture practices + Carbon Revenues) on 13,400 acres of Rainfed dry land. With the capabilities built up, they will expand operations every year, to finally take up LCF on 48,500 acres belonging to 23,000 families in 277 villages by the end of 5 years.

5.3.6. This 3rd FCN-LCF Coalition

This 3rd FCN-LCF Coalition covers the coastal and Tribal belt of AP, Odisha and Chhattisgarh, and extends over 3 sub AEZ's – 7.3., 11., 12.1., 12.2. and 18.4. It aims to reach 15,400 farmer families and their communities in 720 villages by introducing SA on 25,300 acres of land in 3 years.

		LAYA	IRDWSI	CPSW	CeFHA	ACTION	RCDRC	TOTAL
Year 1	Farmers	800	2,400	2,500	500	700	600	7,500
	Acres	1,100	2,200	3,500	800	1,050	1,200	9,850
	Villages	76	40	70	21	90	35	332
Year 2	Farmers	1,500	3,400	4,000	900	1,000	1,200	12,000
	Acres	2,500	3,600	5,000	1,400	3,000	2,500	18,000
	Villages	120	75	110	35	130	60	530
Year 3	Farmers	2,000	3,600	5,000	1,300	1,500	2,000	15,400
	Acres	3,500	3,800	6,500	2,000	5,000	4,500	25,300
	Villages	180	80	150	50	160	100	720

The 6 Participant NGOs will examine crops grown by Tribal and Marginal Farmers under Sustainable Agriculture practices and, from among them, choose 2 Main Crop(s) each in 4 AEZ's for an in-depth measurement of Mainstream and SA emissions in the first year. They will, in the 2nd and 3rd year, gradually add more Main Crop(s) for measurement.

The total cost for this 15 month Pilot Project will be ₹ 26.83 million (€ 419,233). Icco, the Netherlands, has shown interest in supporting this Pilot Project.

The Fair Climate Network will provide leadership, direction and technical support to this 3rd FCN-LCF Coalition. Environmental Defense Fund, New York, will provide the Science. LAYA will be the coordinating organisation.

6. PARTICIPANT NGOS

6.1. LAYA

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LAYA, a registered Society is a Resource Centre for Adivasis in the Tribal belts of North East of Andhra Pradesh, working with Adivasis communities over the last 22 years. LAYA is registered under the FCRA and operates intensively in two districts: 7 Mandals of Addateegala Division in East Godavari district (average elevation 183 metres) and 3 Mandals of Paderu Division (average elevation 904 metres) in Visakhapatnam district. Addateegala is located 80 km from Kakinada, its district headquarters. Paderu is located 110 km distance from Visakhapatnam, its district headquarters. LAYA has gone through several stages of successes and has also experienced many obstacles in addressing the core concerns of Adivasis. LAYA's key areas of intervention relates to Land Alienation and Human Rights, Natural Resource Management, Herbal Based Community Health Care, Micro Credit and Micro Enterprise, Youth and Women Empowerment and Climate Change – Decentralized Energy Options. LAYA has staff strength of 41, with women in key decision making positions.

6.2. Integrated Rural Development of Weaker section in India (IRDWSI)

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The Integrated Rural Development of Weaker Sections in India (IRDWSI) started operations in Koraput district in 1981 on the request of the Jeypore Evangelical Lutheran Church (JELC) in the year 1976. It is a registered Society as well as registered under the FCRA. The ideology has been 'to help people help themselves' and the strategy has been 'empowerment of the individual and the whole community'. The aim is to accompany the poor and facilitate programmes of capacity building,

community organization, empowerment and sustainable development through human potential development, community health, eco-development and non-agricultural activities. IRDWSI works in 140 villages of 5 blocks in Koraput district in Odisha. The organisation reaches to a population of 26,112 from the Tribal, Dalit and other communities. IRDWSI also works in disaster areas both within Odisha and also in Andhra Pradesh and Tamil Nadu. 36 persons work full time in the NGO.

6.3. Council of Professional Social Workers (CPSW)

Contact Person: Manoj Kumar Pradhan, +91 (73777) 75051 cpsw@rediffmail.com

CPSW was established in 1987 as a registered Society and is registered under the FCRA. CPSW works in two districts of Kandhamal (formerly known as Phulbani) and Naupada. Kandhamal is more of a hilly region with slope terrain Naupada is located in the northern part of the state, which is basically arid. Also it has presence in the disaster prone districts of Nayagarh, Jagatsingpur and Kendrapada. The vision of CPSW is 'of a society where social, economic and political relations are based on principles of justice, gender equity, peace, ecological balance and participatory democracy.' The strategies followed for reaching its vision are rights based approach (RBA), training and capacity building, and promotion of community based institutions. The programmes taken up by CPSW are NRM & Sustainable Agriculture, Micro-finance and income generation, Market Access Programme, Education Programme, Health programme, disaster preparedness and response, research and policy advocacy, and eco-tourism. CPSW has staff strength of 151 staff of which 32 are professional staff while the rest are from the communities.

6.4. Centre for Humanitarian Assistance Trust (CeFHA)

Contact Person: Sasi Prabha, +91 (94401) 56281 sasiw@sify.com

CeFHA is a registered Trust, 2002 and is also registered under the FCRA. Its work area is Vishakhapatnam, Andhra Pradesh. The main objective of CeFHA is to work for moral, educational, medical and development of the people and focus on development of the indigenous communities like Adivasis, Fisher folk and Dalits, especially children and women. CeFHA has been working in 3 slums of urban Visakhapatnam and currently it has shifted its concrete base to 33 villages of Kotauratla Mandal, Visakhapatnam. The main programme activities include the Formation of Women groups, Training, Savings and Micro credit programmes, Slum Children Education programmes through Motivational Centres, Skills training & Development for the slums and Communities at Kotauratla. The sustainable agricultural programmes taken up by CeFHA are: promotion of Traditional variety of millets; encouraging chemical free agro zones; establishing bio resource centres; engaging the farmers in newer techniques which are eco friendly like SRI; and initiation of agroforestry models.

6.5. ACTION

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ACTION was registered as a Society in 1988 and also registered under the FCRA. It works for agriculture development and disaster mitigation in the coastal district of West Godavari in Andhra Pradesh. ACTION is head quartered at Rajahmundry on the eastern bank of river Godavari. ACTION has staff strength of 26 and works in 162 villages of West Godavari district (122 fishermen villages along the Godavari River and in 40 Tribal villages in the hills). The Tribal settlements where ACTION works are located in the Integrated Tribal Development Agency (ITDA) areas of West Godavari district. It is a member of CADME, a network of 14 organisations network promoted by Plan International, which works towards disaster preparedness in nine coastal districts of Andhra Pradesh. Apart from the above, ACTION's mission is on uplifting Tribal and fishermen by encouraging them to form SHGs, better health care, housing and agricultural facilities. ACTION presently collaborates with NABARD to implement horticulture cum agriculture farms.

6.6. RCDRC

Contact Person: Subhash Nanda, +91 (94060) 16695 rcdrc@rediffmail.com

RCDRC, a registered Society and also registered under the FCRA, mainly focuses on women's empowerment, child labour, former bonded labourers (agricultural workers), marginal farmers, Church youth, theology students, unorganized workers (women domestic workers and head load workers), Forest Rights Act, Seed Satyagrah, Zameen Satyagrah. RCDRC works in 865 villages of 5 Taluks in Mahasamund district of Chhattisgarh. The organisation reaches to 1190 families from the scheduled castes, scheduled tribes and other minority communities. Through Mukti-Niketan, RCDRC intervened in enabling these new landholders to learn and practice sustainable agricultural techniques, including organic farming, appropriate technology etc. The Women Farmer's Cooperatives/ Collectives are other unique experiments that have led to new identity of women as farmers and subsequently resulting in women's empowerment and sustenance. In the process RCDRC invented new techniques for appropriate irrigation facilities, dry land farming and identifying, preserving and promoting indigenous seeds (paddy seeds. After the Forest Right Act 2005 came into full force, RCDRC had been campaigning for the forest rights of the Tribals and forest dwellers with a new vigour. RCDRC has been involved in preserving and promoting indigenous agricultural practices including organic farming. In this regard, it has carried out concerted campaign on issues and concerns confronting farmers on the issue of climate change.

6.7. Environment Defense Fund (EDF)

Contact Person: Richie Ahuja, rahuja@edf.org +91 (98716) 10550

Environmental Defense Fund is a leading U.S. headquartered non-profit, representing more than 700,000 members, with offices in China and Mexico and partnerships in Brazil, India, Russia and other countries. Since 1967, they have linked science, economics and law to create innovative, equitable and cost-effective solutions to society's most urgent environmental problems.

Guided by science, EDF evaluates environmental problems and works to create and advocate solutions that win lasting political, economic and social support because they are nonpartisan, cost-efficient and fair. They have more than 30 years experience in the development of innovative, equitable, scientifically sound, economically sensible solutions to local, regional, and global environmental problems.

In India, EDF has specifically focused on the issues of climate change. From the outset, the organization recognizes that:

1. As the world's largest democracy and a fast emerging economy, India will play a critical role in solving the global climate crisis. Policies adopted in India to tackle climate change will have international implications.
2. Many in India are extremely vulnerable to climate change and there is a need to widen the dialogue.
3. The poor remain the most vulnerable to climate change, and methods must be identified for this population to adapt to and leverage climate change as an opportunity.
4. As a nation of entrepreneurs, world class engineers, and a growing educated middle class, the country has the potential to leverage climate change as an opportunity and become an exporter of climate change solutions.

The Fair Climate Network, a network of NGOs in India working with rural communities, understands the role of carbon markets as an opportunity to be leveraged for improving the lives and livelihoods of their constituents. EDF will work with FCN Members to help develop a local protocol for Low Carbon Farming that will create VERs to be sold in the carbon market.

7. STAKEHOLDER ANALYSIS

7.1. Stakeholder Table

STAKEHOLDER	INTEREST IN THE PROJECT	IMPACT ON PROGRAMME
PRIMARY STAKEHOLDERS		
Tribal Families and Marginal Farmers	<input type="checkbox"/> Sustained income increase and quality of life	<input type="checkbox"/> +
Women	<input type="checkbox"/> Empowerment	<input type="checkbox"/> +
Youth	<input type="checkbox"/> Exciting opportunity to participate in Family Cultivation	<input type="checkbox"/> +
Farmer Organisations	<input type="checkbox"/> Up-scaling eco-friendly agriculture	<input type="checkbox"/> +
SECONDARY STAKEHOLDERS		
6 Participant NGOs	<input type="checkbox"/> Opportunity to scale up many years of proven SA efforts from pilot demonstrations	<input type="checkbox"/> +
LCF Staff at each NGO	<input type="checkbox"/> Capability Building; Job Satisfaction; International Recognition	<input type="checkbox"/> +
Fair Climate Network	<input type="checkbox"/> Institutional Objectives	<input type="checkbox"/> +
Environmental Defense Fund	<input type="checkbox"/> Institutional Objectives; Model Expansion	<input type="checkbox"/> +
EXTERNAL STAKEHOLDERS		
Scientific Institutions	<input type="checkbox"/> Learn new skills, share knowledge, earn credit for new Methodology	<input type="checkbox"/> +
Government Forestry, Agriculture & Horticulture Departments	<input type="checkbox"/> Support and information	<input type="checkbox"/> +
Funding NGOs	<input type="checkbox"/> Institutional Objectives; Support to an Innovative Model	<input type="checkbox"/> +
Carbon Investors	<input type="checkbox"/> Value Added Emission Reductions with powerful stories behind them	<input type="checkbox"/> +
Crop Loan Providers – Banks & Cooperatives	<input type="checkbox"/> Meet Reserve Bank & Govt. Targets	<input type="checkbox"/> +
Buyers of Organic & NPM Products	<input type="checkbox"/> Cater to a Niche Market that demands healthy food	<input type="checkbox"/> +
Suppliers of Biological Inputs	<input type="checkbox"/> Market for Produce	<input type="checkbox"/> +
Fertilizer & Pesticide Shopkeepers	<input type="checkbox"/> Serious Challenge to the rationale behind their business	<input type="checkbox"/> -
Media	<input type="checkbox"/> News	<input type="checkbox"/> +

7.2. Importance-Influence Matrix

<i>High</i>	9									Participating Farmers
INFLUENCE	8						Farmer Organisation			Participant NGOs
	7								LCF Staff	Women
	6								Fair Climate Network	Youth
	5								EDF	
	4						Buyers of Organic Products	Scientific Institutions		
	3						Crop Loan Providers – Banks & Cooperatives		Funding NGOs	
	2					Govt. Forestry, Agr. & Horticulture Departments			Carbon Investors	
<i>Low</i>	1	Fertilizer & Pesticide Shopkeepers		Media		Suppliers of Biological Inputs				
		1	2	3	4	5	6	7	8	9
		<i>Low</i>	IMPORTANCE							<i>High</i>

8. SWOT ANALYSIS

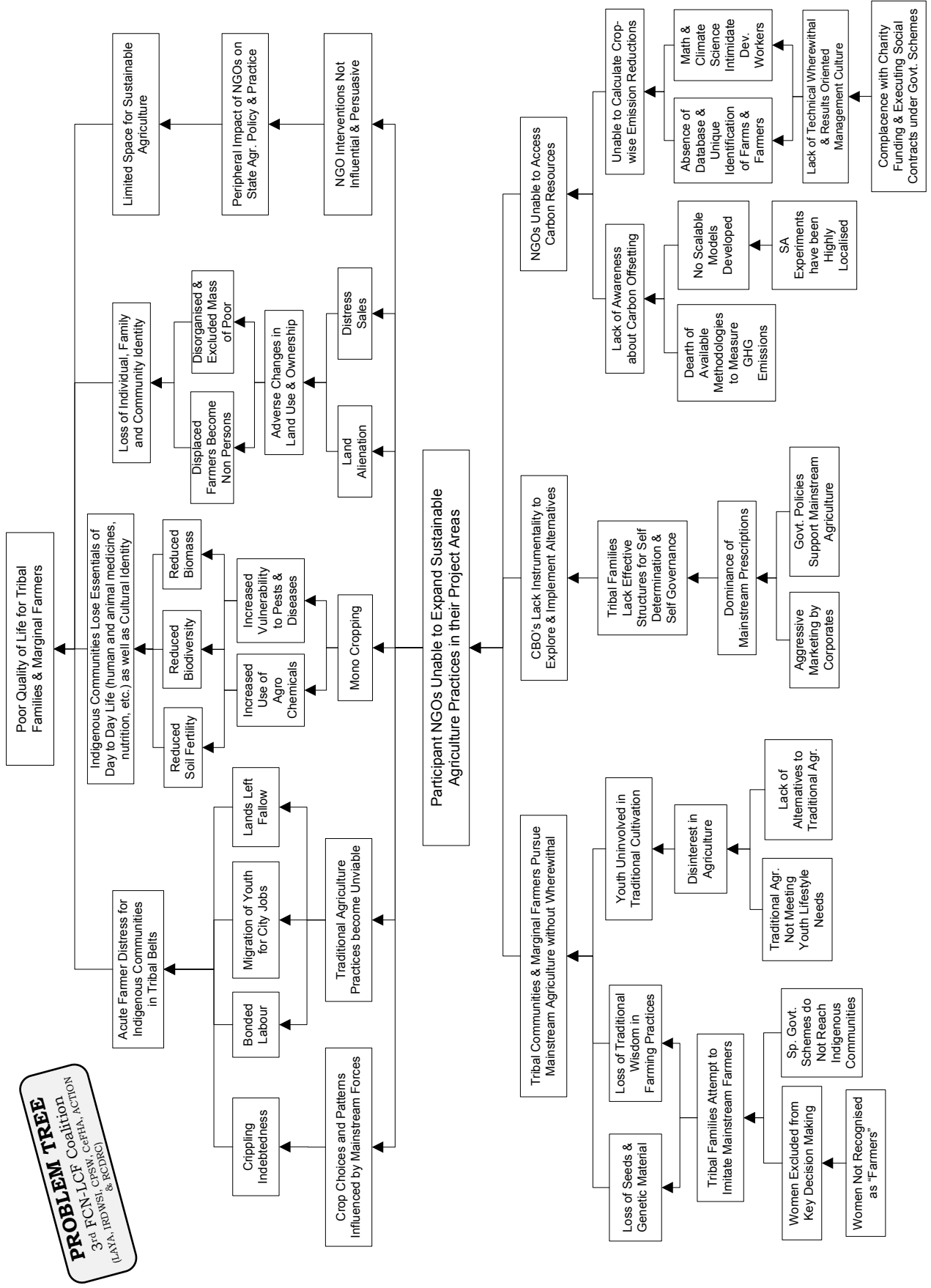
8.1. Strengths, Weaknesses, Opportunities & Threats

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • Credibility for advocacy with government • Support of CBOs • Community rapport and support • Years of local experience for SA • Gender balanced programme • Expertise in organic farming • NGO network 	<ul style="list-style-type: none"> • Weak farmer organisations • Lack of current data on landholdings • Inadequate funding • Unable to produce stock of organic products • Low NGO Capacity <ul style="list-style-type: none"> □ <i>Limited computer literacy</i> □ <i>Inadequate documentation skills</i> □ <i>Inadequate marketing skills</i> □ <i>Weak monitoring</i> □ <i>Absence of strategic planning</i> □ <i>Poor technical</i> 	<ul style="list-style-type: none"> • Experience of NGO members • Modern trend towards organic farming • Replication and scaling of successful SA models • Government linkages • Existing government programme (NREGA etc.) • Co-operative community leaders • Good media relations • Market demand for organic products • The FCN movement 	<ul style="list-style-type: none"> • Farmers preference for quick money • Powerful support to mainstream agriculture by government • Corporate thrust in marketing mainstream • Pauperization of farmers • Staff turnover • Power exerted by traditional forces • Migration/ • Land acquisition • Disinterest of youth

	<i>knowledge</i> □ <i>Inconsistent and unsystematic SA practices</i>	<ul style="list-style-type: none"> • Carbon market • New technologies • New crops 	
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8.2. SWOT (4 x 4 Matrix)

		Internal Environment	
		STRENGTHS	WEAKNESSES
Internal Environment	OPPORTUNITIES	INVEST 1. Scaling up working SA models (a) existing (b) add new (c) scale up and (d) locate 2. Creating physical assets for SA through NREGA etc. (land development, farm ponds, composite pits etc.) 3. Documenting and disseminating SA practices and experiences (media programme) 4. Production of Standard Practices Manual for Sustainable Agriculture	DECIDE 1. Strengthening Farmer Organisations 2. Acquire irrefutable data on farmers and their landholdings 3. Making farmers credit worthy 4. Accessing carbon market 5. Active involvement in international and domestic carbon markets 6. Significant production and marketing of organic farm inputs 7. Capability Building of participant NGOs 8. Setting up Empowered LCF teams at NGOs
	THREATS	DEFEND 1. Identify appropriate SA practices and tap on friendly practices of government 2. Linking with existing advocacy markets 3. Engaging youth in designing and implementing LCF at each NGO 4. Strengthen women to participate in family level agriculture, decision making, crop choice	DAMAGE CONTROL/DIVEST 1. Avoid areas where tenure cannot be established



10. NARRATIVE EXPANSION OF THE PROBLEM TREE

10.1. Focal Problem

The focal problem that this Coalition Pilot Project aims to address is:

“Participant NGOs Unable to Expand Sustainable Agriculture Practices in their Project Areas”

Traditional Agriculture Practices Become Unviable

Tribal families and marginal farmers are unable to meet rising input costs that do not have a proportionate rise in output. Farm incomes drastically drop when cost of cultivation steeply increases.

Bonded Labour, Migration of Youth to City Jobs, & Lands Left Fallow

Heavy indebtedness, distress sale of lands and forced migration of indigenous peoples quickly follow. Tribal families and marginal farmers are in the grip of acute distress due to the propagation of mainstream cultivation.

Crippling Indebtedness

In either case, dependence on any market mechanism by a people who have zero risk taking capacity leads to indebtedness.

Mono Crops

Mono crops are vulnerable to pests and diseases and demand an increased use of agro chemicals. Soil productivity visibly drops.

Increased Use of Agro Chemicals

Soil fertility refers to the chief nutrients: chiefly Nitrogen, Phosphorus and Potassium, along with micro nutrients. Narrow and sectoral scientists claimed that these could be infused through the use of chemical fertilizers.

Reduced Soil Fertility

Soil fertility is a function of moisture retention, healthy microbial activity, various micro nutrients and organic matter that comprise of and, *inter alia*, contribute to the creation of productive soil. But for a sustained (repeated) use of soil for cropping, year after year, it is soil productivity that is needed. More so in low rainfall, high evapotranspiration, shallow soil regions with a fragile ecosystem.

Reduced Biomass

Mainstream cultivation produces hardly any biomass. The productivity of the soil falls to critical levels with an absence of humus, manures and moisture. In an integrated farming system, factors causing and sustaining soil productivity go beyond farm boundaries into common lands, pastures, forests, cattle, birds and scores of other living and non-living organisms.

Reduced Biodiversity

The heavy use of agro-chemicals pollute the soil, surface water, ground water, crops, food, fodder, drinking water and, consequently, humans, animals, and the entire flora and fauna in the immediate environment. They result in an excessive and inefficient use of irrigation that leads to an irreparable depletion of the groundwater table. They deepen failed policies that contribute to the (*non*) preservation of biodiversity and biomass.

Displaced Families Become Non Persons; Disorganised & Excluded Mass of Poor

Indigenous communities are an integral part of their ecosystems, with fates deeply intertwined in their immediate environment. There isn't any concerted effort, backed with good science, to support Tribal families and marginal farmers re-establish integrated farming systems and sustainable

livelihoods – efforts to show that an alternate paradigm can indeed increase productivity in a sustainable manner and, at the same time, enrich the environment.²

Acute Farmer Distress for Indigenous Communities in Tribal Belts

The human cost of this transformation from an environmentally sensible and sustainable treatment of natural resources to a destructive venture is very high. An absence of food security occurs due to two well established reasons: when people do not grow their own food and when mainstream agriculture makes a sardonic reversal of the population's diet intake. Little wonder then that there is deterioration in general health conditions even in those pockets where the public distribution system, miraculously, functions; and death due to starvation in large tracts where it does not.

NGO Interventions Not Influential & Persuasive... Peripheral Impact of NGOs on State Agricultural Policies & Practice

There is no effective challenge to the artificial disintegration, at a policy level, of a farming system into unnatural compartments like horticulture, floriculture, sericulture, dairy, livestock, *et al.* A compartmentalized approach to agriculture, by definition, promotes mono-cropping. Even on Rainfed fields, multiple cropping is discouraged.³

There is a flurry of short-sighted government schemes and measures that promoted each of these compartments as if they were stand alone enterprises that could survive without inter-dependency on the other. Willy-nilly, they promoted a High External Input Destructive Agriculture (HEIDA) paradigm.

SA needs a judicious mix of social, physical and monetary capital that only a people who are deeply immersed in holistic farming can recognize; inputs that are not even interpreted as agricultural by the experts.

The just described focal problem leads to several negative effects that culminate in an increased threat to climate integrity. Ecological imbalance that leads to increased GHG emissions and threatens an already fragile global climate system.

10.2. Main Problems

There are five causative factors that result in this situation. These Main Problems are:

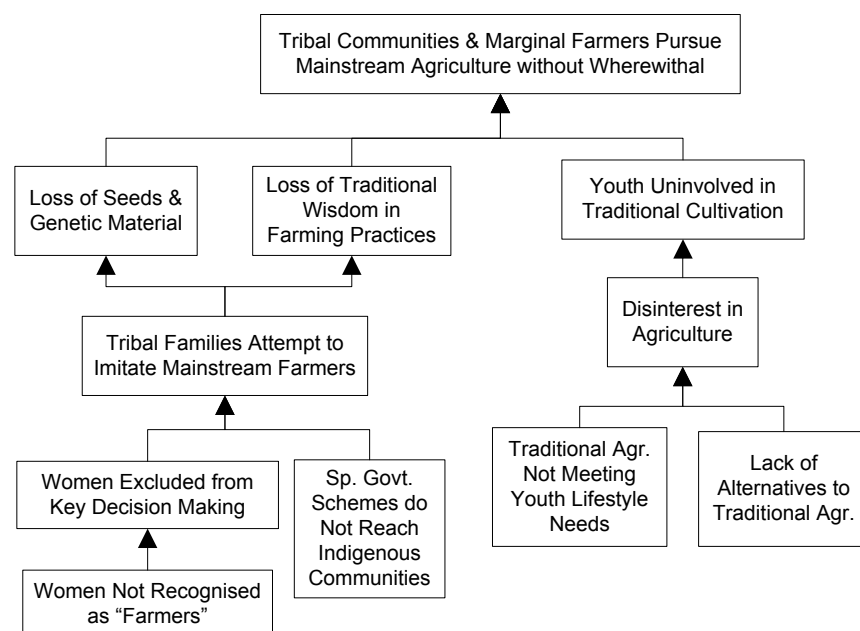
1. Tribal Communities & Marginal Farmers Pursue Mainstream Agriculture without Wherewithal
2. CBOs Lack Instrumentality to Explore & Implement Alternatives
3. NGOs Unable to Access Carbon Resources

²That is why this Coalition has consistently used the term “contented farmers” and consciously avoided “self-sufficient farmers”. We operate within the paradigm of modernity, without at the same time accepting everything that the market economy has to offer as givens. While we entertain no unrealistic dreams of utopia, we also know that a conscientised peasantry, accompanied by a sympathetic intelligentsia, can mould the shape and substance of capitalisation of agriculture.

We are more than convinced that Contented Farmers will not just be capable of meeting the ever rising demand for good and healthy food, but will do so with joy, pride and profit!

³The Fair Climate Network has already clarified that we are not opposed to hair-splitting specialisation and miniscule examinations that pure science demands. We do not advocate a talibanisation of knowledge. Our critique is of the disintegration at the policy level. An inability to put all the sciences together when making a composite and holistic policy choice; of a corruption of ecological sciences that were supposed to perform this synthesising role.

10.2.1. Tribal Communities & Marginal Farmers Pursue Mainstream Agriculture without Wherewithal



There are 2 branches of Causes and Effects for this Main Problem:

Women Not Recognised as "Farmers"

Women in mainstream cultivation are treated as free and unpaid helping hands available for family cultivation. They are rewarded with far less than what a farm labourer gets. Not being exposed to the agriculture market economy, not having school/college education, helps maintain the myth that they are incapable of decision making.

Women Excluded from Key Decision Making

Even outside their families, women are not considered farmers and never given a say in crop choice and cropping practices. But where organized into CBOs through gender sensitive efforts of grassroots NGOs, Women have broken every single one of these stereotype myths. They make sound and sensible crop choices, keeping family sustenance in mind

Special Government Schemes do Not Reach Indigenous Communities

The special government schemes through Integrated Tribal Development Agency (ITDA) and the District Rural Development Agency (DRDA) do not reach the deserving remote indigenous communities as they are cornered by the most influential farmers, especially from the road side villages.

Tribal Families Attempt to Imitate Mainstream Farmers

Many small and marginal farmers continued to imitate mainstream cultivators and have burnt their fingers.

Loss of Seeds & Genetic Material

HEIDA has successfully brought about the destruction of traditional seeds and wild gene pool through the introduction of hybrid and genetically modified variety of seeds. The use of traditional manure/pest management like cow dung and urine, bio compost, neem cakes diminished from the scene. Fodder has diminished as traditional crops were discontinued and animals were not used to bio waste produced by some of the new mono crops.

Loss of Traditional Wisdom in Farming Practices

Time tested practices like *Navadanya* (the planting of nine varieties, alternating rows on every field) had evolved, over centuries, had a judicious mix of deep rooted and shallow rooted, taller, dwarfs, creepers and bushes, to suit to different soils, like shallow, deep or sandy to meet varied family needs in the pre-market epoch. Each crop had a different stand and was harvested at a different time, though sown around the same time. They were native strains that could be reused through the practice of domestic seed banks. These practices acted as an insurance against total failure of a single crop. They were symbiotic and a deterrent against certain pests and diseases.

The second branch of Causes and Effects are as follows:

Traditional Agriculture Not Meeting Youth Lifestyle Needs

Subsistence cultivation carried out more as a custom or tradition offers very little excitement to youth. On the other hand, when small and marginal farmers attempt to imitate mainstream capital intensive practices of the *Ryots*, they land themselves in a soup due to insufficient knowledge, inadequate capital, and an extremely low risk taking capacity.

Lack of Alternatives to Traditional Agriculture

The younger generation of farmers' sons and daughters get increasingly alienated and look to other, often non-existent, economic opportunities which are also way beyond their reach. Unmet expectations and unsated dreams lead to a general frustration and discontent in the countryside.

Disinterest in Agriculture

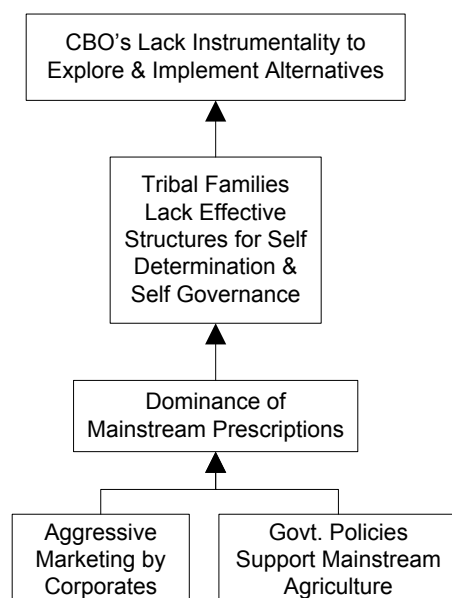
The possibility of being agriculturist, as a career option does not excite the youth as they see it has no dignity attached to this entire livelihood option. Large corporate farming might look lucrative but is not accessible to the younger generation of farmers' children.

Both these branches culminate in the Main Problem that this Project will address:

Tribal Communities & Marginal Farmers Pursue Mainstream Agriculture Without Wherewithal

Grassroots NGOs knew, from first hand contact with acute farmer distress, that small and marginal farmers had neither the financial wherewithal nor risk taking capacity to enter mainstream agriculture practices. More importantly, they intuitively questioned the environmental sanity of such practices.

10.2.2. CBOs Lack Instrumentality to Explore & Implement Alternatives



Aggressive Marketing by Corporates

The corporates through their local agents make 'godfather' offers that the indigenous farmers in their desperate situation can hardly refuse. An attractive package deal is offered that has a loan component couple with cash and inputs incentive, which meets the immediate needs of the farmer.

Government Policies Support Mainstream Agriculture... Dominance of Mainstream Prescriptions

When the government aggressively pushes HEIDA, mainstream prescriptions come to dominate in every sphere. Direct and indirect support and subsidies are provided to follow these prescriptions.

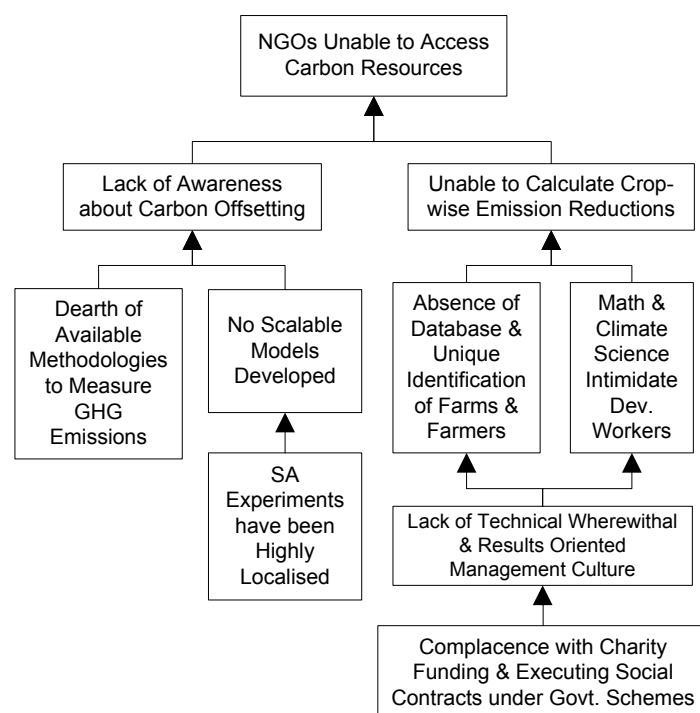
Tribal Families Lack Effective Structures for Self Determination & Self Governance

Agriculture related choices are family based in tribal areas and there are no effective community structures for self-determination and self-governance, especially when the agricultural economy is threatened by induced agriculture promoted by the government or the onslaught of corporate greed. The PRI institutions do not take up issues related to agriculture.

CBO's Lack Instrumentality to Explore & Implement Alternatives

The single institution that Sustainable Agriculture banks upon for its success is a strong and functioning CBO with structure and discipline, genuine bottom-up planning, openness, transparency and answerability. For such a Farmer Organization to instil a sense of purpose, it needs to encompass every single facet of family life. It cannot be a watershed committee or beneficiary organization or functional group designed to foster participation in predetermined plans and budgets. This is the single biggest challenge that grassroots NGOs face. Low Carbon Farming, like any other CDM Project, needs a passionate sense of ownership and genuine control by primary stakeholders to steer thousands of individual actions to fruition.

10.2.3. NGOs Unable to Access Carbon Resources



Complacency with Charity Funding & Executing Social Contracts under Government Schemes

Many NGOs have become free or underpaid social contractors who implement government programmes in a selfless and efficient manner. The vast majority of them have no say in the formulation of policy and very little, if any, in actual implementation, especially in large land based interventions and also in the delivery of rural credit. Quite apart from these being narrowly sectarian, *they promote the mainstream paradigm of development.*

Lack of Technical Wherewithal & Results Oriented Management Culture

The ability of most NGOs to think out of the box is very limited. Even their participation in the development debate is often an echo of voices from the North. Grassroots NGOs haven't developed a results oriented management culture, along with the rigour to measure and monitor.

Absence of Database & Unique Identification of Farms & Farmers

Low Carbon Farming requires a rigour and discipline to verifiably prove that SA activities are actually reducing emissions when compared to the baseline derived from mainstream cultivation. This requires a heavy initial investment at the Participant NGO level (which will be defrayed, over time, when more and more lands are brought under LCF) and also in terms of expertise and scientific backup.

Math & Science Intimidate Development Workers

The 'math', in itself, is difficult for many grassroots NGOs to bear. The 'science' is well nigh impossible to meet individually, in term of cost as well as resource availability. This is a sound argument for forming Coalitions.

Unable to Calculate Crop-wise Emission Reductions

Grassroots NGOs applied a scientific temper to alternate technologies derived from native wisdom that withstood the test of time of thousands of years and developed SA practices. Though they used SA practices in small scales, there were no attempts made towards scalability of such efforts. Though there have been attempts to create models of SA practices, the complexity of crop-wise calculation of emission reduction and absence of available methodologies to measure GHG and Emission Reduction has kept the development organizations from accessing the carbon market.

Sustainable Agriculture Experiments have been Highly Localised

Many grassroots NGOs, including the 6 Participants of this 3rd FCN-LCF Coalition, have been involved in promoting Sustainable Agriculture practices for several years. For many, this has been a natural continuum of mini and micro watershed work they have done for years on fields belonging to their clientele – small and marginal farmers in drought prone regions.

No Scalable Models Developed

However, these SA practices of grassroots NGOs could never be scaled up to be offered as an effective alternative to mainstream cultivation. They stayed as pilot demonstrations on a few fields. As a result, their work could not be presented as a quantum alternative to mainstream practices. They did not become Models.

Dearth of Available Methodologies to Measure GHG Emissions

Sustainable Agriculture did not capture the imagination of climate activists and climate change scientists. No methodologies were developed to calculate the GHG emission reduction potential inherent in their work. Adaptation was not in their vocabulary and Mitigation translated into cerebral policy choices, subtly steered by the industrial powers that be.

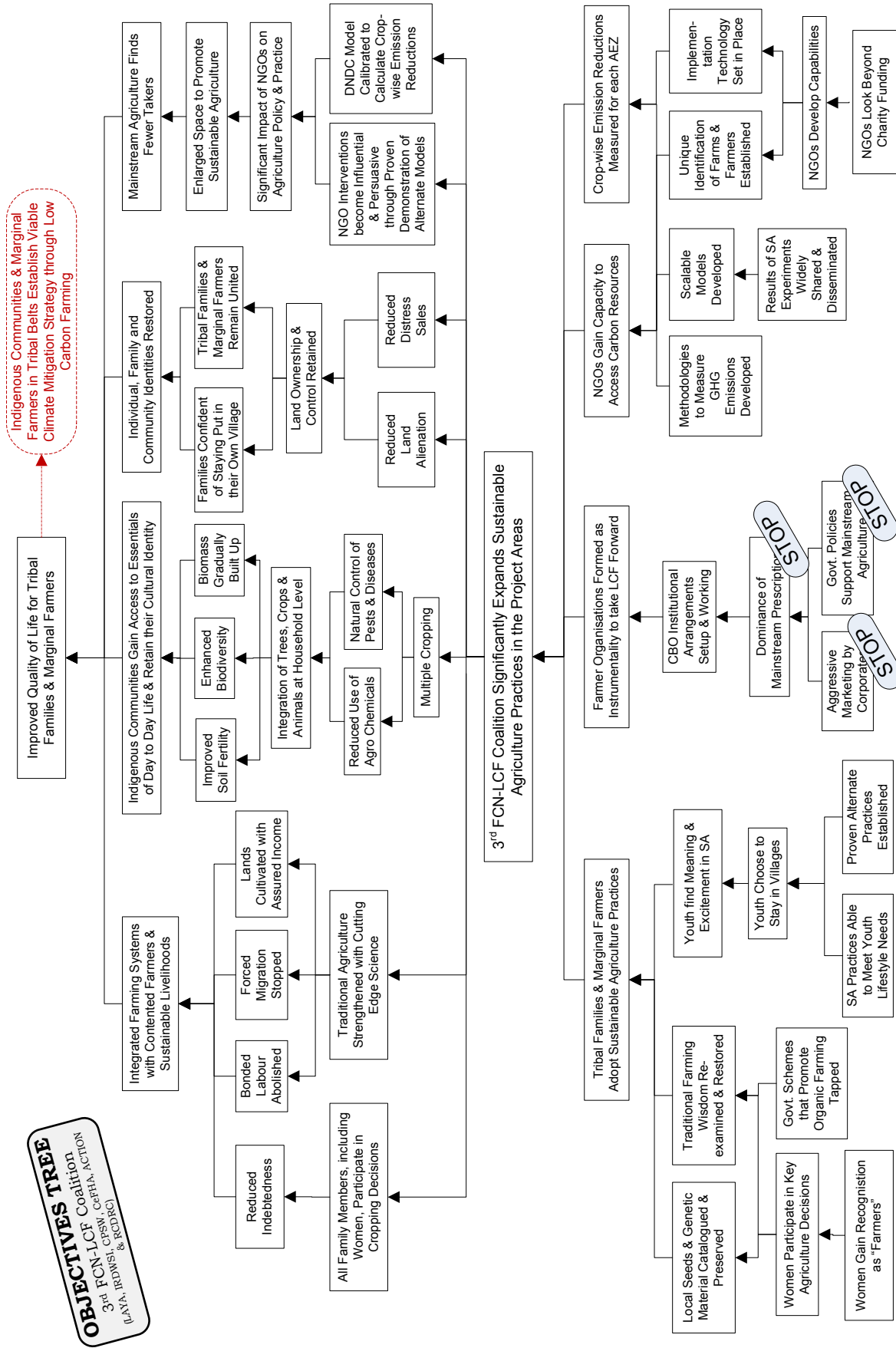
Lack of Awareness about Carbon Offsetting

Government policies unashamedly support HEIDA, as much due to mistaken economic policies as an inherent tendency to support the agro-industrial class. This led to a general lack of awareness of the carbon market in general, and land based mitigation activities/calculations in particular.

NGOs Unable to Access Carbon Resources

The CBOs that the NGOs have built possess the organizational structure, but not the institutional arrangement to pool the emission reductions they individually generate at the farm level, and aggregate them into a single unit of sum and substance for the market. The emission reduction factor is so low in agriculture: hovering around 2 tCO_{2-e} per acre per crop; and also due to a low price of less than € 6 per VER. Even such aggregation doesn't add up to the volume needed for trade in the voluntary carbon market. Hence, a super aggregation of sorts, across several grassroots NGOs,

is needed if we have to play from a position of strength. This is another compelling argument for getting together in Coalitions. Reorienting long established NGOs with presence and proven staying capacity to develop business acumen and deal with the market is not easy. Only a focused coalition, business like and professional, can buoy up this novel adventure.



12. PROJECT PLANNING MATRIX

INTERVENTION LOGIC	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
DEVELOPMENT GOAL			
<ul style="list-style-type: none"> □ Small Holder Farming of Indigenous Communities & Marginal Farmers in Tribal Belts Establishes Viable Climate Mitigation Strategies through LCF 	<ul style="list-style-type: none"> • Methodology Accepted by International Community 	<ul style="list-style-type: none"> ⇒ DNDC Model Calibrated for all main Crop(s) grown by Tribal Families & Marginal Farmers in AEZ 12.1, 12.2, 7.3., 18.4 & 11 ⇒ Voluntary Carbon Markets recognise Offsets Generated by LCF as Pro-Poor Fungible Instruments 	<ul style="list-style-type: none"> • LCF will prove GHG Reductions in Marginalised Crops grown by Tribal Families
PROJECT PURPOSE			
<ul style="list-style-type: none"> ○ 3rd FCN-LCF Coalition Significantly Expands Sustainable Agriculture Practices in the Project Areas 	<ul style="list-style-type: none"> • Increased Returns to Tribal Families and Marginal Farmers 	<ul style="list-style-type: none"> ⇒ Monitoring Against Baselines by Village Communities 	<ul style="list-style-type: none"> • Participating Farmers do not Succumb to State Supported Corporate Invasion by: <ul style="list-style-type: none"> ⇒ Adopting Mainstream Practices ⇒ Selling off their Lands
	<ul style="list-style-type: none"> • Annual Increase in Number of Participating Farmer Families in each NGO Area of Coverage 	<ul style="list-style-type: none"> ⇒ Online Reports generated by Monitoring Software 	
	<ul style="list-style-type: none"> • Annual Increase in Proportionate Area under Sustainable Agriculture vis-à-vis Total Landholding 	<ul style="list-style-type: none"> ⇒ Online Reports generated by Monitoring Software 	
	<ul style="list-style-type: none"> • No. of 3rd Party Verifications Cleared 	<ul style="list-style-type: none"> ⇒ xyz tCO₂-e of Verified Emission Reductions issued 	
PROJECT OUTPUTS			
A. 6 PARTICIPANT NGOS GAIN CAPABILITY TO ACCESS CARBON RESOURCES	A.1. LCF Teams Up and Functioning at each NGO	<ul style="list-style-type: none"> ⇒ Progress in Preparatory Work as indicated by Online Reports generated by Monitoring Software ⇒ Quarterly Coalition Meetings 	
	A.2. Package of Sustainable Agriculture Practices and Fact Sheets for Scaling Up	<ul style="list-style-type: none"> ⇒ Quarterly Coalition Meetings ⇒ Info Sheets & Pamphlets used in Farmer Orientation 	
	A.3. 8,950 acres Identified, Plotted & Delineated by 6 Participant NGOs in 8 months, by June 2012	<ul style="list-style-type: none"> ⇒ Area of Discrete Plots Delineated ⇒ No. of Title Deeds Recorded ⇒ No. of Carbon Contracts Executed 	

B. 6 FARMER ORGANISATIONS FORMED AS INSTRUMENTALITY TO TAKE LCF FORWARD	B.1. Legal Incorporation	⇒ Registration Documents ⇒ Audited Finance Statements ⇒ Internal Assessment Report against FCN Standards	
	B.2. Sex & Ethnic Parity in the Membership & Elected Leadership	⇒ Gender Analysis of Membership ⇒ Quality of Participation in Decision Making	
	B.3. 7,500 Participating Farmers Aggregate Carbon Credits with their respective Farmer Organisations by December 2012	⇒ No. of Signed Carbon Contracts	
C. TRIBAL FAMILIES & MARGINAL FARMERS ADOPT SUSTAINABLE AGRICULTURE PRACTICES	C.1. 7,500 Participating Farmers adopt listed SA Practices by the 2012 crop season... ...15,400 Farmers by the 2014 crop season	⇒ Online Reports generated by Monitoring Software	<ul style="list-style-type: none"> • Empowered Women fully involved in Family Cultivation • Youth find Meaning and Excitement in SA Farming • Participant NGOs have Own Resources & Wherewithal to undertake Extension Services and propagate SA Practices
	C.2. 9,850 Acres of Land Holdings Irrefutably Identified & Delineated by 2012... ...25,300 Acres by 2014	⇒ Online Reports generated by Monitoring Software	
	C.3. Level of Knowledge on Climate Change, Carbon Offsetting and LCF among Participating Farmers	⇒ Test Score and Assessment against Fact Sheet	
	C.4. Additional SA Practices Brought into the Basket of Interventions	⇒ Record of Identified SA (package of) Practices	
	C.5. Annual Increase in Volume of Carbon Resources Accessed by Participant NGOs	⇒ Audited Accounts; Cumulative Bank Receipts	
	D. CROP-WISE EMISSION REDUCTIONS MEASURED IN 5 SUB AGRO ECOLOGICAL ZONES	D.1. Field Laboratories Functional at 4 NGOs by June 2012	⇒ Procurement of Lab Equipment ⇒ Trained Lab Operators in Place ⇒ Inspection Report by FCN Tech Team
D.2. 3 Mainstream & 3 SA Reference Plots Readied for each Main Crop in 4 NGOs by June 2012		⇒ Inspection Report by FCN Tech Team	
D.3. DNDC Model Calibrated after end of the 2014 crop season		⇒ Crop(s) & Practices Listing by DNDC Authority for each AEZ	

ACTIVITY PROCESSES	PROJECT COST : DETAILS	AMOUNT	SOURCE	ASSUMPTIONS
A. 6 PARTICIPANT NGOs GAIN CAPABILITY TO ACCESS CARBON RESOURCES				
A.1. Attending Coalition Meetings	Food and accommodation to hold 7 FCN-LCF Coalition Meetings at Bagepalli @ ₹ 20,000 per meeting	140,000		
	NGO Dynamics Team of the FCN Tech Team visit all 6 NGOs and do a Due Diligence			
	4 day Logical Framework Analysis workshop			
	Preparing Strategic Plan & Project Application			
	Salary of 1 LCF Facilitator @ ₹ 40,000 x 15 months	600,000		
	Travel, telephone and other overheads @ ₹ 10,000 p.m. per NGO x 15 months	900,000		
	Admin, Finance & Reporting Services @ Rs 30,000 p.m. x 15 months	450,000		
A.2. Appointing LCF Team at each Participant NGO	Identification of existing Staff and/or recruiting new Staff			
	Revisiting systems and structures of within each NGO to see adequacy and appropriateness			
	Salary of 8 LCF Coordinators with technical/computer skills to implement the LCF Pilot Project at each Participant NGO @ ₹ 20,000 p.m. x 15 months	2,400,000		
	10% Staff Fund	360,000		
A.3. Identifying Village Volunteers	Identification of village Youth (men and women) as LCF Promoters in each village			
A.4. Training & Orienting of LCF Teams	Conducting sessions on Climate Change, Carbon Offsetting and Low Carbon Farming to LCF Staff and Village Volunteers			
	Travel & incidental cost for 111 Field Staff & Village Workers to attend GPS training at Bagepalli in 6 batches @ ₹ 500	55,333		
	Food and accommodation for 111 Field Staff & Village Workers @ ₹ 500 p.d. x 8 days	442,667		
	Local Transport to visit villages and take readings for 3 days per batch @ ₹ 2,000	36,000		
A.5. Procuring Hardware & Software	License fee for 6 LCF Monitoring solutions, with 5 modules, customized by Tristle @ ₹ 850,000 + 10.3% Service Tax = ₹ 937,550 per Participant NGO	5,625,300		
	8 Computer Servers to load the intranet monitoring solution @ ₹ 115,000	920,000		
	5 VXL TC 3241 Thin Client (Windows XE) Terminals with monitor and keyboard/mouse x 8 Project Areas @ ₹ 22,000	880,000		

	Switch & Network and cabling @ ₹ 10,000 x 8 Project Areas	80,000		
	8 Two KV UPS @ ₹ 40,000	320,000		
	8 1.5 tonne Air Conditioners @ ₹ 28,000 x 8 Project Areas	224,000		
	55 Digital Cameras @ ₹ 6,500	359,667		
	111 Handheld E-Trek Instruments to take GPS readings @ ₹ 7,500	830,000		
A.6. Conducting Demographic & Land holding Surveys	Cost of printing 7,500 formats and stationery @ ₹ 2.50 per format	18,750		
	Cost of planting an average of 7 bond stones on the corners of 7,500 land holding @ ₹ 20 per stone	1,050,000		
	Stipend for 111 Village Workers to conduct demographic surveys and take GPS readings @ ₹ 1,500 p.m. x 4 months	664,000		
B. 6 FARMER ORGANISATIONS FORMED AS INSTRUMENTALITY TO TAKE LCF FORWARD				
Formalizing user groups into village/ Mandal level federation of CBOs				
Training on institutionalisation				
LCF team and village youth to develop community based monitoring systems				
Agreements between Participant NGOs and CBO (user groups/ federation/ farmers)	Legal costs to execute individual Carbon Contracts with 7,500 Participating Farmers @ ₹ 30	225,000		
Training for business principles, climate change and business aspects of LCF				
C. 7,500 TRIBAL FAMILIES & MARGINAL FARMES ADOPT SUSTAINABLE AGRICULTURE PRACTICES				
C.1. Incentivising Adoption of LCF with Carbon Resources	List Participating Farmers & Villages for scaling up SA Practices			
	Cost of preparing LCF awareness building material and modules; translating into colloquial languages @ ₹ 10,000 per NGO	60,000		
	Food costs & logistics to conduct Gram Panchayat level meetings to explain LCF to 7,500 Participating Farmers @ ₹ 30	225,000		
	Set up Farmer Field Schools			
C.2. Identification of major Crop(s) to concentrate on Low Carbon Farming	Identify major Crop(s) to concentrate on			Participant NGOs support each other by sharing resources and expertise
	Identify Sustainable Agriculture (package of) practices			
	Developing Training Modules for this purpose			
C.3. Providing Technical Support				

D. CROP-WISE EMISSION REDUCTIONS MEASURED IN 4 SUB AGRO ECOLOGICAL ZONE				
D.1. Carrying out Scenario Development for each Participant NGO area of operation				Tasks to be carried out by FCN Tech Team
D.2. Undertaking Soil & Manure Sampling & Analysis				
D.3. Studying current Sustainable Agriculture (package of) Practices				
D.4. Orienting key Participant NGO/CBO staff/functionaries on Emission Reduction Science				
D.5. Procuring Equipment to set up 3 GHG Laboratories in as many NGOs	4 Gas Analysers @ ₹ 990,000		3,960,000	Tasks to be carried out by FCN Tech Team
	Gas Panels & Purifiers @ ₹ 80,000		320,000	
	4 Six KVA Online UPS with 16 batteries per NGO @ ₹ 165,000		660,000	
	4 sets of Soil Augers @ ₹ 30,000		120,000	
	54 Perspex Boxes @ ₹ 2,500 per NGO x 3		540,000	
	Lab furnishing - tables, dividers, doors, etc. @ ₹ 50,000 per NGO		200,000	
	Thermometers, Rain gauge and others		12,000	
	Thermometer probe for Perspex box inner temperature		4,000	
	Gas cylinders (Carrier gas + Calibration) @ ₹ 60,000		240,000	
D.6. Selecting & Training Laboratory In-charge Personnel	Exposure trips to suppliers of Laboratory Equipment			Task to be carried out by FCN Tech Team
	Salary of 4 GHG Lab In-charge to collect Gas Samples @ ₹ 15,000 p.m. x 6 months		360,000	
	Salary of 4 Asst. GHG Lab In-charge to analyse and record Gas Samples @ ₹ 10,000 p.m. x 6 months		240,000	
E. GHG EMISSION REDUCTIONS CALCULATED				
E.1. Selecting 6 Reference Plots in 4 Project Areas for Mainstream & SA Agricultural Practice	Land Preparation (Levelling and fencing 1 acre land, splitting into plots, bunding and other maintenance @ 3 plots per SA Practice + 3 plots per Mainstream Practice x 2 Crop(s) @ ₹ 3,000 per plot x 4 Project Areas where Referencing will be carried out		144,000	
	Subsidy to partially cover Farmer's input cost - seeds and fertilizers @ 3 plots per SA Practice plus 3 plots per Mainstream Practice x 2 Crop(s) x 4 Project Areas where Referencing will be carried out		96,000	
E.2. Developing Farmer Diaries				

E.3. Training Reference Plot Farmers on rigour and procedures				
E.4. Procuring GHG Sampling Equipment	54 Mild steel metal base frames @ ₹ 1,500 per Project Area		324,000	Task to be carried out by FCN Tech Team
	250 Autoclavable rubbers (sampling port or septum) @ ₹ 50 x 4 Project Areas		50,000	
	150 Syringes with three-way stoppers and Vacutainers @ ₹ 200 x 4 Project Area		120,000	
	Minor tools or - mini fan, fixtures, wires, corks, adhesive etc. @ ₹ 10,000 x 4 Project Area		40,000	
	Bus Fares & Transport to collect daily GHG Samples from the Reference Plots @ ₹ 4,000 x 4 Project Area		96,000	
E.5. GHG Certification costs	10% Project Cost as Professional Fee to FCN towards salary of LCF Expert, travel, overheads, sourcing satellite imageries, studies and secondary data, methodology certification costs, etc.		2,439,172	
TOTAL			₹ 26,830,888 € 419,233	