

FCN Low Carbon Farming Coalition Programme (April 2010 to December 2020)

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FCN-EDF Low Carbon Farming¹ Coalition Programme (April 2010 to December 2020)

1. VISION

The vision of the LCF Coalition is of protecting the livelihoods of small and marginal Farmers with whom they work, while enhancing the quality of their lives and moving into a new orbit of Sustainable Agriculture practices and Prosperity

2. MISSION

Fair Climate Network will provide leadership and blaze a trail by leveraging non-traditional carbon markets and show the way for small and marginal Farmers to reverse and restore the damage done to their lives, livelihoods and the environment in the pursuit of High External Input Destructive Agriculture (HEIDA).

This restoration will be pursued under conditions of equity, transparency, accountability and ethical business practices.

3. CORE VALUES

A. Unity in Diversity	<p>The LCF Coalition understands that there cannot be a single grand design for all constituents to follow. Diversity in regional situations, local history, culture, social organisation and livelihood practices will be integrated under overarching strategic objectives.</p> <p>Willingness to work together subsumes mutual respect and the spirit of equal partnership.</p>
B. Collective Decision Making	<p>It is recognised that the success of the LCF Coalition will depend on institutional mechanisms, set up at each Participant NGO level, for representation and collective decision making by Participating Farmers.</p>
C. Transparency and Accountability	<p>A high level of transparency and accountability will be ensured through sharing and discussion, using good communication technology. All aspects of transactions will be sufficiently demystified and simplified for all stakeholders to understand.</p>
D. Organisational Learning	<p>The LCF Coalition recognises that this is a “green-fields” area. Mechanisms need to be created for organisational learning.</p>
E. Respect for the Environment	<p>The key value on which this LCF Coalition is built is a respect for the Environment and a determination to reverse and restore the damage that has been done to it in the past.</p>

¹ Low Carbon Farming = Sustainable Agriculture *plus* the Generation of verified Carbon Credits

<p>F. Business Sense</p>	<p>It is recognised that the LCF Coalition will have to modify typical NGO attitudes and transact with the Business sector on business terms. These terms rely on the fundamental theorem of exchange where value delivered and value paid must be acceptable to the parties involved.</p> <p>The LCF Coalition will strive for the highest quality based on integrity and reliability.</p>
<p>G. Ethical Business Practices</p>	<p>The LCF Coalition is conscious that the Business environment is rife with practices which may not always be ethical or acceptable.</p> <p>We will firmly steer clear of dubious practices and transactions which can jeopardise its moral stature.</p>
<p>H. Enriched, Enhanced Product</p>	<p>The Carbon Offset Market will be used not only as a commercial trading window, but as an opportunity to deliver an enriched and enhanced product where the buyer's money will pay for more than units of emission reduction.</p> <p>Each VER will contribute to the restoration of damage caused to the environment and the lives of farmers and their families.</p>
<p>I. Small and Marginal Farmers are the Ultimate Beneficiaries</p>	<p>Although NGOs will take the lead in all negotiation and programme management, the money that flows as a result of these transactions is ultimately intended to benefit Small and Marginal farmers and improve their lives.</p>

4. OBJECTIVES

4.1. Problem Analysis

The Focal Problem that this LCF Coalition Programme addresses is:

Climate Activists & NGOs Unable to Access Carbon Moneys & Scale Up Sustainable Agriculture Coverage & Practices

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.

Please see the Problem Tree in this document

4.2. Objectives Analysis

The identified Problem Tree was converted into an Objectives Tree by changing the negative statements to positive ones.

Grassroots NGOs Access Carbon Moneys & Scale Up Sustainable Agriculture Coverage & Practices

Please see the Objectives Tree in this document

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.

5.1.2. Strategy

Agricultural VER Projects support sustainable farming by encouraging farmers to adopt a basket of practices that reduce/minimize/remove the use of synthetic fertilizers (methane avoidance and N₂O deduction) while, at the same time, improving soil carbon content (Sequestration). 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.

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. 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 ADATS' attempt to develop an Afforestation/Reforestation (A/R) CDM, no one has ventured into Land Use and Land Use Change (LULUC) projects.

But the reality is that a large number of Network 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 measures 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 SA 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 the 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 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 like Anantapur and Chickballapur districts, 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 few 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.

5.2.3. Sustainable Agriculture & Peasant Youth

An issue with subsistence cultivation carried out more as a custom or tradition, is that it offers very little excitement to the participants. 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.

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.

Through Low Carbon Farming, we can try to bring an excitement into agriculture, using environmentally sound, state of the art technologies that are not mainstream. This will absorb

schooled and educated peasant youth in productive activities in an expanded rural economy. Skilled and motivated labour force will be engaged in profitable cultivation, with regular and reliable income. Field crops will be grown mainly for food security. Non-Farm jobs and economic activities will be created through an increase in biomass.

5.3. History of FCN & Sustainable Agriculture

5.3.1. 4th CDM Meeting – 3 December 2008

9 of us attended a half day meeting hosted by SEDS at Anandapuram, where we explored the possibilities of bringing Sustainable Agriculture within the realm of CDM. M.P. Kanal explained the CDM cycle, and Sudha Padmanabha enumerated existing methodologies.

We came to the sobering conclusion that there wasn't much scope to interpret existing SA practices of grassroots NGOs within CDM. 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.

5.3.2. 5th CDM Meeting – 27 & 28 March 2009

4 months later, Sudha made a detailed presentation on CDM methodologies in agriculture sector, which is dominated by methane avoidance projects, and none on Sustainable Agriculture. Once again, we couldn't see much scope in pursuing the CDM path. But FCN Members did get clarity on opportunities and challenges. Our resolve to find a solution got steeled.

5.3.3. 6th CDM Meeting – 4 & 5 July 2009

3 months later, the second day of our CDM Meeting was entirely devoted to discussions on the scope of agriculture in CDM. Sudha Padmanabha made a presentation that pretty much summed up that there are no established CDM Methodologies for the type of activities we grassroots NGOs would take up with small and marginal farmers. M.P. Kanal and Ram Esteves asserted that, in spite of this, agriculture was going to be a major sector in the coming years.

Richie Ahuja then explained how the Duke Standard had already been developed. The first glimpse of hope emerged in this meeting with a better understanding of the VER route, Voluntary and US markets. It was decided to set up a long term collaboration between Environment Defense Fund (EDF), New York, and the Fair Climate Network.

5.3.4. Zach Willey's Visit – 19 - 29 January 2010

Environmental Defense Fund, New York, is a leading national non-profit organisation that links science, economics and law to create innovative, equitable, and cost effective solutions to society's most urgent environment problems.

Zach Willey, a Senior Economist at EDF, specializes in developing economic solutions to greenhouse gas emissions and natural resource degradation problems in terrestrial ecosystems. Along with Bill Chameides, he has co-edited a Handbook to use when evaluating which standards to adopt for the voluntary market, "Harnessing Farms and Forests in the Low-Carbon Economy : How to Create, Measure, and Verify Greenhouse Gas Offsets" A synopsis is available in our Library at <http://www.fairclimate.com/library/>

Zach and Richie visited 4 grassroots NGOs, including ADATS, SEDS, AF and Sacred, from 19 to 25 January, and held discussions with PWDS, an SA Network from Tamil Nadu. On 26 and 27 January, they met with various scientists from SAN, ICRISAT and CRIDA at Hyderabad. A Synopsis of SA 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.

5.3.5. 7th CDM Meeting – 1 March 2010

A month later 5 Participant NGOs met at Bagepalli, along with Richie Ahuja of EDF, for a full day to take matters forward. We first reviewed what had happened in the past 15 months. Then 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.

1. Pilot Phase (April 2010 to March 2011)
 - We agreed upon the strategy for a year long Pilot Project where NGO skills will be developed through:
 - Delineating Discrete Plots where Sustainable Agriculture will be adopted through GPS readings and GIS mapping
 - Assessing baseline emissions from current (mainstream) agriculture
 - Listing current Sustainable Agriculture practices
 - Estimating emission reductions from these SA practices
 - Drawing up Carbon Contracts wherein Participating Farmers aggregate their carbon credits and authorise their respective Participant NGOs to trade them
 - Presenting these reductions as scientifically validated “Offer Sheets” to potential buyers of carbon credits
 - Developing a domestic, non-compliance market for high value carbon offsets that will be generated through Low Carbon Farming
 - The making of Offer Sheets and sourcing carbon revenues through the forward sale of these carbon offsets were identified as the 2 explicit and unambiguous Outcomes of this 1 year Pilot Project.
2. Implementation Phase (Crop Season 2011 to 2014)
 - Actual project implementation will be taken up over the next 3 years on 7,500 hectares. Small and marginal farmers would be incentivised, with carbon revenues, to adopt Sustainable Agriculture practices.
 - During this project implementation phase, the 5 Participant NGOs will continue delineating the discrete plots of small, marginal and other drought affected farmers.
3. Extension (2012 to 2020)
 - Fresh Offer Sheets will be made for blocks of Participating Farmers/discrete plots, carbon resources accesses, and the programme continually extended to their entire coverage area over the next 10 years.
 - Participant NGOs committed themselves to reach 50% of the total landholdings of constituent farmers in their respective areas of work.
4. Expansion Phase (2012 to 2020)
 - During this 3rd (Extension) phase, other FCN Members will be facilitated to join the LCF Coalition Programme.

Participant NGOs gained a clear understanding of the long haul – scale, timeframe, objectives, goal, purpose, *et al.*

5.3.6. Strategic Planning Workshop – 13 & 14 March 2010

12 representatives from the 5 Participant NGOs attended a 2 days workshop facilitated by Ajit Mani of Interventions (India) Pvt. Ltd. to draw up this Strategic Plan for the LCF Coalition Programme.

Together, they listed the Core Values and underwent an exercise to articulate the Vision and Mission. After that, a Stakeholder Analysis was done and the Importance-Influence matrix was

developed. A SWOT Analysis led them to derive the Strategic Priorities. Then followed the Problem Analysis and Objectives Analysis in order to construct the Project Planning Matrix with Goal, Purpose, Outputs and Activity Processes.

This last had already been done in great detail by the Participant NGOs, with Activity Process, Task, Job, Cost and Source.

6. EDF-FCN COLLABORATION

6.1. Environment Defense Fund – Fair Climate Network Partnership

The EDF-FCN partnership will 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 will:

1. Inventorise current farming practices and calculate the Baseline Emissions in 4 regions where Accion Fraternal, 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 will 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 will 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 will delineate project boundaries, establish tenure, and develop carbon contracts with farmers.

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

6.2. Objectives of the FCN-EDF Collaboration

In order to get clarity on how the Fair Climate Network (FCN) would collaborate with the Environment Defence Fund (EDF), we outlined the Objectives:

1. Small and Marginal Farmers we are working with Encouraged to Shift to Low Carbon Farming through Specific Shifts in Farming Practices/Technologies
2. Small and Marginal Farmers Assisted to claim Carbon Credits from the Voluntary Markets

6.3. Strategy

The strategy to achieve the above Objectives would be as under:

6.3.1. Staffing

- Appoint a full time Expert in Low Carbon Farming to join the Tech Team of the FCN. We are looking for a Ph.D. in Environment Science, Agricultural Economics or related subject, with hands on experience in supporting the cultivation of small and marginal farmers.
- EDF will finance the salary and operational costs of this Expert.
- Assign a Junior CDM Specialist to assist the Low Carbon Farming Expert and, at the same time, learn under her/him.

6.3.2. Field Studies

- Make a Technical Assessment of Baseline Emissions of current farming practices of Participating Farmers.

- Estimate the Emission Reductions that can be achieved by adopting SA practices introduced by Participant NGOs.
- Assess the Managerial Capacity of NGOs and Communities to implement a Low Carbon regime.
This can be done by Organisation Development Consultants who have a deep appreciation of NGO work.

6.3.3. Technologies & Methodologies

- Inventorise new or adapted Technologies that Participating Farmers can follow in their move towards Low Carbon Farming
E.g. Reduced/No Tillage, Change in Cropping Pattern, Reduced Application of Chemical Fertilizers & Pesticides, Increased use of Farm Yard Manures, Improved Composting, Anaerobic Decomposition of Farm Wastes (through Digesters), Planting/Protecting Trees, etc.
- Identify existing Methodologies or develop new ones to Monitor Emission Reductions from each of the above practices
- Undertake monitoring and estimation of Emission Reductions for the recommended Low Carbon farming technologies

6.3.4. Carbon Contracts

- Develop Activity Processes and implement GPS and GIS Technologies (hardware and software) to identify each landholding of Participating Farmers and map the Discrete Plots. ADATS/Coolie Sangha will share what has been done in this regard, to satisfy far more stringent and demanding requirements of A/R CDM under the UNFCCC regime.
- Obtain documents that irrefutably link each Discrete Plot to a Participating Farmer – Property/Tenure Rights
E.g. Title deeds, *Pattas*, *Saguvali Chitti*, DC Grant papers, Cultivation certificates, *Pahani*, etc.
- Explain Carbon Contracting in a clear and transparent manner to each Participating Farmer.
- Obtain Carbon Contracts that authorise the Participant NGOs as Aggregators of Carbon Credits to deliver against forward financing.

6.3.5. Packaging

- It is imperative that Participant NGOs and Participating Farmers realize that the primary reason to move to Low Carbon Farming is to support better farm economics – i.e. Small and marginal farmers they get better returns, yields and prices for the same or a lower input cost.
- The rationale to package this is that many of the input costs that were historically viewed as “Operating Costs” (e.g. synthetic fertilizer, deep ploughing, etc.) can now be viewed as “Investments” (e.g. biomass along bunds, compost application, harrowing, etc.). Participating Farmers would be working to build long term natural fertility of their soils, and also a resilience in the farm ecosystem.
- Mitigation of Green House Gases should not be the main driver. New practices should be adopted because they will result in better land management and profitability in the long run.
- Carbon Credits and associated Carbon Revenue received for any mitigation should be viewed as the proverbial “icing on the cake”.
- One could view Carbon Revenues emanating from sustainable cultivation practices as “Risk Premium” since there is always a perceived as well as real risk in changing behaviour.

6.3.6. Implementation

On 29 January 2010, we held a round-up meeting at the FCN Tech Team Office in Bangalore, attended by Zach Willey, Richie Ahuja, representatives from all 4 Participant NGOs, and our CDM Specialists.

Zach's observation was that expertise and capacities in the visited NGOs are much higher here when compared to many parts of the world. They already have developed SA practices. Therefore, when choosing a Standard to certify our projects, we should use the highest of them.

We agreed that our Low Carbon Farming efforts should add to the ecological capital of the regions we work in. This was not just vital for the Project to succeed, but also to showcase added benefits like conserving water, energy, soil, community, biodiversity, etc. and add value to the VERs we offer in the market. Aggressive pitching of our Emission Reductions is needed in a Buyer's Market where they are not forced or obliged to buy VERs for compliance reasons.

Low Carbon Farming projects we take up in our respective NGOs should, for the time being, be very practical and immediately implementable. It may be best to bundle 5-6 existing Sustainable Agriculture practices that are already demonstrated and accepted by farmers into a project. Perhaps a handful of new ones can be added, provided we are sure that farmers will buy into and adopt them. It is important to "stack" these practices as they combine together to provide larger sums of VERs from the same plot of land.

Participating Farmers have to be educated, chosen, and the Discrete Plots on which they will implement project measures delineated, mapped and overlaid on satellite imageries. Periodic monitoring through stratified sampling will be done to verify Emission Reduction and sequestration. Carbon Contracts have to be drawn up wherein Participating Farmers agree to aggregate all the tCO₂-e they individually generate as Emission Reductions and offer them in the market as VERs. It would be best if the Participant NGOs are the Aggregators at each project region.

Participant NGOs will prepare their "Offer Sheets" which describe the block of carbon that is being offered. This will be a snapshot of the Project, which summarises the baseline, describes the Sustainable Agriculture practices that will be undertaken, calculates the tCO₂-e reduced through these practices, gives a time frame, describes the monitoring and verification plan, and spells out the delivery uncertainties. An asking price of US\$ 7-8 per tCO₂-e would be realistic for the quality of Agriculture VERs we can generate.

Initially, it may be realistic to keep the first Offer Sheets at 3-4 years. Mechanisms to insure the buyer against the risk of non delivery will have to be built into these Offer Sheets. They could, for example, offer just 75%-80% of the expected VERs and keep the remaining as a risk management tool. If there are no issues, then the remaining 15%-20% could be sold in the open market.

7. PARTICIPANT NGOS

7.1. Accion Fraterna (AF)

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AF is a 27 year old NGO which works in the field of Sustainable Agriculture, rural employment, vocational training, etc. with 60,000 families in over 230 villages.

AF has encouraged the adoption of SA practices in 230 villages since 2007. This is done through promoting awareness and demonstration campaigns through Farm Field Schools. The main crop is groundnut. Where water is available, Paddy and vegetables are grown. Drip irrigation is becoming quite common. AF has a team of Staff including Agricultural Scientists and Engineers, besides experienced Field Workers.

42,675 Farmers are enrolled in the SA programme. These Participating Farmers follow at least one of the below mentioned practices on a total of 200,000 acres.

- Use of Non-chemical fertilizers, Bio-pesticides, Vermicompost, NADEP composting, Decoctions, *Jeevamrutha* – Liquid & Solid, Use of *Azolla*, *Panchagarya*, Bird perches, Summer ploughing, Bon fire, Application of silt, Ploughing across the slope, Biomass plantations, Inter & Border cropping, Farm ponds, Mulching & Kitchen gardens

The following are under experimentation:

- Reduced Ploughing, Reduced Tilling, Direct seeding without ploughing, Harrowing experimented with 6 tile, Seed planting space with 10cm, Soil & Peddle bunding, Development of new ground nut seed – *Anant-Jyoti*

AF is currently working on developing 4 SA practices models. They are:

1. Integrated Farming System (IFS), includes multiple crops, fodder crops and livestock
2. Bio-Intensive Farming System, developed by Dr. Rupella and is implemented on pilot basis in 8 villages
3. Bio-Intensive and Biomass Farming System – generally 10 hectare farms. Biomass is promoted within the farm and on bunds for composting.
4. Farm Forestry – Planting suitable crops around the border and on bunds

7.2. Social Education & Development Society (SEDS)

Contact Person: Manil Jayasena Joshua, maniljayasena@gmail.com , +91 (94405) 79566

SEDS is a 28 year old NGO which works under the motto “towards a greener tomorrow” on natural resources development and management, community organisation, health and education in over 130 villages.

Sustainable Agriculture practices were taken up by SEDS, as a programme activity, from 2008. As of now, they are implemented with 507 Participating Farmers in 21 villages. 64% of them belong to SC/ST and Backward Communities. 102 of them are women farmers. SEDS works mainly with dry land cultivators and the main crop is groundnut. Those who have some irrigation undertake SA practices on paddy and vegetables. Some Farmers own a few animals and they can undertake farm yard manure practices.

In the Farmer Field School (FFS) model, one Farmer per village is selected as a Lead Farmer and he/she undergoes regular training in SA practices. He/she leads the farmer group in the village. The group is taught SA practices through demonstration. Half an acre is under SA practices and another half acre under mainstream practices. Together they measure the benefits and changes. Our SA staff visit these groups every week to give advice and also to monitor.

SA methods differ from village to village but in the main they are.

- Were applicable there will be tank silt application, FYM, *Jeevamrutha* and Biomass Promotion.
- *Azolla* and SRI will be used for Paddy
- Mixed cropping, maintaining optimum plant density & correct quantity of seeds per acre is introduced for groundnuts
- Neem extract, cow urine spray and chilli-garlic spray is used instead of chemical pest control

7.3. Suvisesha Ashram Centre for Rural Education and Development (SACRED)

Contact Person: Philomena, philosacred@yahoo.co.in, +91 (96205) 11980

Established in 1956 and working in 11 villages in Bangalore district, SACRED has a holistic approach to rural development. SACRED aims to empower women and mould a new generation through gender sensitization and environmental awareness, aiming for human justice and equality. Skill training is also part of the programme towards achieving economic development. Children are brought together in the gender equality clubs in order to sensitise them to gender justice.

Ramnagara is a semi arid region and the average annual rainfall is 600-700 mm. 60% of the lands are rain fed and the remaining 40% irrigated with bore wells. The main crops grown are ragi and vegetables. Mango orchards are in plenty. Sericulture is also a major crop.

SACRED has been promoting Sustainable Agriculture for the past 7 years covering 1,030 small and marginal farmers in 30 villages, on 2,700 acres. Women farmers are encouraged to be part of this programme. Staff have been trained in natural resource management, integrated crop management, integrated pest management, soil fertility and promotion of different types of sustainable practices.

SA practices that are promoted include summer ploughing, silt application, farm yard manure, crop change, inter-cropping, seed selection and treatment, vermicomposting, use of herbal pesticides like *Jeevamrutha*, biomass promotion, contour bunding, border crops, neem oil spraying and application of gypsum.

Additionally SACRED has initiated the development of Integrated Agro Model Farm System in 2 villages, covering 2 farmers owning 2 acres in each village. These 2 villages are used as a demonstration to train other farmers. In each village, SRI is promoted on a small scale along with *Azola* production, natural pest control systems, composting, green manure, biomass, herbal pesticide like *Jeevamrutha*, etc. Biogas plants have also been promoted in both villages and the slurry is used as organic manure.

7.4. Bharath Environment Seva Team (BEST)

Contact Person: Athiyaman, bestscindea@gmail.com, +91 (94431) 92290

BEST has been working in the Pudukottai district of Tamil Nadu since 1984. This is a semi arid region and the average annual rainfall is 400-550 mm. 60% of the lands are rain fed, 25% tank irrigated and 15% irrigated with wells and bore wells. The main crops are paddy, groundnut, pulses and sugarcane.

BEST has been involved in Sustainable Agriculture for the past 8 years, since 2002. Staff have been trained in integrated crop management, integrated pest management, soil fertility and promotion of different types of sustainable agricultural practices. They work in 54 villages covering 5,000 acres and 2,000 farmers. Women farmers are encouraged to be part of this programme.

SA practices that are promoted include Farm yard Manure preparation, herbal pesticides like *Panchakavya* and *Amirtha karaisal*, summer ploughing, seed treatment, tree planting for biomass, SRI, vermicomposting, intercropping, crop rotation, low cost drip irrigation, rainwater harvesting and promotion of *Azola*. These are used in cultivation of groundnut and paddy.

In the last 3 years, 150 farmers were involved in intensive Sustainable Agriculture practices covering 80-95 acres in 10 villages. This was mainly done through the Farmers Field Schools.

7.5. Palmyrah Workers Development Society (PWDS)

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PWDS is a development organisation founded in 1977, offers support services to sustain community initiatives.

In over three decades of development efforts, reaching out to thousands of villages and impacting on communities with wider spheres of activities, PWDS programmes have transcended geographical barriers and traditional frontiers. Over the years, PWDS has been instrumental and inspirational in initiating many innovative interventions as expressions of its social commitment.

Currently, PWDS implements 66 field projects, has promoted eleven support organisations with mainstream linkages, and works in 30 districts in Tamil Nadu through network programmes with 44 NGOs as partners.

During the course of time, initiated a separate programme called Centre for Agriculture and Rural Development Services (CARDS) in 1996 as a support service unit, to promote livelihood opportunities through Sustainable Agriculture and enable community access to mainstream resources. CARDS unit was started in Thirunelveli district by developing a demonstration farm in a hundred acre land, donated to PWDS.

Through CARDS, PWDS works for rural development with emphasis on eco-concerns and Sustainable Agriculture by mobilizing rural communities, creating awareness among them, building their capacities, and linking with mainstream resources. Presently CARDS has presence in 36 villages.

Major Objectives include:

1. Mobilising marginal farmers and rural women to promote Sustainable Agriculture
2. Enabling the community to access mainstream resources for development
3. Developing a demonstration farm for training marginal and small farmers with emphasis on economically viable and Sustainable Agriculture
4. Promoting awareness on bio diversity and need for eco-friendly farming with LEISA (Low External Input for Sustainable Agriculture) approach
5. Functioning as an action-research centre for value adding to agricultural products, identifying farm based income generating opportunities, and transferring such alternative livelihood opportunities to the community.

CARDS organises awareness generation programme on biodiversity conservation in collaboration with agriculture resource institutions and participates in a bio-diversity network of NGOs. The programme sensitises the traditional farmers to environmental concerns, eco-friendly farming, Sustainable Agriculture, and the need to re-establish natural balance in agro-eco system. The highlight of the training programme is LEISA approach (Low External Input for Sustainable Agriculture). As a future plan, training programmes are being developed for farmers and NGO staff to spread the concept to other geographical areas in addressing the issues of adaptation and mitigation strategies of climate change and its impact on agriculture.

Potential reach of PWDS is 30 districts in Tamil Nadu through 44 NGO partners in 3,347 villages with thousands of community based organizations (CBOs) promoted by PWDS and its programme partners. The potential reach is more than 500,000 families.

7.6. SCINDeA

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SACRED and BEST are members of SCINDeA, a network organisation which has 15 members. 2 Network members are intensively involved in agriculture and cumulatively practice SA on 2,200 acres. Their main crops include are paddy, ragi, groundnut, corn and other traditional food crops which are staple of the Tribals.

SCINDeA runs its Sustainable Agriculture programme through Participatory Technology Development (PTD) options. These practices include summer ploughing, seed selection and treatment, application of micro nutrients and green manures, bund planting, composting, inter/multiple cropping, preparing farm yard manure, use of *Azolla* under SRI, and planting of pest repellents.

7.7. Environment Defense Fund (EDF)

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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, we have linked science, economics and law to create innovative, equitable and cost-effective solutions to society's most urgent environmental problems.

EDF is dedicated to protecting the environmental rights of all people, including future generations. Among these rights are access to clean air and water, healthy and nourishing food, and flourishing ecosystems.

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. We 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.

For India, a decentralized nation of 1.2 billion people, action to control rapidly rising global warming pollution must begin at the local level. To add to the growing dialogue, and recognizing that India is a very young nation with over 50% of the population below 25 years of age, in 2008 we helped seed the Indian Youth Climate network. In 2009, this network grew to 300,000 members advocating climate action. We also teamed up with The Hunger Project to produce a popular film called "*Aarohan – A New Beginning*", dramatizing the link between global warming and rural poverty. The

film is now being rolled out to various villages in India and being screened for elected women Panchayat leaders and other interested parties.

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 a select few NGOs on an initial Pilot to help develop a local protocol for Low Carbon Farming that will create VERs to be sold in the carbon market. To define the protocols, establish baselines for current emissions, and work with Participant NGOs as they develop carbon contracts, EDF will hire and place a full time Expert on agro-ecology with the FCN Tech Team in Bangalore. This Expert will be able to draw upon the expertise of Dr. Zach Willey, who has helped develop large-scale LCF projects in the United States, China and recently Vietnam. Dr. Willey has already been to India and visited the farmer fields of the NGOs participating in the Pilot. During the short visit, we identified a number of opportunities that have the potential to support generation of VERs as the farmers look to shift to new practices promoting sustainable agriculture.

A well-designed project at scale for LCF will demonstrate the potential for leveraging carbon markets as a strong driver of adoption of new sustainable agriculture practices. This has the potential to be a game changer for India, a country where a majority of the population remains centred around agriculture.

8. STAKEHOLDER ANALYSIS

8.1. Stakeholder Table

Stakeholder	Interest in the Project	Impact on the Project
A: PRIMARY STAKEHOLDERS		
Included Farmers	Better crop and stable income	+
Pesticide and fertilizer dealers	Could affect sales and their income	-
NPM Shopkeepers	Increased business	+
B: SECONDARY STAKEHOLDERS		
Staff	Job Satisfaction, Capacity Building	+
Departments of Agriculture	Support/Advice	+
Validators/Auditors	Certification	+
Carbon Buyers	Pro poor, Feel good factor	+
Farmers' Organisations	Eco-friendly Agriculture	+
Banks	Govt. Loans/Schemes	+
Fair Climate Network (FCN)	Institutional Objectives, Small & Marginal Farmer constituency	+

C: EXTERNAL STAKEHOLDERS		
Donor Partner	Institutional Objectives, promoting eco-friendly practices	+
Technical Institutes	Learn new skills, share knowledge, earn credit for new methods	+
Consultant	Develop Facilitation Skills, Fees	+
Environmental Defense Fund (EDF)	Institutional Objectives, Expanding LCF Market	+
Carbon Investors	Institutional Objectives, Expanding LCF Market	+
External Farmers	Could cause unpleasantness	-
Political Leaders	Positive/Negative Personal Interests	+/-

8.2. Importance-Influence Matrix

INFLUENCE	<i>High</i>	9								
	8									Staff
	7			Dept of Agriculture						Included Farmers
	6			External Farmers		Technical Institutes	LCF Expert		FCN	Farmers' Organisations
	5								EDF	
	4		Political Leaders	Banks					Verifiers/Auditors	
	3					NPM Shopkeepers				
	2							Carbon Buyers	Carbon Investors	Donor Partners
<i>Low</i>	1									
		1	2	3	4	5	6	7	8	9
	<i>Low</i>	IMPORTANCE								<i>High</i>

9. SWOT ANALYSIS

9.1. Strengths, Weaknesses, Opportunities & Threats

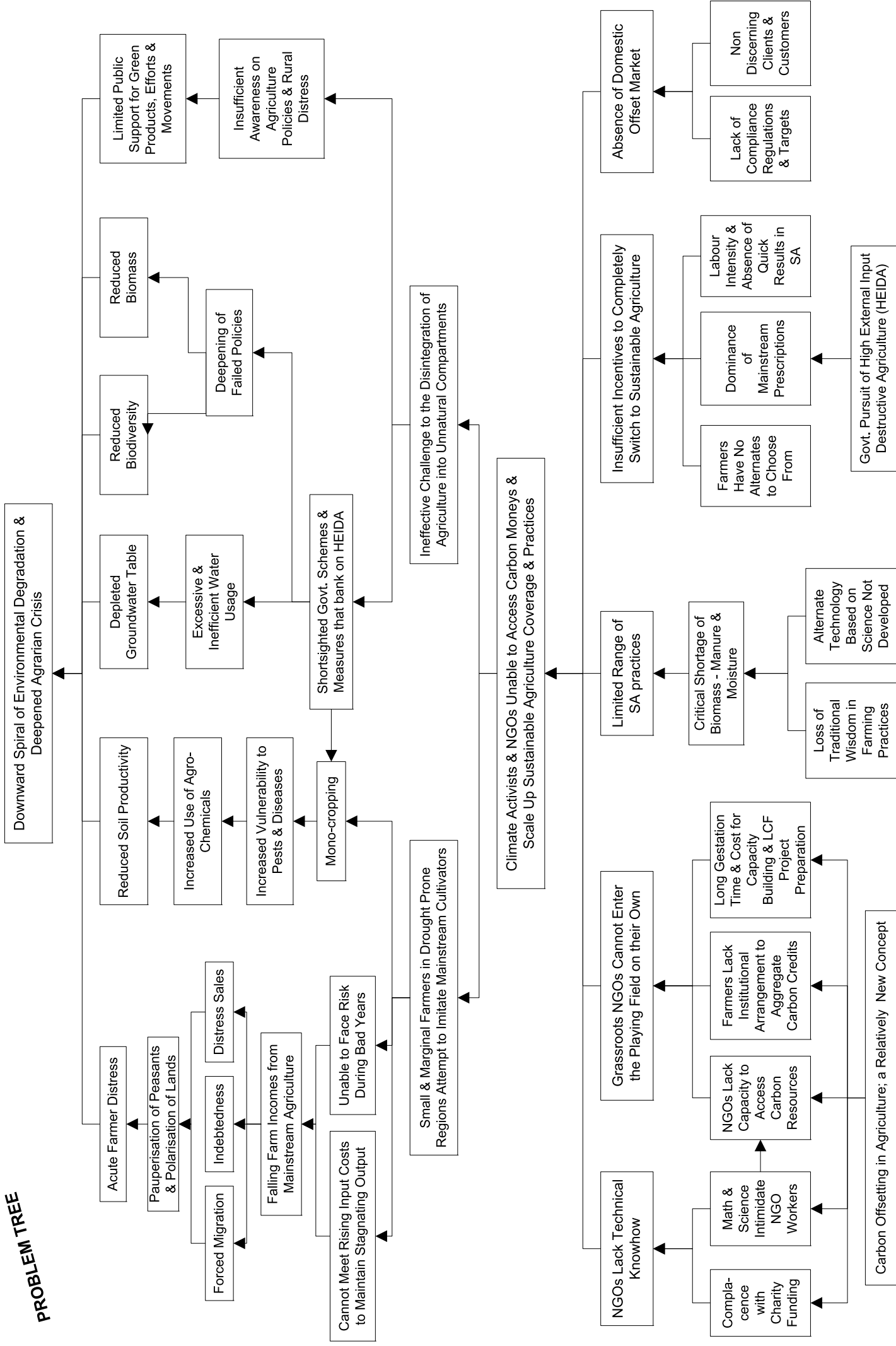
STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
1. Staff/NGOs have an understanding of and experience with SA practices	1. Field Staff lack adequate exposure and appropriate skills	1. Crisis in mainstream HEIDA farming practices increases receptivity for SA	1. Government's HEIDA schemes that aggressively promote mainstream agriculture
2. Some Participant NGOs have CDM experience	2. Communication gap between staff and management	2. Livelihood promotion through SA & carbon revenues – LCF	2. Difficult climatic conditions – lack of soil moisture and manure
3. Knowledge of water conservation	3. inadequate staff at central level	3. Environment promotion through SA & carbon revenues – LCF	3. Lethargy in some Farmers

4. Committed Staff	4. Inadequate documentation and reporting skills	4. Expanding voluntary carbon market	4. Sudden increase in wages and demand for labour
5. Credibility and good relations with communities, farmers, donors and government	5. Inexperience of newly formed farmer groups and farmers	5. Absence of competitors who can supply "good" emission reductions in the non-compliance market	5. Unpredictable agricultural market
6. Established Farmer Groups in the villages	6. Inadequate funding to scale up SA practices	6. increasing climate change consciousness	6. Acute Farmer distress leading to distress sales
7. Program size and outreach	7. Overdependence on a single market	7. Job satisfaction and imparting of useful skills to field staff	
8. Willing and able to collaborate with scientist and experts		8. NGOs becoming institutes of knowledge	
9. Internal monitoring systems		9. Sale of bio products	
10. Well defined coverage area		10. Immense possibility to scale up	
11. Shared Strategic Plan and synergy of a Coalition Programme			
12. Bargaining capacity			
13. High visibility			

9.2. SWOT (4 x 4 Matrix) – Strategic Priorities

		Internal Environment	
		STRENGTHS	WEAKNESSES
External Environment	OPPORTUNITIES	<p style="text-align: center;">INVEST</p> <ol style="list-style-type: none"> Highlight failures of High External Input Destructive Agriculture (HEIDA) and offer Sustainable Agriculture (SA) as a proven alternative Assemble Strategic Plan of experienced Coalition with Cutting Edge Science and scale potential to offer High Quality Emission Reductions to Discerning Carbon Buyers Enhance NGO Capacity to register VER Projects and prepare Offer Sheets Scale up SA Practices and Stabilise Farm Income in the face of Failing Mainstream Cultivation Create a Domestic Carbon Offset Market 	<p style="text-align: center;">DECIDE</p> <ol style="list-style-type: none"> Upgrade Staff Capacities to meet New Age Business requirements of CDM Management Increase Intimacy with Communities using SA Projects as a Tool of Organisation Culture Fast Track Participation of New Entrants (Farmers/Villages) to Deliver Synergistic Results and Scale Up Set Standards and Benchmark Best Practices for VER Generation in SA Projects Initiate and Support FCN Members to undertake Large SA Projects
	THREATS	<p style="text-align: center;">DEFEND</p> <ol style="list-style-type: none"> Increasingly access Carbon Resources to Finance Mitigation/Adaptation Activities Use LCF as a Cushion to Cope with Adverse Agro Climatic Events and Conditions 	<p style="text-align: center;">DAMAGE CONTROL/DIVEST</p> <ol style="list-style-type: none"> Develop Strategies to deal with the "Chicken and Egg" problem of Degraded Environment acting as impediment to Sustainable Agriculture and SA Practices being the only remedy to Restore the Degraded Environment

PROBLEM TREE



11. NARRATIVE EXPANSION OF THE PROBLEM TREE

This entire Section is deliberately written in the heroic mode. It provides a narrative expansion and goes on to predicate the problem.

We have chosen to do so because our Strategic Plan focuses on climate change Adaptation, rather than merely on measures to mitigate the problem or reduce emissions. It makes no apology for the application of intuitive insight and social sciences to the pure science of climate change.²

It is rooted in a deep understanding of the plight of small and marginal farmers, gained through decades of empathetic involvement with everyday lives. It traverses their journey from dreams and visions of a self contained and contented lifestyle to the despair and hopelessness that drives many to extreme measures like suicide. It blazes the trail for millions of others caught in similar dilemma to break shackles of despair and gain a proactive control of their economic future.

11.1. Focal Problem

The focal problem that this Coalition Programme aims to address is:

“Climate Activists & NGOs Unable to Access Carbon Moneys & Scale Up Sustainable Agriculture Coverage & Practices”

Carbon offsetting, especially in agriculture, is a relatively new concept worldwide. Many grassroots NGOs, including the 5 Participants of this 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.

Grassroots NGOs knew, from first hand contact with acute farmer distress, that they had neither the financial wherewithal nor risk taking capacity to enter mainstream agriculture practices that bank on high external inputs like agro chemicals and costly irrigation. More importantly, they intuitively questioned the environmental sanity of such practices.

However, the 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. Many small and marginal farmers continued to imitate mainstream cultivators and burnt their fingers.

There was 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.*³ While this commoditised agricultural production and facilitated entry into the market economy, cultivation ceased to be a sustainable livelihood pattern for the peasantry.

There was 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 an inter-dependency on the other. Strategies adopted for so-called increase in productivity were all based on a narrow, technical and sectoral detailing of each piece, with not just a non-understanding of the whole, but even a pretended expertise that showed blatant disdain to holistic appreciation. All this in the name of science, making a mockery of that body and discipline of knowledge, so vital for a

² Eminent scientists have begun to denounce the “science first” or “predict-then-act” model. They accept that climate change must be approached with the problem. They recognise that Adaptation helps meet the challenge of sustainable economic and social growth while dealing with climate change since it is embedded in financial, economic development and social planning.

³ This Coalition abundantly clarifies 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.

sensible human intervention with nature. Willy-nilly, they promoted a high external input destructive agriculture (HEIDA) paradigm.

A compartmentalised approach to agriculture, by definition, promotes mono-cropping. Even on rain fed fields, multiple cropping was discouraged.

Time tested practices like *Navadanya* (the planting of 9 varieties, alternating rows on every field) had evolved, over centuries, had a judicious mix of deep rooted and shallow rooted, tallers, 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 on the same day. 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 some pests and diseases. Crop residues enriched the soils with organic matter. Just as with the destruction of local crafts to create a proletariat class, practices that offered even a semblance of independence to the peasantry were deliberately targeted by HEIDA.

Mono crops are vulnerable to pests and diseases and demand an increased use of agro chemicals. Soil productivity visibly drops. Protagonists of HEIDA were quick to cover up a catastrophe in the making. They confused soil fertility with soil productivity and began to use the terms interchangeably.

- Soil fertility refers to the chief nutrients that crops (plants with an extremely short stand) need for their growth. These are 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.
- Soil productivity, on the other hand, 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. It is this holistic quality of soil productivity that supports sustained plant growth and survivability.

The nomenclature “soil” can quite conveniently be removed from “fertility” and even an inert media can be made to temporarily support short stand crops that have a limited lifespan of only a few months. But for a sustained (here meaning repeated) use of soil for cropping, year after year, it is soil productivity that is needed. More so in low rainfall, high evapo-transpiration and shallow soils. Small and marginal farmers are unable to meet rising input costs that do not have a proportionate rise in output. The ratio on increased investments is never in their favour. Moreover, they are not able to face the risk of crop failure during bad years when timely rains fail. Farm incomes drastically drop when cost of cultivation steeply increases.

Heavy indebtedness, distress sale of lands and forced migration quickly follow. A pauperisation of the peasantry, with the polarisation of their lands in the hands of a few who usurp them at distress prices, begins to occur, forcing the sellers to give up agriculture and become landless labourers. Small and marginal farmers are in the grip of acute distress due to the propagation of mainstream cultivation.

The vast majority of the rural population are an integral part of their ecosystems, with fates deeply intertwined in their immediate environment. When some among them get lured by mainstream paradigms, it is not due to conscious choice, but rather as victims of a wider market design. Some would call them greedy. We prefer to term them economic players.

The only *lasting* successes we witness in the villages do not stem from cultivation at all. They are stories of small peasant families who have got out of dire straits due to a son or daughter getting a city job and remitting home every month to enable parents maintain a peasant-like lifestyle, more out of habit, custom and a fond remembrance of quaint memories, than because it makes economic sense. Even these stories are few and far between. The vast majority cannot complete the schooling of their children, and youth from their families are unable to get much coveted jobs as security

guards, parking attendants, salespersons and garment factory workers. Their families are caught in a pathetic quandary and cannot maintain even a pretence of being contented farmers.

Pauperisation, polarisation and the abandonment of cultivation by small and marginal farmers is a study in itself. It is not an aberration with quick fix solutions. It is the consequence of a non-inclusive and eliminative growth path that HEIDA pursues. Abandonment occurs not just in a series of preventable steps that families tumble down. But as the result of a damning realisation that agriculture is no longer for them. It is a defeatist state of mind.

This is the reason why many NGO “agriculture extension programmes” of yore no longer work. Training on techniques, supply of certified seeds, timely credit, demonstration plots, marketing support, *et al* last only as long as the effort of the secondary stakeholder prevails.⁴

Short-sighted government schemes and measures also have dangerous environmental consequences. 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. This last acts as a catalyst to aggravate the problem even further, since it is a critical shortage of biomass and cattle that leads to a drop in soil productivity in the first place. It’s a chicken and egg issue that spirals the problem.

There isn’t any concerted effort, backed with good science, to support small 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.⁵

When such concerted efforts, at scale, are conspicuously absent, there is no informed intelligentsia who can use experiential learning to garner public support for green products, efforts and movements.

11.2. Negative Effect

The above described sets of causes and effects culminate in a downward spiral of environmental degradation and deepened agrarian crisis.

For very many years, the effects of the HEIDA paradigm, with a packaging of synthetic fertilizers, pesticides and irrigation, supercharged by genetically engineered seeds, has had a devastating impact on small and marginal farmers. Market driven agricultural policies have pushed food prices ever higher, without the producer getting a proportionate share in the increase. Ironically, the producers of food have joined an increasing rank of those who are dependent on state support for food rations.

Overuse of resources has led to a severe depletion of groundwater, reduced soil productivity, and a disappearance of biodiversity. The environment has taken a knock that hopscotch measures, piecemeal reforms and adjustments are not going to set right.

A radical shift in paradigm is urgently needed. The agrarian crisis deepens with each harvest cycle. There is an ever growing urgency to speed up the implementation of such an alternate paradigm at a scale and spatial coverage that will make a real difference.

⁴ Sustainable Agriculture is not a repacking of old wine in new bottles. It is conceived in the boundaries of a totally different paradigm. It’s starting point is an outright rejection of HEIDA. It attempts the introduction of Integrated Farming Systems with Self Sufficient Farmers & Sustainable Livelihoods – an integration of trees, crops and animals at the household level.

⁵ That 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!

11.3. Main Problems

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

1. *NGOs Lack Technical Knowhow*
2. *Grassroots NGOs Cannot Enter the Playing Field on their Own*
3. *Limited Range of SA practices*
4. *Insufficient Incentives to Completely Switch to Sustainable Agriculture*
5. *Absence of Domestic Offset Market*

11.3.1. NGOs Lack Technical Knowhow

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. Yet they were unable to grasp the science and math needed to come to grip with concepts of climate change, adaptation, mitigation, emission reduction and carbon trading.

In part, this was because a *Shudra* science, to simplify what is essentially an application of common sense, never developed. Climate activists and scientists were too busy debating hair-splitters amongst themselves. The need to involve populations negatively effected by climate change never entered their consciousness. Adaptation was not in their vocabulary and Mitigation translated into cerebral policy choices.

Also because of real fact that calculating emissions is meticulous work that needs to be backed with faultless science. Each sustainable agricultural practice has a different emission reduction potential. The impact of these practices differ greatly from place to place due to several factors. Variations need to be precisely documented and mathematically factored. Every discrete plot has to be mapped using GPS and GIS. All of this involves heavy math and science that perplexes the average development worker.

Alongside, a certain complacency has developed with charity funding. For long years, they adjusted their programmes, activities and styles of functioning to donor demands and suggestions. A self contained universe of sorts was created and everyone felt quite comfortable to operate within these boundaries. Not only was there no need to explore non-charity funding, but the idea of using commercial funds based on exchange of goods and services (in this case, CERs and VERs) was anathema to many NGOs. Simply because risks were too high, and deliverables too precisely defined.

Grassroots NGOs haven't developed a results oriented management culture, along with the rigour to measure and monitor. In this donor-recipient world a few success stories, presented as shining examples, passed off as achievements. Tall claims and aggregated figures were not supported with cumulated totals. As a result, basic organisational efficiencies stayed undeveloped. Staff skills were poor, computer usage primitive, and email discipline absent.

The tragedy is that even today, it is a real and perceived paucity of funds that is driving northern and southern NGOs to look at market resources and commercial moneys. Not a self realisation of deficiencies they cannot live with in this day and age.

Ideally, it should have been a strategic realignment based on the fact that organised communities can use their unity and discipline to effectively deal with the market. An unshakeable belief that values and principles they have inculcated epitomise the soundest of business ethics and practices – something that fly-by-night operators cannot offer.

11.3.2. Grassroots NGOs Cannot Enter the Playing Field on their Own

Lack of capacity to access carbon resources is taken as a given. But is this true? Or are NGOs and CBOs, like sundials in the shade, sitting on latent and unexplored potential?

CBOs we have built possess the organisational 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. This requires some education and external support. But when our communities have grasped the complexities of village level sociopolitical dynamics to alter power relations in their favour, how is this a challenge?

Since the emission reduction factor is so low in agriculture, hovering around 5 tCO_{2-e} per hectare per annum, 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. A super aggregation of sorts, across several grassroots NGOs, is needed if we have to play from a position of strength. This is the first of several compelling arguments for getting together in a Coalition Programme.

Low Carbon Farming, we have already stated, is not putting old wine into new bottles. It 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. The former, in itself, is difficult for many grassroots NGOs to bear. The latter is well nigh impossible to meet individually, in term of cost as well as resource availability. This is the second argument for forming a Coalition.

Reorienting long established NGOs with presence and proven staying capacity to develop a business acumen and deal with the market is not easy. It needs a total reengineering, shedding all established comfort zones and venturing into the unknown. Mutual support, learning, handholding and morale boosting to deal with self doubts and organisational panic are essential. Only a focused coalition, business like and professional, can buoy up this novel adventure.

Till the Fair Climate Network was set up to facilitate grassroots NGOs develop pro-poor CDM Projects and tapped carbon resources, cost and gestation were indeed serious issues. Modalities and procedures to develop emission reduction projects are complex, convoluted and exorbitantly costly. In the case of interpreting Sustainable Agriculture practices as Low Carbon Farming, these are accentuated. Partly due to the sheer novelty of the concept, and also because of year long cropping cycles that defy any speeding up.

The biggest challenge is a radical shift that is needed in NGO-CBO relationship. Most NGOs have shaped "their" CBOs along lines that meet their programme requirements – women's groups, health groups, farmer groups, *et al*. These have distinctive functions and are tailor-made for roles they play. At one level, it may appear that a similar village grouping can take on a role suited to LCF. When the role is broken into managerial subsets of activity processes, tasks and jobs, it gives the impression that yet another functional grouping is all that is needed.

This is so not true. Unlike the charity model, even run-of-the-mill business carried out with commercial moneys requires a far higher standard of verified deliverables. New age business, which is what the aggregation of carbon credits and selling them in an emerging market is all about, demands far more. 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. Dependence on farm level interventions is absolute, and has to stay uncompromised.

The business will succeed or fail depending on their effort and contribution. Participant NGOs who accompany them can steer these processes thus far and no farther.

11.3.3. Limited Range of SA practices

When a capitalisation of agriculture started occurring, traditional wisdom in farming systems was gradually given a go by. Rejuvenating it would have required a concerted effort on the part of an enlightened intelligentsia who accompanied small and marginal farmers. For reasons that we will elaborate in the remaining part of this Section, this did not happen.

It is vital to note that the loss was of an entire paradigm of knowledge and reasoning; an explanation of cause and effect; the *raison d'être* that supported a holistic system of farming. A wisdom that we now suspect has the tenacity to withstand the onslaught of climate vagaries and other externalities. When such a major lapse was allowed to happen, almost silently, it is no big surprise that alternate technology based on science was not developed.

Mainstream cultivation produced hardly any biomass since the land was regarded as a medium to exploit, rather than preserve and nurture; an input that factored in a narrow arithmetic that passed as economics. Such is the outcome when a people who are distant and removed from the ecosystem plan and implement models of development; a colonisation of alien terrains that they don't appreciate as being part of a whole.

The productivity of the soil, this supposed alien terrain, fell 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. There would be an effective interplay between all these elements with the natural principles of recycling, symbiosis, antibiosis and diversity.

The range of Sustainable Agriculture practices that grassroots NGOs could propagate decreased to just a handful that could still be advocated in close to sterile landscapes.

11.3.4. Insufficient Incentives to Completely Switch to Sustainable Agriculture

When the government aggressively pushes HEIDA, mainstream prescriptions come to dominate in every sphere. Be this in access to information, technologies, facilities, markets, as also a general acceptance of standard practice. Direct and indirect support and subsidies are provided to follow these prescriptions. They range from the provision of extension services for particular crops, fertilizer subsidies, fixing procurement prices for chosen cereals, insurance cover for certain cash crops, to selective R&D, media propaganda and compelling advertisements that pass off as knowledge dissemination.

Economic activities are driven by returns on investments, and herein lies the paradox. On the one hand are claims of profitability and high returns, backed by success stories of big landholders. On the other, constant losses, year after year, always attributed to supposed externalities like laziness, disinterest, failure of rains, *et al*. The law of diminishing returns is not mentioned, and the fact that the carrying capacity of the land has peaked due to over exploitation is glossed over.

When SA practices are successfully demonstrated to a handful of farmers on small portions of their holdings, it rings a bell. But... The mainstream paradigm portrays them as aberrations that were somehow pulled off; one time exceptions that happened to work...

Small and marginal farmers are not a monolithic lot, all moulded in the same caste-class characteristics. Among them are the lazy and the enterprising, the hapless and the lucky few. Some manage to get good results when they adopt SA practices. Others don't. More often than not, the latter become the beacon bearers of the effort. The very same externalities that are used to explain away pauperisation and acute farmer distress, are ignored when it comes to failed SA experiments. Such is the prerogative of the mainstream.

The net result is that farmers are confused into believing that they have no real alternatives to choose from. They are caught between a rock and very hard place, damned if they do and damned if they don't.

An open acknowledgment that Sustainable Agriculture practices are labour intensive and demand attention to detail, contrasts unfavourably with the deliberately falsified claims of mainstream agriculture where outcomes are projected as being predictable, uniform, and almost automatic.

All this translates into insufficient incentives to shift to Sustainable Agriculture and face inherent and natural, cyclical and weather uncertainties that any cultivation entails.

11.3.5. Absence of Domestic Offset Market

A weak social consciousness in a burgeoning middle class that is being created for the past decade and a half is only to be expected. The *nouveau rich* in any emerging economy behaves the same – with a greedy self interest to stay where they have clambered onto by a fortuitous combination of education, contacts, business acumen and, above all, good fortune. Therefore, the application of the same principles of environmental philanthropy that works in the West may not work.

A new generation of urban elite is developing in the managerial classes in India. One that is exposed to the rationale of international business acumen. They are quick to realise that it makes sound *business sense* to go green. Be it to create a politically acceptable facade, or driven by an environmental consciousness, or merely to satisfy global marketing requirements, it doesn't matter a fig to our strategic planning.

They have vague notions of footprints and offsets, but all knowledge stops there. They don't have a clue as to how to proceed further. They are intelligent enough to recognise that slogans at the level of switching off lights in unoccupied rooms and switching off the engine at traffic lights go so far and no further. They are hungry for emission reductions that are certified and, at the same time, have a good mitigation story behind them.

Carbon offsets buyers in India are not a compliance market. Being a non-Annex I country under the Kyoto Protocol, there are no emission reduction targets to be statutorily met. As a result, there are no institutional arrangements organised into a carbon market. Even a voluntary carbon market is absent and offsetting virtually lacking. Prices are arbitrary, transactions few and far between, standards absent, worth and value questionable at best. This could perhaps be said of voluntary carbon markets the world over. But in India everything is accentuated by a virtual nonexistence.

Discerning urban consumers in India do not buy green due to any environmental consciousness (for that, they run marathons and accumulate T-Shirts and memorabilia). They do so to avoid chemical pollution that cause visible and evident health hazards. "Organic" is a slogan that is yet to be fitted into a larger framework they comprehend. Alongside is a narrow nationalist pride that tries to project all things old as sensible and untouched by a supposed "western" materialism.

13. PROJECT PLANNING MATRIX

INTERVENTION LOGIC	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
DEVELOPMENT GOAL			
<ul style="list-style-type: none"> ❑ Sustainable Livelihoods of Small & Marginal Farmers, which are under Threat due to Mainstream Cultivation Practices of Emerging Market Economy and Frequent Droughts, Optimised with Stabilised Incomes from Agricultural Production through Low Carbon Farming ❑ ??? Environmental Balance Restored in Project Area through Eco Friendly Sustainable Agriculture 	<ul style="list-style-type: none"> • Annual Reduction in Distress Sales • Annual Reduction in Forced Migration • Annual Reduction in Fields Left Barren • Increased Crop Diversification • Increased Availability of Biomass • Enhanced Biodiversity • Reduced Usage of Agro Chemicals • Significant Increase in Groundwater Table in Project Area 	<ul style="list-style-type: none"> ⇒ Annual Effects Monitoring by Village Communities ⇒ Expert Studies 	<ul style="list-style-type: none"> • Only “Helplessness” will be Counted • Informed Decisions to keep Fields Fallow will <u>NOT</u> be Counted • Non Cultivation due to Failure of Timely Rains in a given Year will <u>NOT</u> be Counted • Being Goal Indicators, Extraneous Factors, Outside the Scope of this Project, should be Identified and Attributed
PROJECT PURPOSE			
<ul style="list-style-type: none"> ○ Leverage Domestic & International Carbon Markets to Support Scaled up Sustainable Agriculture Activities of Participant NGOs ○ ??? Grassroots NGOs Access Carbon Moneys & Scale Up Sustainable Agriculture Coverage & Practices 	<ul style="list-style-type: none"> • 50% of Small & Marginal Farmers in each NGO’s Area of Operation Adopt Sustainable Agriculture Practices by 2020 • Annual Increase in xx% of NGO Finances Mobilised from the Carbon Offsets Market • Annual Increase in Value of Farm Income from Sustainable Agriculture • Annual Increase in Proportionate Farm Income from Sustainable Agriculture vis-à-vis Mainstream Cultivation • Annual Increase in Proportionate Area under Sustainable Agriculture vis-à-vis Total Landholding 	<ul style="list-style-type: none"> ⇒ Hectares Financed Under Offer Sheets ⇒ Participating Farmers Under Offer Sheets ⇒ Audited Accounts ⇒ Data Generated by Monitoring Solution 	

PROJECT OUTPUTS			
A. FCN TECH TEAM STRENGTHENED TO DEAL WITH LOW CARBON FARMING	A.1. Improved Knowledge and Motivation for Practical Application	⇒ Performance Appraisal by Participant NGOs	
	A.2. Quality of Scientific Input Provided in Measuring Baselines & Estimating Emission Reductions	⇒ Performance Appraisal by EDF	
B. PILOT LCF COALITION PROGRAMME LAUNCHED BY 5 PARTICIPANT NGOS	B.1. 7,500 Hectares of Land to be taken up under the LCF Project Identified & Plotted by March 2011	⇒ 4,000 ha at Accion Fraterna ⇒ 1,500 ha at SEDS ⇒ 500 ha at Sacred ⇒ 500 ha at BEST ⇒ 1,000 ha at PWDS	• Participant NGOs Source Funds to Meet their Budget Shortfalls
	B.2. 5,500 Participating Farmers Aggregate Carbon Credits with their respective NGOs by March 2011	⇒ 5,500 Signed Carbon Contracts	
	B.3. 3 Years' Carbon Offsets Sold in Advance to Undertake SA Activities on 7,500 Hectares	⇒ 5 Offer Sheets Accepted by Carbon Buyers ⇒ Audited Accounts; Cumulative Bank Receipts	• Good "Stories" Enhance the Value of Carbon Offsets in the Non Compliance Market
C. LOW CARBON FARMING PROJECTS IMPLEMENTED BY 5 PARTICIPANT NGOS ON 7,500 HECTARES	C.1. Listed SA Practices Successfully Implemented on 7,500 Hectares by respective Participant NGOs by December 2013	⇒ Progress Reports Generated by the Monitoring Solutions ⇒ Verification Reports ⇒ Contractual Obligations in Offer Sheets Fulfilled	
	C.2. 50% of Target Group Landholdings Identified & Plotted by 5 Participant NGOs by December 2013	⇒ Area of Discrete Plots Delineated ⇒ No. of Title Deeds Recorded ⇒ No. of Carbon Contracts Executed	• Participant NGOs Find Resources to Continue Using their Newly Acquired Capacity
	C.3. Additional SA Practices Brought into the Basket of Interventions	⇒ Quality & Volume of Carbon Offsets in Future Offer Sheets	
D. DOMESTIC OFFSET MARKET CREATED > CORPORATE BODIES > MUNICIPALITIES & CITY CORPORATIONS	D.1. No. of Corporate Bodies/Municipalities Approached	⇒ Reports shared at FCN Meetings	• Participant NGOs Make Serious Investment in "Selling" the non-Carbon Aspects of their Projects
	D.2. No. & Volume of Commitments Obtained		
	D.3. Proportion of VERs Sold in the Domestic Market		
E. LOW CARBON FARMING PROGRAMME EXTENDED TO MORE FCN MEMBERS	E.1. Annual Addition of Participant NGOs after April 2011	⇒ Client List on FCN Website ⇒ NGOs Initiating Capacity Enhancement Exercises	

	E.2. Annual Increase in Area Brought Under Sustainable Agriculture Practices	⇒ Progress Reports Generated by the Monitoring Solutions	
	E.3. Annual Increase in Volume of Carbon Resources Accessed by Member NGOs	⇒ Audited Accounts; Cumulative Bank Receipts	

ACTIVITIES PROCESSES (April 2010 to March 2011)		PROJECT COST : DETAILS	TOTAL COST	SUNK COSTS	VOLUNTARY CONTRIBUTION	SHORTFALL
A. FCN Tech Team Strengthened to Deal with Low Carbon Farming						
A.1.	Salary & Operating Cost of 1 LCF Expert	EDF Contribution to the Coalition Programme	\$ 40,000			
A.2.	20% of Salary & Travel Costs of Senior Economist		\$ 50,000			
A.3.	Reserve/Contingencies		\$ 30,000			
B. Pilot Project Implemented to Enhance Capacity of 5 Participant NGOs Involved in Sustainable Agriculture						
B.1.	NGO Orientation	B.1.1. Assess Low Carbon Farming Potential				
		> SEDS	104,000	62,000	42,000	-
		> BEST	50,000	50,000	-	-
		> SACRED	50,000	50,000	-	-
		B.1.2. Set up a Low Carbon Farming Team				
		> Accion Fraterna	1,886,400	1,526,400	-	360,000
		> SEDS	767,000	334,500	192,500	240,000
		> BEST	559,500	307,500	-	252,000
		> SACRED	559,500	307,500	-	252,000
		> PWDS	382,500	120,000	22,500	240,000
		B.1.3. Train & Orient the Team				
		> Accion Fraterna	42,500	-	42,500	-
		> SEDS	74,000	65,000	9,000	-
		> BEST	100,000	25,000	-	75,000
		> SACRED	100,000	25,000	-	75,000
		> PWDS	15,000	7,500	7,500	-
B.2.	Selection of Project Participants	B.2.1. Create a General Awareness				
		> Accion Fraterna	408,600	-	353,600	55,000
		> SEDS	75,000	75,000	-	-
		> BEST	30,000	30,000	-	-
		> SACRED	30,000	30,000	-	-
		> PWDS	22,500	-	22,500	-
		B.2.2. Select Participating Farmers				
		B.2.3. Choose Villages for the Pilot				
		> Accion Fraterna	4,500	-	4,500	-
		> SEDS	4,500	4,500	-	-
B.3.	Collecting Demographic Data	B.3.1. Conduct Family Landholding Survey				
		> Accion Fraterna	60,600	-	60,600	-
		> BEST	57,500	57,500	-	-
		> SACRED	57,500	57,500	-	-
		> PWDS	126,000	-	-	126,000
		B.3.2. Obtain Customised Monitoring Solutions				

		> Accion Fraterna	850,000	-	-	850,000
		> SEDS	1,112,750	25,250	37,500	1,050,000
		> BEST	914,000	-	-	914,000
		> SACRED	914,000	-	-	914,000
		> PWDS	850,000	-	-	850,000
B.4. Taking Stock & Projecting Potential	B.4.1. List SA Practices					
		> SEDS	55,000	-	-	55,000
	B.4.2. Fix Tentative Targets for Pilot					
	B.4.3. Project Targets for the Long Haul					
	B.4.4. Share Tentative Figures with LCF Group of the FCN					
		> SEDS	5,000	5,000	-	-
		> BEST	5,000	5,000	-	-
		> SACRED	5,000	5,000	-	-
		> PWDS	30,000	-	-	30,000
B.5. Delineating Discrete Plots	B.5.1. Train in GPS Skills					
		> Accion Fraterna	94,000	34,000	-	60,000
		> SEDS	58,500	58,500	-	-
		> BEST	63,500	12,000	-	51,500
		> SACRED	63,500	12,000	-	51,500
		> PWDS	61,000	40,000	-	21,000
	B.5.2. Take GPS Readings					
		> Accion Fraterna	400,000	-	-	400,000
		> SEDS	463,000	63,000	400,000	-
		> BEST	369,000	5,000	364,000	-
		> SACRED	369,000	5,000	364,000	-
		> PWDS	380,000	-	200,000	180,000
	B.5.3. Download into Polygon Recorder					
		> SEDS	24,000	24,000	-	-
	B.5.4. Check & Correct Shapes					
		> Accion Fraterna	4,200	-	4,200	-
		> SEDS	45,000	45,000	-	-
		> BEST	25,000	25,000	-	-
		> SACRED	25,000	25,000	-	-
		> PWDS	56,000	-	-	56,000
	B.5.5. Obtain Title Deeds					
		> Accion Fraterna	24,000	24,000	-	-
		> SEDS	600,000	-	600,000	-
		> PWDS	200,000	-	200,000	-
B.6. Executing Carbon Contracts	B.6.1. Make End User Agreements					
		> Accion Fraterna	60,000	-	-	60,000
		> SEDS	60,000	-	-	60,000
		> BEST	39,000	-	-	39,000
		> SACRED	39,000	-	-	39,000
		> PWDS	100,000	-	-	100,000
B.7. Making Baseline Calculations						
B.8. Estimating Emission Reductions						
B.9. Preparing Offer Sheets						
B.10. Admin Costs	B.10. > BEST		20,000	-	-	20,000
	> SACRED		20,000	-	-	20,000
TOTAL			13,970,550	3,547,650	2,926,900	7,496,000
			€ 225,331	€ 57,220	€ 47,208	€ 120,903

C. 5 Low Carbon Farming Projects Implemented on 7,500 hectares by participant NGOs				
To be worked out in April 2011 by each Participant NGO, who will meet the actual cost of implementing SA Practices with an annual Carbon Revenue investment of approx Rs 1,700 to Rs 2,500 per hectare (i.e. 2 VERs per Acre p.a. @ US\$ 8)				
D. Lobbying & advocacy to Spark the Development of a Domestic Offset Market				
E. Low Carbon Farming programme Extended to more FCN Members				