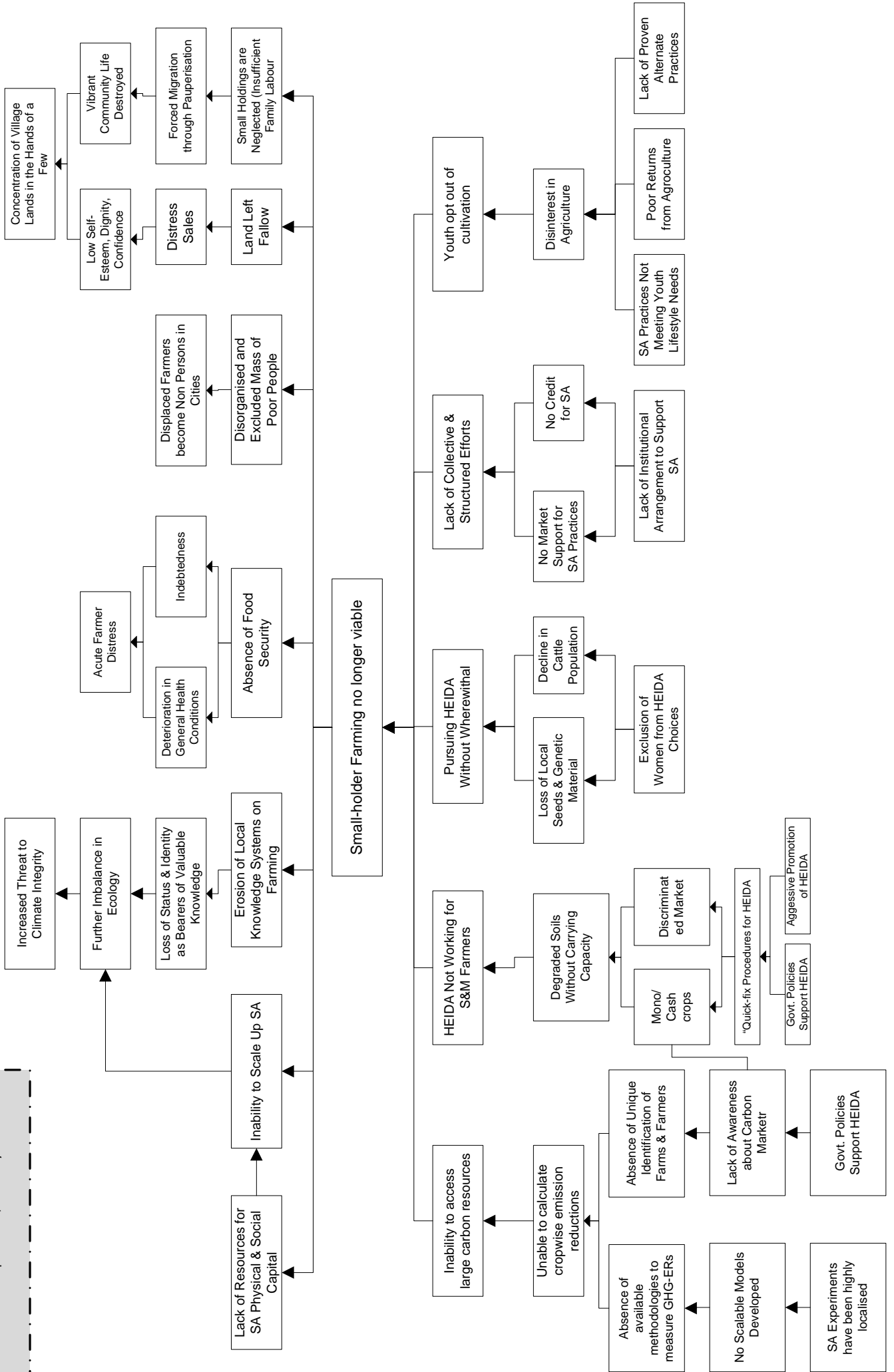


PROBLEM TREE

FCN-LCF Workshop : ADATS, 9-12 July 2011



10. NARRATIVE EXPANSION OF THE PROBLEM TREE

10.1. Focal Problem

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

“Small Holder Farming is no longer Viable”

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 High External Input Destructive Agriculture (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.³

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

³ Sustainable Agriculture is not a repackaging 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.

alternate paradigm can indeed increase productivity in a sustainable manner and, at the same time, enrich the environment.⁴ 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.

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.

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:

1. When people do not grow their own food, they starve
2. Mainstream agriculture makes a sardonic reversal of the population's diet intake:
 - The healthy and wholesome "poor man's food" of yesteryears, millets, pulses, grams and "marginalized" grains, are produced wholesale by large corporate farms and "value added" to make up the healthy diet of today's rich man.
 - The "rich man's food" of yesteryears, rice and wheat, which are nothing but sugar and body mass, is dumped through the public distribution system on a hapless population at heavily subsidized prices.

Little wonder at the 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 doesn't.

In either case, dependence on any market mechanism by a people who have zero risk taking capacity leads to indebtedness. Cumulatively, they lead to acute farmer distress, the most tolerable of them all a quick death due to hanging without even the basic human luxury of pondering on the plight this would leave the widow and children in...

10.2. Main Problems

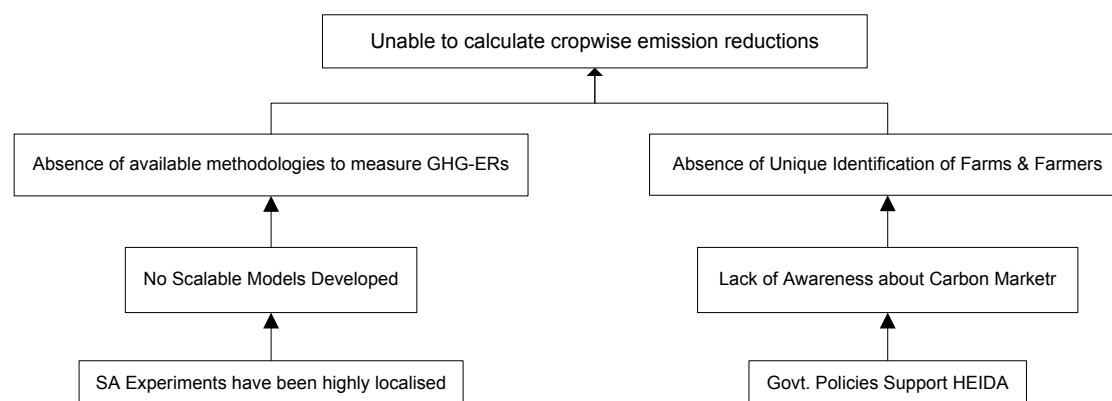
There are five causative factors that result in this situation. These Main Problems are:

1. Inability to Access large Carbon Resources
2. High External Input Destructive Agriculture not working for Small & Marginal Farmers
3. Pursuing HEIDA without Wherewithal
4. Lack of Collective & Structured Efforts
5. Youth Opt Out of Cultivation

⁴ 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!

10.2.1. Inability to Access Large Carbon Resources



SA Experiments have been Highly Localised

Many grassroots NGOs, including the 4 Participants of this 2nd 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.

Absence of Available Methodologies to Measure GHG Emission Reductions

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.

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, subtly steered by the industrial powers that be.

Government Policies Support HEIDA

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*. While this commoditised agricultural production and facilitated entry into the market economy, cultivation ceased to be a sustainable livelihood pattern for the peasantry. A compartmentalised approach to agriculture, by definition, promotes mono-cropping. Even on rain fed fields, multiple cropping is discouraged.⁵

The 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.

There are 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-

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dependency on the other. Strategies adopted for so-called increase in productivity are 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 sensible human intervention with nature. Willy-nilly, they promoted a High External Input Destructive Agriculture (HEIDA) paradigm.

Lack of Awareness about Carbon Market

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.

Absence of Unique Identification of Farms & Farmers

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. As a result of this, farmers were treated as groups of beneficiaries and data was most often approximated to rounded values. NGOs did not even have unique and irrefutable Identification of villages, farms and farmers they worked with.

Low Carbon Farming, 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 a sound argument for forming Coalitions.

Unable to Calculate Crop-wise Emission Reductions

The generalist manner in which NGOs tend to work was also a serious contributor. 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. Though they used SA practices in small scales, there were no attempts made towards scalability of such efforts.

It is a real fact that calculating emissions is meticulous work that needs to be backed with faultless science. Each SA 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. 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 organisations from accessing the carbon market.

Inability to Access Large Carbon Resources

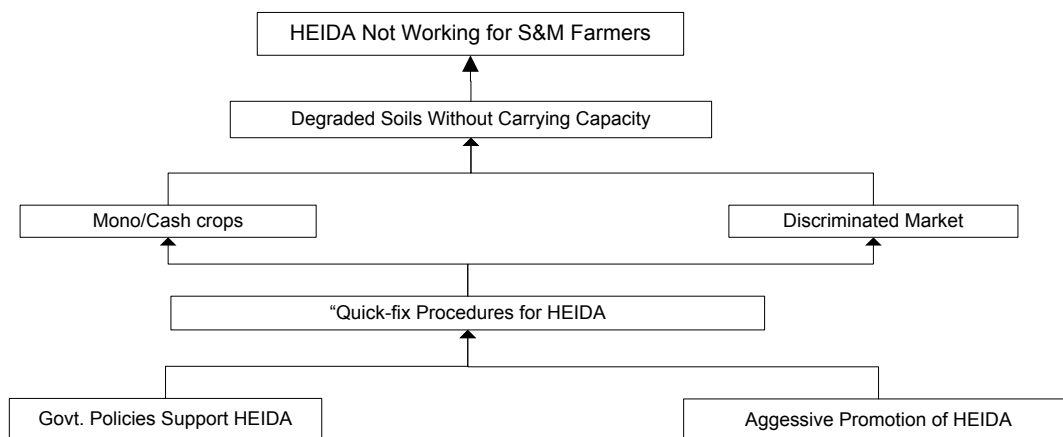
Lack of capacity to access carbon resources is taken as a given. But is this true? Or are NGOs and CBOs, like sundials in the shade, sitting on latent and unexplored potential? CBOs they have built possess the organisational structure, but not the institutional arrangement to pool the emission reductions 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 communities have grasped the complexities of village level socio-political 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 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. 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. 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.

The tragedy is that even today, there is a lack of real awareness about Carbon Markets; 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.

10.2.2. HEIDA not working for Small & Marginal Farmers



Aggressive Promotion of HEIDA

When the government aggressively pushes HEIDA, mainstream prescriptions come to dominate in every sphere. Be this in access to information, technologies, facilities, credit, 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.

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...

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.

"Quick-fix" Procedures for HEIDA

When a capitalisation of agriculture started occurring, traditional wisdom in farming systems is gradually given a go by. Rejuvenating it will required a concerted effort on the part of an enlightened intelligentsia who accompany small and marginal farmers. 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.

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.

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.

Mono crops & Cash Crops

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, 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 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. 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.

Degraded Soils without Carrying Capacity

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 evapotranspiration, shallow soil regions with a fragile ecosystem.

Mainstream cultivation produces hardly any biomass since the land is regarded as a medium to exploit, rather than preserve and nurture; an input that factors in a narrow arithmetic that passes 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.

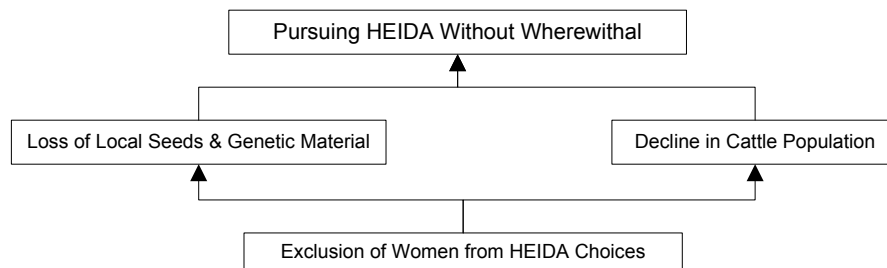
The productivity of the soil, this supposed alien terrain, falls to critical levels with an absence of humus, manures and moisture. In an integrated farming system, factors causing and sustaining soil productivity go beyond farm boundaries into common lands, pastures, forests, cattle, birds and scores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

HEIDA not working for Small & Marginal Farmers

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

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 that bank on high external inputs like agro chemicals and costly irrigation. More importantly, they intuitively questioned the environmental sanity of such practices.

10.2.3. Pursuing HEIDA without Wherewithal



Exclusion of Women from Cropping Choices

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. Even outside their families, women are not considered farmers and never given a say in crop choice and cropping practices.

But where organised 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. They do not abandon food crops for cash crops. A judicious mix of crops and *Navadanya* is their preferred choice. They keep native cattle alive. They refuse to invest beyond their means, even when temptation lures their men folk into credit they cannot clear. Mutual cooperation, with an exchange of family labour, is the natural practice.

Loss of Local 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. Farmers wanted best return on their inputs and were lured into using these seeds that brought along with it the accompanied need of chemical fertilizers and pesticides. The use of traditional manure/pest management like cow dung and urine, bio compost, neem cakes diminished from the scene as more and more chemicals options emerged in the market; not only that these chemicals were subsidised and made creditable through government policies.

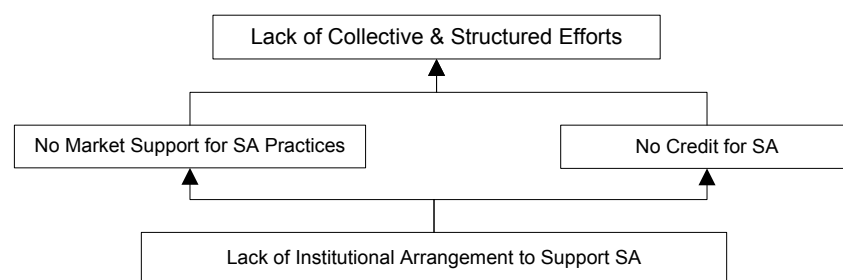
Finding high initial return on investments (due to subsidies and original soil fertility) farmers adopted HEIDA practice not realising the destruction it caused to humans and nature alike. Millets, local pulses, gram seeds disappeared and rice and other mono/cash crops like sunflower, groundnuts

started appearing in the scene. The practice of mixed cropping disappeared as these were never subsidised or provided credit for.

Decline in Cattle Population

These crops also brought about diminishing fodder as traditional crops were discontinued and animals were not used to bio waste produced by some of the new mono crops. On the other hand if the crop failed on small holdings, farmers had nothing to survive on since, unlike with mixed cropping when one crop fails there are others to fall back upon. Both factors contributed to the loss of cattle, either by death or distress sales for families to tide a moment with the paltry sums these sales fetched.

10.2.4. Lack of Collective & Structured Efforts



Lack of Institutional Arrangements to support SA

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 Organisation to instil a sense of Purpose, it needs to encompass every single facet of family life. It cannot be a watershed committee or beneficiary organisation or functional group designed to foster participation in predetermined plans and budgets.

This is the single biggest challenge that grassroots NGOs face. The will and ability to bring about a radical shift 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 won't do when it comes to Sustainable Agriculture. Because SA is not just about farming. It is not just the cultivation of crops. It is not only about making profits from land as capital. It is a holistic way of living. It is a healthy balance between crops, animals, trees and human beings. The Farmer Organisation that crucibles the promotion of SA has to be involved in every facet of the farmer families’ lives.

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 farmer families’ effort and contribution. Participant NGOs who accompany them can steer these processes thus far and no farther.

No Credit Available for SA

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

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 detail.

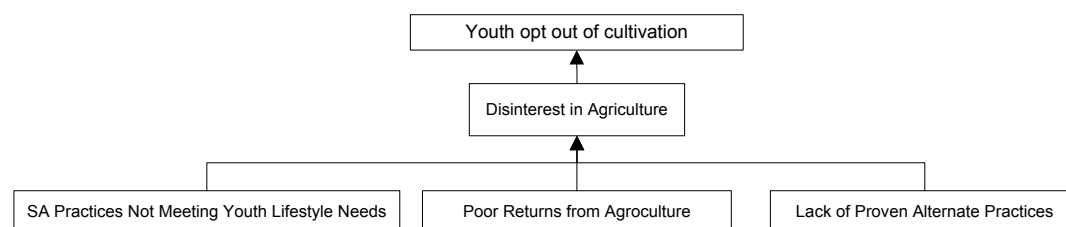
This is particularly true in large land based interventions and also in the delivery of rural credit. Quite apart from these being narrowly sectarian, *they promote the mainstream paradigm of development.*

No Market Support for SA Practices

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.

10.2.5. Youth Opt Out of Cultivation



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.

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. Acquiring higher education means moving away from agriculture amongst the youth today, this is because subsistence agriculture does not provide enough for a comfortable life as perceived by the youth. The issue of dignity further dampens the spirit of young women and men as farmer is considered to be in the lower rungs of the class ladder.

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.

OBECTIVES TREE

FCN-LCF Workshop : ADATS, 9-12 July 2011

