Imprints of Ecological Footprints ...

A compilation of
Ecologically Sensible
Good Practices

IFHD

WASSAN
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Aug 2016

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I am very happy to present "Imprints of Ecological Footprints .... A compilation of Ecologically Sensible Good Practices".

I take this opportunity to thank all organizations and individuals who contributed to the process of documenting these good practices. They were kind to frankly share with us their experiences, thoughts, challenges and achievements. They also shared relevant data to substantiate any critical point from their experiences. Some of them even prepared the first drafts of these case studies. They also revised them, based on our feedback. All the organizations/individuals happily gave consent for publishing these case studies and using them for learning purposes under "Leaders for Nature" program of IFHD, IUCN, CII, Hivos and Wild Life Trust of India. The entire process of producing this compilation was an enriching and fruitful experience. It is also a humbling experience for us to learn several lessons from these interactions and visits to several villages/sites. We genuinely believe that this compilation truly enriches the learning processes of "Leaders for Nature" program.

The Writeshop was one of the important events of this process. We got guidance and feedback on the '0' drafts from the participants of the writeshop. This was useful in refining the initial drafts. The participants of writeshop also made important suggestions on the presentation and utility of these case studies. From their busy schedules, they spared few days for refining these case studies, which is a very kind gesture. I thank everyone who participated in the writeshop. Their inputs are invaluable.

I thank Ms. Aruna Rangachar Pohl, IFHD for having faith in WASSAN and entrusting us the responsibility of compiling these case studies. She is an active team member at all critical stages of the project and guided us on choice of case studies, structure/framework, presentation, etc. The partnership with IFHD is really cherished by all of us, at WASSAN.
I also thank the family of artists of Cheriyal - Shri D Vaikuntam, Mrs D Vanaja, Mr D Vinay and D Rakesh, who visualized these experiences in their own unique style.

My team - MB Vali, Anitha Vustela, Waseem Mohammad, Benita Mahanta, Radhashree who spent considerable time on this agenda. I also thank K Suresh for providing editorial inputs and support at various stages of this process.

MV Rama Chandrudu

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Foreword

It is almost three decades back, the threats to "Our Common Future" were formally identified and deliberations started gaining more steam and support from governments too... (Our Common Future,Gro Harlem Brundtland, 1987). Climate Change and its implications were also slowly getting recognized during this period. The need for "producing more with less" was also part of this thinking process, as a means to address the challenges of the future. Over a period of time, the world witnessed more economic distress, unemployment, political turmoil and ecological disasters across different countries and regions of world. Those early predictions seemed to be less threatening than the current reality. The global gloom got predictable companions - unscrupulous industrial growth, irresponsible urbanization, careless global politics, dishonest governments, self-centric citizenship, which tried to glorify the current trends as achievements and inevitable solutions.

In the middle of such despair and misery, there is a hope. "Imprints of Ecological Footprints - A Compilation of Ecologically Sensible Good Practices" is a compendium of good practices that brings the efforts made by relentless civil society organizations, citizens and community based organizations, to change the direction of this trend. These experiences bring cheer and hope in the lives of thousands of rural, tribal and urban citizens in India, who are part of these experiences. They were able to take a different path that is less travelled and troublesome. There were several challenges, at each step and milestone. But they continued their journey and proved that "producing more with less" is possible. They also ensured that the ecological and environmentally sustainable processes are feasible for improving economic standards and quality of life of poor communities.

These case studies give a hope and confidence that we can face the cruel world and transform the same into a comfortable place for all - including endangered species, poor and marginalized communities. While Corporate Social Responsibility is gaining more support
from governments, corporate agencies and development agencies, these experiences provide guidance and help them to think about alternatives. These experiences help the willing and discerning development agencies and investors in social change, to transcend the mundane "photo stories" of majority of current CSR interventions. They provide an array of options, strategies and ideas that proved themselves in different parts of the country.

I thank all the organizations and agencies who shared their stories - highs and lows of it, with us frankly and completely. I thank them for providing leadership on the chosen theme - promoting biodiversity; conservation and governance of natural resources; promoting ecologically sensitive production processes; enhancing livelihoods by developing environmentally harmonious economic models and several others. These experiences are invaluable and are certainly useful for provoking thoughts in the minds of participants of "Leaders for Nature" programs, which are jointly organized by IFHD, IUCN, CII, Wild Life Trust of India, HIVOS and other like-minded organizations. I thank WASSAN for producing this compilation of case studies and supporting us in this endeavor.

Aruna Rangachar Pohl
IFHD, Bengaluru
Aug 2016
My well used to dry up by February/March and was in a dilapidated condition. But now it retains water throughout the year. With this two families (my brother's and mine) are able to cultivate almost 10 varieties of vegetables in 0.4 acre of land, which was otherwise kept fallow. This added something between Rs. 15000 to 20000 to our annual income and has provided food to our plates throughout the year. Even this year when the whole area has been affected by a severe drought we have been able to reap our harvest. To my understanding this is mainly because of the forest that we protected in the upper ridges and the soil and water conservation works that we have taken up through the watershed program. We have constructed contour stone bunds, stone gully plugs, water absorption trenches, check dams, farm bunds, etc. in the watershed project. This has resulted in increased water table in almost all the wells in the village. My well also got renovated in this program and provided me a means of living," - says Basant Sahoo from Bhagatpur village from Bargoth watershed situated
in Angul district of Odisha.

The pre monsoon and the post monsoon data collected from several wells from the village justify the testimony given by Basant Sahoo. There has been a visible increase of about 2 ft to 2.5 ft in the surface water table and most of the wells in the village now retain water throughout the year. Various measures taken up in the upper ridges helped in conserving rainwater at various points, which percolated into the ground and increased the sub surface water table to a great extent.

Another farmer from the village named Trilochan Pradhan also benefited from these interventions. He along with his brother now cultivates about 10 varieties of vegetables in 0.52 acre of land. "The water in our well was never enough. It used to dry up by January/ February. There was hardly any water during summer in the entire village. But now there is a visible change. We not only have water throughout the year, we are also cultivating vegetables in the area adjacent to the wells. While most of the vegetables are consumed at home, the surplus is sold in the neighbouring market." Ganapati Pradhan and Budhadev Pradhan also share similar views. While Ganapati Pradhan now cultivates about 0.52 acre of land, Budhadev Pradhan was able to take up second crop in about 1 acre of land. He also shares water with 3 neighbouring families.

Ratnakar Pradhan, the President of the Watershed Development Committee, whose well got renovated under the project, shares water from his well with 7 neighbouring families. All of them have been able to take up some vegetable crop to meet their household needs and even produce surplus for the market. "Though the well is my private property, the water in it cannot be claimed as my own. We have all worked together
in the upper ridges to conserve water and we are protecting our forest together. This has resulted in having more water in my well. We have decided to share water from our wells with our neighbours, wherever possible, so that all of us get benefited from this. Moreover, instead of digging new wells, we have renovated the existing ones to make them functional. This way we have invested less but gained more result. We have renovated as many as 14 wells in our village and dug only 1 new well. All the 85 households now have access to water from these wells. With this the area under vegetables and pluses has increased manifold in the last 4 to 5 years."

The impact of watershed program has created a sense of hope among the community members as most of them have been directly benefited either with the increase in water in their well or in increase in moisture in the land. They have not only conserved more water but have also been able to govern it in a way that all the households have been benefited from this resource. The facilitating agency, Foundation for Ecological Security (FES), is also challenging them to come up with more appropriate provisions for judicious use of their natural resources.

**Situation of masked poverty**...

Though eradication of poverty and hunger is the first of the 8 Millennium Development Goals adopted by the United Nations it has been a farfetched dream for the people living in the rainfed areas. In the context of climate change, rainfed agriculture has been the worst affected sector. These areas have been marked with growing poverty, malnutrition, water scarcity, severe land degradation, poor productivity and low physical and social infrastructure. As agriculture is still the main source of livelihood in these areas, every day is a struggle for survival. With very minimum (read
almost negligible in most of the cases) infrastructural support available for land and water and poor outreach, agriculture has become the last option for several communities. Erratic monsoon coupled with long dry spells have made agriculture the most uncertain option. Thus several communities in the rainfed zones are seeking opportunities in other sectors and migrating in search of work as agriculture has not been able to support the farming communities. With water becoming a precious resource in these areas, conflicts over water have been on the raise and there is a severe challenge to its status of being a common resource.

The state of Odisha presents no different picture. The India Human Development Report, (NCAER 1999), states that Odisha is one of the poorest states with a per capita income of Rs. 3028/-. 55% of the total population lives below poverty line. The per capita availability of cultivable land has declined from 0.39 ha in 1950-51 to 0.21 hectares in 1995-96. The average land holding is 1.23 hectare in Angul district which is situated in central Odisha region and about 97% of the land holdings come under the category of marginal and small farmers. The area is mostly rainfed and prone to frequent droughts. The topography is undulating and interspersed with small streams and rivulets flowing into the two major river systems - Brahmani and Mahanadi. Deforestation in the uplands has resulted in the breakdown of the nutrient and water cycles and increased soil erosion affecting agriculture adversely. Only one crop is possible during the year with abysmally low productivity and vulnerable to drought situations. While the district produces maximum revenue for the state from mining and industrial activities, the degradation of the forests and reducing productivity of agriculture has made the livelihood condition of an average farmer all the more vulnerable. The per capita income of the district is highest in
the state which presents the peculiar example of masked poverty with more than 60% population living below poverty line.

**Watershed with an ecological conservation approach...**

There are intricate relationships that influence the livelihoods, agriculture and natural surroundings. Thus, it is desirable that the interrelationships are strengthened in a holistic manner. In a scenario where the contribution of agriculture to the household economy is irreplaceable, it is imperative that agricultural production is addressed by the restoration of natural resources. The stability of agriculture production and increased livelihood options would contribute positively to the rural economy.

Given the nature of the problem outlined above, it was essential to enhance the carrying capacities of rainfed areas. The community was to be involved in making more water available and prepare a better land use plan. More efforts needed to be converged with an agenda to compliment and supplement each other to enhance opportunities in agriculture. It called for united action of various actors interested in developing basic rural infrastructure i.e. forest, water and land.

In a unique effort three partners namely NABARD (National Bank for Agriculture and Rural Development), JTT (Jamsedji Tata Trust) and FES (Foundation for Ecological Security) joined hands to develop 8 micro watershed projects in Angul district of Odisha in 2009-10. These 8 micro watersheds covered 7238 hectares of land with 30 habitations. The project was for a period of 7 years.

The watershed approach provides the ideal basis for integrated development. It involves the exploration and development of the complex
Interrelationships between the natural resources and the population of the region and opens new vistas in livelihood scenario. In this approach, development is not confined just to agriculture land, but covers all components of the ecosystem landscape. In the rainfed systems, where agriculture is dependent on residual moisture, forests help in rejuvenating water sources and conserve moisture for longer periods. Particularly, efforts are needed to gear up for the governance of forest, land and water resources and plan for the effective utilisation of human and animal resources with the objective of strengthening the household economy.

This project intended to support appropriate conservation measures in the uplands to reduce the loss of soil and moisture; create new and rejuvenate traditional water harvesting structures to enhance the availability of water round the year; bring in all categories of land under production regime to enhance assured income to households; search alternative means of livelihood to support poorest of poor families and strengthen institutional mechanisms at different layers to ensure better governance of the resources created.

**Strengthening local governance...**

Each village has to take the initiative to create a formal body regarding

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Role of partners:

- FES - facilitated the process of successful implementation of the project at the habitation level
- NABARD - provided financial support to take up activities for ecological restoration
- JTT - provided support for capacity building, livelihood improvement and administrative costs
governance of natural resources, with appropriate rules and regulations. This process is a critical step towards self-governance. This institutional mechanism should aim to include all the users in the management and governance of the resources. Creation of resources in a watershed project brings forth gamut of issues in sharing the resources. As the resources are intricately linked to one another; one un-mindful act could lead to several irreparable consequences. To avoid this and evolve unified action strengthening of institutional mechanisms at the habitation, watershed and regional levels is a must. Traditionally almost all villages in Odisha have an informal system of governance mechanism. FES facilitated the process of formalising these mechanisms with clear procedures for governance, financial transactions, decision making process, etc.

FES initiated the process of uniting people and strengthening the institutional mechanism by preparing village specific bye-laws by drawing from the existing rules and regulations. For example many villages had rules regarding forest protection mechanism. FES facilitated the process of strengthening it further by developing rules for other resources like water and agriculture. After this facilitation, 25 villages out of 30 developed rules to regulate open grazing practice. Earlier open grazing would start after the harvest of the kharif crop but now most of the villages have formed rules to control this till end of Rabi season. All the villages now have well defined system for financial transactions through banks. Most decisions are taken in the village general body. This general body is executive body, with proportionate representation from different strata to execute the decisions taken. Rules and regulations have been developed in most of the villages to share water resources (both from common and privately owned structures) among community members.
Around common water resource while in many villages they have defined rules for taking water with the permission of the village general body, water from private resources are shared among neighbours without giving any exclusive right to the owner.

**Water is a common resource...**

For restoring the landscape the principle of ridge to valley intervention has been followed. Starting from the commons the treatment progressed downstream to the agricultural lands. Various bio-physical interventions including contour bunds, staggered trenches, stone bunds, stone gully plugs, water absorption trenches, brush wood check dams, earthen check dams. were undertaken. These structures regulated the runoff velocity in the upper ridges and checked further erosion of drains. Water harvesting structures like ponds, farm ponds and water recharging structures like percolation tanks, water absorption trenches. were constructed in appropriate locations. These enhanced the water storage capacity and provided security to agriculture. Efforts were made to reduce risk and improve agricultural productivity of rainfed and dryland agriculture by technical interventions such as raising farm-bunds to check fertile top soil loss and provide *in-situ* moisture conservation. All such efforts resulted in conserving more water. Consequently, renovation of wells, construction of new collective wells. have been taken up for providing protective irrigation in case of delayed monsoon and in assisting Rabi cultivation.

**Water for Livelihoods**

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**FES has supported construction and renovation of 220 open wells in all the 30 villages covered under the project for which NABARD and JTT had made a provision of INR 72.07 lakh.**
Construction of a variety of bio-physical structures in the upper ridge areas has resulted in increased water level in almost 80% of the farm wells of the area. One major significant change that has been observed is the availability of water throughout winter extending up to initial summer which was not the case prior to the watershed program. This increased water availability has encouraged the farmers to take up vegetable farming in both Kharif and Rabi season and in some cases even in summer. Most of these are privately owned wells but rules were developed in each village where the owners have given consent to share water with their neighbours. It has been agreed that the increased water available in wells has been a result of community initiatives taken in the upper ridges and that everyone should have equal access to augmented water.

The felt impact of the watershed program is clearly visible with more area brought under production regime. Area under vegetable and pulses crop has increased by 20%-25% so far. The main crop of paddy has been assured in most of these villages even in a poor monsoon year. The community members are now engaged in creating more and more opportunities in their villages. In this united initiative between NABARD, JTT and FES, the efforts did not end with developing the resource base. There has been constant negotiation with the communities to develop mechanisms to bring about a change in the physical, political, social and economic situation of a deprived region. The effort is still on-going.

Ms Swapna Sarangi, Foundation for Ecological Security
About Cheriyal Paintings

Shri D Vaikuntam and his family members Mrs. D Vanaja (wife); D Vinay and D Rakesh (sons) are keeping the tradition of Cheriyal Paintings of Telangana state, for generations. All members of the family are engaged in protecting and conserving this rare art form, that is not likely to survive for long. This is the only family in the country that is still engaged in this traditional art form. The Cheriyal Art has a unique character - red color background; vivid presentation of figures (men, women, animals, flowers, plants and others) with unique strokes and style. This art form belongs to "nakashi" form of paintings in India. But Cheriyal paintings contextualized this nakashi format to local Telangana and improvised it, with their unique styles. Apart from paintings and scrolls, Cheriyal Masks are also very attractive and unique with their bright colors and large eyes. D Vaikuntam received several awards from Central/ State governments, for his unique contribution to Cheriyal Art.

D Vaikuntam and his family members agreed to present the key messages of these case studies. They spent time with us to understand the essence of each case study and presented it in their own style. These pictures further enriched the experiences, which are already exemplary in several ways. WASSAN thanks the family of artists of Cheriyal for their support in visualising these case studies.

Pictures of some of the paintings/ scrolls and masks could be seen on this blog:

http://vaikuntamnakash.blogspot.in/
".....In the middle of such despair and misery, there is a hope. "Imprints of Ecological Footprints - A Compilation of Ecologically Sensible Good Practices" is a compendium of good practices that brings the efforts made by relentless civil society organizations, citizens and community based organizations, to change the direction of the trend. These experiences brought cheer and hope in the lives of thousands of rural, tribal and urban citizens in India, who are part of these experiences. They took a different path that is less travelled and troublesome. There were several challenges, at each step and milestone. But they continued their journey and proved that "producing more with less" is possible. They also ensured that the ecological and environmentally sustainable processes are feasible for improving economic standards and quality of life of poor communities...
"Aruna Rangachar Pohl, IFHD, Bangaluru.

"......these experiences are invaluable and are certainly useful for provoking thoughts in the minds of participants of "Leaders for Nature" programs, which is organized by IFHD, IUCN, CII, Wild Life Trust of India, HIVOS and other like-minded organizations. The entire process of producing this compilation was an enriching and fruitful experience. It is a humbling experience for us to learn lessons from the interactions and visits to their villages/sites. We genuinely believe that this compilation truly enriches the learning processes of "Leaders for Nature" program" - MV Rama Chandrudu, WASSAN