akshara

the newsletter of sankalp - a resolve for a progressive india

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editorial

We are delighted to bring you the fourth edition of our newsletter. It has been ten long years since we resolved to strive towards a progressive India. Now, we look back to see the path we have tread. It has been long and strenuous, but it has been education all along.

We have seen our guiding philosophies evolve and mature with time. We have construed innovative methods to raise funds. We have come up with new and novel ideas to create awareness among the local community. We have brought to fruition the efforts of our dedicated volunteers and our visionary founders. This July, we will celebrate the 10th anniversary of Sankalp's inception with a two day convention which will unite alumni, faculty and Sankalp volunteers in assessing its past and chalking out its future.

We envisage an economically and socially developed India in the near future. To this end, we believe that there are two basic pillars of development - economic growth and human development. Economic growth signifies the ability of a society to produce goods and services which brings about a rise in standards of living of its individuals. Human development signifies the ability of an individual to reach their full potential as healthy and educated citizens. Human development requires commitment from government and non-governmental agencies in terms of increased spending on high priority areas like health and education. However, efforts towards human development equips the society with an educated, healthy and productive work force that can naturally foster economic growth. So, the focus on human development is of paramount importance and it is towards this aspect of development that Sankalp has maintained its unwavering commitment.

In this fourth issue of Akshara, Kanaga Karuppiah, our current president catalogs various activities of Sankalp in the past year. In a separate article, Aditya, our former project coordinator describes one of the developmental projects that we have supported in the last two years. Next, Dr. Pallavi Raina, a senior sustainability consultant to the U.S. government, and a close associate of Sankalp, shares some of her ideas on sustainable thinking. We have Neeraj, an alumni of Iowa State University, present the mission and vision of DridSankalp, an organization founded by ex-Sankalpites - to provide a means of continuing to work for sustainable development in India.

Rahul reviews E. F. Schumacher's economics classic, "Small is beautiful: Economics as if people mattered". Rahul explains how the book, debunking conventional economic theories, offers a holistic approach containing ethical, ecological, and metaphysical components that led to a humanistic economic movement. Murali's article expands one of the notions from Rahul's article - that of treating agriculture differently from industry. Natural or holistic farming, as practiced by Masanobu Fukuoka and Joel Salatin, have been described, and the astonishing benefits derived from this form of agriculture dealt with.

We thank you for all the support and encouragement we have been given and we hope to continue enjoying the same in the years to come.

- editorial board

contents

akshara is the newsletter published by **sankalp** at Iowa State University, Ames, Iowa. The views and opinions expressed in the articles are the author's own and do not represent the opinion of the editorial board of *akshara* or of *sankalp*. Contributions in the form of articles, news, views or donations to *sankalp* are welcome. For more details on *sankalp*, please contact us at sankalp@iastate.edu

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looking back: looking ahead

annual report

The past year has been an absolute pleasure for me and is the finest year during my graduate life that I can ever remember. This, despite the fact that I had to defend my Masters thesis and somehow fool my committee into awarding me a degree. It is in the spirit of such a great year, I present the highlights of our ventures, our foray into new fund raising and fun raising events, and our efforts to educate our group and to inform, inspire and involve the community at large in all our activities.

For the first time, last summer, we went down to the "grass roots", by getting involved with lawn mowing and landscaping activities for some of our faculty members at ISU. Pruning trees, planting seedlings, and tending plants are definitely enjoyable activities in the warm summer evenings. With support from 8 faculty members, and about 40 student volunteers, our gardening activity was a great success.

Fall semester saw the return of the cyclone football. On September 6 2004, on a glorious sunny morning, when Cyclones handed the Huskers humiliation on a silver platter, it became evident that ISU would no more continue to hold the underdog status Cyclone fans have gotten used to over the years. With the crowds pouring in by the thousands to watch the home team shine, Sankalp stepped in and offered as many as 28 volunteers for ticketing, crowd control and security. At the end of the season, we raised about $5000 which has been the highest fund-raiser till date from any single event.

The month of September happened to be one which proved the culinary skills of Sankalpites. "Aspects of India," organized by ISU assistant professor Cindy Gould, featured historic and contemporary textiles, mixed-media artworks, photography and sculptural forms made by both Indians and Americans inspired by India. We catered evening snacks to the 75 people attending this Octagon symposium held in Ames. We had a chance to introduce our organization formally to a bigger audience for the first time. Some of our members also participated in the Mehendi workshop.

The months of October and November saw Sankalp participating in the regulars - FACES festival and the Younkers community day events, respectively. The FACES festival showcases the variety of cultures that have contributed to the growth and strength of the local community. It is an ideal time for Sankalp to display Indian arts and crafts and to introduce and educate the community about our unique cultural heritage. Younkers community day is a special event when Sankalp gets to sell coupons required for merchandise purchases in the Younkers store. Apart from the funds raised by selling the tickets, Sankalp also gets to share the funds raised through in-store coupon packet sales. For Christmas and Mother's day, Sankalp participated in another new fund raising event – gift wrapping. Sankalp volunteers helped in gift-wrapping at the local Borders bookstore and tips provided by the customers were channelized for supporting our developmental projects.

In an attempt to involve the ISU faculty, we introduced a new monthly payroll deduction scheme. Our basic idea is that if 50 faculty members at ISU donate $10 per month, Sankalp can generate a sustainable income of $6000 which will assure funding for two projects per year. At the moment, there are fewer faculty members than students enrolled for the scheme, but we hope to get more faculty involved in the future!

IDCA is an annual conference that is held in Chicago to promote collaboration and cooperation among working organizations engaged in developmental activities. Four members from Sankalp attended this conference to network with grass roots level organizations working in India. During the conference, we meet Dr. Pallavi Raina, a sustainability consultant to the US government, who is also involved with environment conscious human developmental activities in Karnataka through an NGO by name CHOTU. With her initiation, Sankalp got associated with a new ongoing project, which is about translation of some high school educational material that are in English into multiple regional languages in India. The translation is expected to be used by CHOTU and made available to some of the Indian schools and other NGOs as well. We also started up a small library here with the books generously donated by Dr. Pallavi Raina. We have a collection of around 20 books with a primary focus on sustainability and development.

In the month of December 2004, the tsunami struck countries in South Asia and proved to be a tragedy of global and colossal proportions. It caused irreparable damage to many families and communities in the coastal areas of many countries including India. Funds and aid started pouring in from all parts of the world with the major focus to address the immediate needs of the victims. However, we realized that the greatest

looking back: looking ahead

obstacle ahead for these affected areas lies in the demands of reconstruction, both human and economic. The most crucial phase in rehabilitation efforts would be to give back the affected people their livelihood which would require assistance to be provided in the long run.

With support from ISA, ICA, Maharashtra Mandal, and from faculty, student and staff of ISU, we were able to raise $8000. We wired the money to SEEDS, a voluntary organization registered in India. SEEDS along with its partner organizations are helping out with the rehabilitation of 200 affected families in Hut bay and Campbell Area in Little Andaman and Nicobar Islands. This will include house reconstruction, livelihood restoration, and providing water, sanitation, education and health. We also worked with a student organization at ISU called SIMAC to raise funds for immediate relief through the Red Cross. We sincerely hope that our efforts will help alleviate the distress caused to the victims of the disaster.

With our increasing visibility among the local community, we were invited by the Madrid temple authorities to regulate parking for the consecration ceremony of the Hindu temple and we were able to raise $1100 from this event. Every summer, Sankalp embarks on a new fund raising activity, and this summer it was assisting with the temple activities.

Collective learning initiative (CLI), a brainchild of our faculty mentor Dr. Balmurli Natarajan was officially kick started on October 8th 2004 by his introductory talk on "What is development?". As a part of CLI, we decided to conduct invited lectures and seminars on a regular basis and hold discussions and debates as a follow-up on the invited talks. We video tape the lectures and have the presentation materials and videos available on our webpage for public view.

Next, Dr. Ricardo Salvador, an associate professor in the department of agronomy and the director of sustainable agriculture program at ISU gave a talk on "Ecological footprint analysis and development". The third IL on "Sustainable livelihoods – Principles, Processes & Programs" was presented by Dr. Robert Mazur, who is the director of Iowa State's Sustainable Rural Livelihoods (SRL) Program. The most recent of the talks was by Ms. Chandra Anil, who is a full-time social worker associated with AID-India. She presented on "Grass-root level perspectives of social development activities" which focused on issues and challenges faced by a social worker at the grass-root level. As a part of the global tsunami relief efforts, Ms. Anil was involved with the coordination and logistics management of volunteer visits to the affected areas.

To emphasize the basic tenets of the organization and to streamline its functioning, the constitution of Sankalp was drafted, ratified by its members, and came into effect on January 26, 2005. I would like to applaud the commendable efforts put in by the writers of the constitution for hashing out various critical issues and laying a foundation and framework for the evolution of the organization.

In addition to these fund raising and awareness activities, Sankalp continued to obtain project proposals from India and fund the deserving NGOs. Antodaya, an NGO based out of Kalahandi in Orissa was funded to the tune of $4000 and Little Star School, a school for destitute children in Varanasi, Uttar Pradesh was funded to the tune of $5,500 in two installments. The details of the Antodaya project are discussed in a separate article by Aditya Velivelli. Little Star School in the Assi neighbourhood of Varanasi was founded by Ms. Asha Pandey to provide free education to those children who due to extreme poverty do not have the opportunity for conventional education. Since this school caters to the economically disadvantaged children, they provide a mid-day meal to the students and this component was funded by Sankalp for two years from 2003 to 2005.

annual report

Currently, we are gearing up for the alumni reunion event scheduled on the July 4th weekend to commemorate the 10th anniversary of Sankalp. Through the conference, we intend to celebrate our first 10 years of accomplishments, take stock of our current situation and plan ahead for the future. We hope, through discussions with ISU faculty, alumni, current members and other patrons from Ames, to reinvigorate Sankalp and take concrete measures to involve the local community to a greater extent and leverage their strengths. We invite you to be a part of this event.

Finally, we would like to thank Dr. Balmurli Natarajan for being a stellar faculty advisor to Sankalp for three years, for taking a keen interest in our activities, expanding our outlook, and involving us in the ISU community to a larger extent. Sankalp has evolved tremendously under his guidance. We wish Dr. Balmurli and Vidya the very best as they leave Ames for greener pastures.

association: action: achievement

In late February 2003, Sankalp members met to review our project selection process. Until this meeting, Sankalp's philosophy gave preference to projects that had a literacy component. During the course of our discussion, we felt that literacy may not be the panacea for all the socio-economic problems prevalent in our country. Hence, we decided that any deserving project with a broad based focus on livelihood generation in the needy and backward rural regions of India should be considered for support. The projects were also expected to be sustainable, i.e., in the long run they would continue without requiring external support.

Around this time, there were articles in the Indian press and the international press about starvation deaths in the Kalahandi region of the state of Orissa. Starvation deaths in India reflect very poorly on a culture that prides itself on charity to the needy. This was indeed a situation that required the attention of NGOs like Sankalp. I began a search to identify NGOs working in the Kalahandi region and very soon came across Antodaya, a rural development organization working in Kalahandi since 1989. After establishing contact, Antodaya Chairman Shri Dillip Kumar Das sent me a project proposal. The proposal was titled "Livelihood support to marginal farmers and the land-less".

projects

The project areas were located near Badaldei village in the gram panchayat of Nandol and the villages of Michasola and Chermahul. The major occupation in this region was agriculture and related wage labor. There was no permanent source of irrigation in this area and 58% of total households lived below the government stipulated poverty line.

The objectives of the project were to:

1) Renovate existing sources of safe drinking water by installing iron removal plants with water pumps (in Michasola and Chermahul). These were required since water in these areas had high amounts of iron thereby making it unfit for drinking. 2) Renovate one large water harvesting structure (11.04 acres) near Badaldei village for conserving water for irrigation purposes. This would create much needed employment for the daily wage laborers.

This project was expected to result in:

1) Ensuring food security and reducing the food stress period from four months to two months in a year, and improving the physical health of locals. 2) Reducing seasonal migration caused due to recurring crop failure by improving agricultural productivity through renovation of water harvesting structures.

Around September 2003, the Kalahandi area was hit by flash floods washing away the standing crops and thus rendering the region even more vulnerable to economic hardships. Alternative means for livelihood generation were urgently required and Sankalp's involvement in the project was more crucial. Two weeks after the flash floods, Sankalp met and unanimously voted to support the Antodaya proposal to the tune of $4000.

The cost of installing two iron removal plants was Rs. 48,000. Technical details are provided in the project proposal (weblink given below). Renovating the water harvesting structure (a pond-like structure) at Badaldei village costed Rs. 140,000. Renovation of the water harvesting structure mostly involved earthwork in embankments. The proposed work did not involve any earthmoving machinery.

Around 45 households from backward castes and scheduled castes families were expected to benefit from the water harvesting structure renovation: 19 backward caste families (mostly rehabilitated potters and blacksmiths) from Ranapada and around 26 economically backward scheduled caste families from Nandol village. Work began on the project in March 2004, a lean period for daily wage agricultural laborers. The renovation work for the water harvesting structure was completed in May. The iron removal plants were installed in June.

The sustainability of this project can be seen from the fact that the water harvesting structure would provide a constant irrigation source in a drought hit region. The life of the iron removal plants depended largely on the maintenance of the plants by the users and could last for at least fifteen years. The maintenance required was easy since it only involved washing the filter medium periodically. Feedback received from Antodaya showed the success of both the iron removal plants in purifying the water and the water harvesting structure in collecting rain water.

For additional details on this project, refer to:

http://www.stuorg.iastate.edu/sankalp/projects/New-projects/Antodaya.doc

dridsankalp

A couple of years after graduation, our group of friends agreed that working with Sankalp was one of the most rewarding experiences at Iowa State University (ISU). Some even went as far to say that getting a degree was purely incidental. At the same time, we lamented the fact that as people finish the mandated time for their degree, many of them lose touch with Sankalp or its related activities.

One of the major reasons for this is that while at ISU we have an organization we can work with, such a forum ceases to exist as people move to different parts of the country. To address this need, the idea of DridSankalp (DS) was born as an organization for ex-Sankalpites - to provide a means of continuing to work for sustainable development in India. Once the idea was set rolling, it metamorphosed into something bigger and currently DS has members from outside Sankalp Alumni as well.

Unlike an organization where all the members are in the same geographical location, the members of DS are spread across USA and even in India. This presented some unique challenges in setting up DS. One of the main challenges was that, unlike traditional organizations, we could not have meetings and fund raising activities. Given the fact that this is an age of technology, we started to envision DS as an e-organization. This vision also provided DS with its niche.

Often a valid question is raised - why another organization in the already crowded space of NGOs? What is unique about it? Some of the reasons that provide DS with its distinctive space in this area are as follows:

• DS is a virtual community of volunteers. People can work across different geographical zones.

• The United States is a highly mobile society. Almost half the population moves every five years. In such a situation, every time people move, there is an additional overhead of becoming part of another group. DS does away this problem. A certain group of people are synergetic. Once an effective and efficient group is formed, DS ensures that the group is not disbanded.

• A number of small places do not have chapters of national NGOs (such as ASHA) where they can donate their time and efforts. DS by its very nature is a virtual organization and hence provides people with the means to be involved irrespective of their location.

• A steady inflow of volunteers (ex-Sankalpites) who are well schooled in working in a literacy focused organization make DS an efficient organization.

• A significant amount of time is spent by many organizations in raising funds. DS has a subscription based model where working professional donate a nominal monthly amount (via paypal). So, as membership increases this would be sufficient to support a small number of medium sized projects. If need be, we could also look towards corporate sponsors and patrons to support special interest projects (such as projects in their native state).

• DS envisions a strong volunteer base in India so that it can support projects better and interact with them closely rather than merely acting as a funding agency. We have an Indian liaison in place whose mandate is to make this possible.

alumni outreach

At the current time, the major activities of DS include obtaining project proposals and then, as a group, deciding whether to fund them or not. For example, we supported the 'Mithila painting' project in conjunction with Sankalp. Our `project process' borrows heavily from Sankalp. However, as a group, we have decided to focus on literacy related projects. This was because, given the size of our organization (at this time), we thought it would be prudent to concentrate on a niche area and be able to obtain tangible results.

DS is still a very informal organization and we are in the process of formalizing it. The first draft of our constitution is ready, and we are in the process of designing a website. Currently, talks are underway in the group, to get the organization registered in the state of Illinois. We have tele-meetings once a month and all the major issues and organizational activities are brought up at this meeting and addressed. Any further discussions are carried via e-mail. There is a DS yahoo group were all the discussions are archived.

We are learning, as we go about this task of organizing an e-organization, and ideas and volunteer efforts are always welcome. Your feedback will be greatly appreciated. If you would like to know more about us or would like to be added to the DS yahoo group, please feel free to contact me at kaul_neeraj@yahoo.com

serenity

perspective

All of us working in the India development arena are often asked to give our opinions on the top development priorities for India for the next decade. The usual topics then range from AIDS prevention to water to literacy to food security to population control to environment to abolishment of casteism to women's issues to child rights to government corruption. The conversation descends from there into what I like to call "the big battle for supremacy", where these issues are given ratings of importance, usually based on the opinion giver's personal feelings on the issue at hand. Things usually then take a turn for the worse and we are left either with a list of priorities that may or may not apply or, at worst, in a huff and not speaking to our colleagues ever again :-). I'd like to offer a simpler premise - that all of the issues are equally important and what's more, they are all interconnected.

Not addressing one issue while trying to solve another issue can undermine the efforts to solve that other issue; by the same token, solving one issue can actually support and encourage solving other issues, or better yet, can actually make other issues non-issues entirely. All of the issues are equally important. All of the issues are interconnected.

Let's examine a fictional example of a group who feels that primary education and literacy are the single most important development issue facing India today and that alleviating child illiteracy rates will be the single most important thing that anyone can do for India. We will, most of us, agree that being able to read and write in at least one language is a good thing. However, let's place this fictional group in a fictional rural Indian village, with all the very real problems that real rural Indian villages face. Some of those problems include all of the not so fun things that go along with life in severe poverty; things like severe malnutrition, lack of adequate sanitation and health care, having to work long hours so that the family can have the luxury of at least one meal during the day, lack of decent housing, no electricity, no running water, and a panchayat that is more interested in filling their own pockets than using the government given funds to repair the village flood walls. So the fictional group builds a small school and brings school supplies and a teacher to the fictional village, in the hopes that giving the children at least a primary education will enable them to be able to get better jobs in the future. However, now our fictional group runs into problems – most of the children can't attend school because they must work, there's no electricity so they can't have night school, the children who do attend school haven't eaten in 17 hours and can't retain much of what they're supposed to be learning. So, does this change our priorities? It can. It should.

At this point, the fictional NGO is not being effective at providing its stated goals. The money it's taking from its donors and paying out towards the school program is not being put to the intended use nor is anyone getting a great education out of it. So at this point, they have three options: Give up and go home, keep doing what they're doing and hope for the best, or try something new. In sustainable thinking, trying something new is always a good idea. Remember, all of the issues are equally important. All of the issues are connected.

Trying something new could open new fictional doors for our fictional NGO, although it does mean taking some educated risks. It becomes necessary for the fictional NGO to begin asking some new questions, both of themselves ("How can we best assist this village in order to be able to provide the literacy and education program that we originally started out to do?") and of the villagers ("What do you villagers need and what issues do you face so that we can help all the children get a primary education?" "What do you feel is the biggest problem in the village?" "What do you feel is the best thing to be proud of in the village?"). Once a needs assessment is completed, it could mean asking other NGOs who specialize in other areas to help out. It could mean novel solutions. If the children must work in order to earn money for the family to be able to eat, one solution is kitchen gardens – a handful of seeds for those with land, a handful of seeds plus a small garden plot on school grounds for those without land. Villagers growing their own vegetables and freeing up the children to come to school. The school in turn can use the garden plots as biology or ecology class. Let's say the fictional village is in a drylands area. Maybe important to being able to grow their own food is being able to secure enough water to do so. Coordination with rainwater engineers is a possibility. The school could use the construction as mathematics, vocational or ecology class. Now our fictional village has water, kitchen gardens, and a school with children who can attend. Since there's now water, trees could be planted. Since trees are being planted, the fictional villagers could plant some fruit trees too. Now our fictional literacy NGO, although unbeknownst to them,

is working towards solving another issue – malnutrition. Because the children now have access to some nutritious veg and yummy vitamin packed fruit, their little grey cells are functioning better. Hey – their general overall health is increasing too – mark down another issue in the process of being solved. Maybe they won't have such a need for visiting the doctor if disease and infections can be prevented by strengthening their immune systems. Our fictional NGO might put the women in charge of the gardens and trees. That could mean advances in women's rights. Since of course our fictional NGO is teaching them to not use pesticides or petrochemical fertilizers, that's good for the environment, which is good for us all. Wait! They were just planting trees! That's helping the environment too! That's also helping bring more rain to the arid area via evapotranspiration! But you'll have to visit the fictional school to learn what that is :-).

In the above fictional example we've just seen how applied sustainable thinking can help a school run and a village start on the path of sustainability. You're saying "Yeah Pallavi, that's a nice story and all, but it's fictional. In fact you used the word fictional so many times that it's not funny." The good news is that it's real and it's already happening in India, in places like rural drought prone casteish Andhra Pradesh. It's happening in the jungles of Karnataka.

In the above example, we haven't solved everything. We will still have to deal with the government officials wanting bribe money to get our FCRA certificates and to give us good reports. We haven't solved the AIDS crisis. We haven't solved dealing with greedy panchayat members or others who want to stick with ways that assure them their small empires. We will still have to find ways of dealing with the onslaught of globalization and commercialization. We will still have people degrading women. But what we have done is made a beginning. In sustainable thinking, everything is equally important and everything is connected. In sustainable thinking, things are always changing. As we make our beginning, we see the relationships that are there and how our actions in one area affect all the other areas. Those relationships will begin to respond and change, in response to our actions. As those relationships begin to respond and change, based on the beginning that we've made, we will also need to make additional responses and changes. The goal is not to fix everything at once, because that is not in our power. But once we've made a start on the path to sustainability, we can continue to apply our lessons learned as we go forward. We can't solve the AIDS crisis, but now with our literacy program in full swing, and fully supported by our holistic approach, the children and other villagers can be taught about AIDS. We can't solve government corruption, but we can teach each other that these things are not good and we can report the individuals to the Anti Corruption groups. We haven't solved global warming, but we are doing our part to make sure that we aren't contributing (or we're contributing as little as possible). We can't afford to be purists in every regard, but we can afford to make diplomatic compromises only when absolutely necessary.

Also, as we go forward, we'll find that we had some excellent ideas that worked great, and we had some excellent ideas that sounded good but in reality turned out to be pretty lousy. The key here is in continual feedback - action, then assessment. Again, we assess by asking questions. Did it work? Did we get the intended result? Are people happy with it or happy doing it? If they aren't happy, why aren't they happy? To illustrate the importance of feedback, I'll give an example. There were some very intelligent people that came up with something they call the "Smokeless Chula", which is basically a traditional "country" cooking stove with some minor modifications. These intelligent people looked at the thermal loss and air emissions of the traditional design and changed a few things so it was more efficient. What they came up with was the Smokeless Chula, which uses far less wood or fuel and emits far less smoke when cooking. It was heralded as a great thing because many people cooked inside their huts and the hut would fill up with smoke, making for poor air quality and red eyes. The Smokeless Chula was promoted by volunteers in many villages. The Smokeless Chula was a big success in the North, but for some reason, in more southern areas, the villagers didn't like it and wouldn't use it. So they did an assessment. What they eventually found was that in the South, the huts had thatched roofs. Insects would make their homes in the thatch, but normally were kept at bay with the smoke from the cooking stove. Once the Smokeless Chula was introduced, people tried it and used it for a while. But then they noticed that at night, many insects would fall from the thatch onto the sleeping residents and disturb their sleep, so they went back to using the traditional chula. In the far North, this was not an issue

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small is beautiful

book review

About the author

E. F. Schumacher spent twenty-five years as chief economic advisor to the national coal board of Britain, and through that organization became aware of the problems of energy supply and environmental sustainability. His varied interest in the Buddhist and Taoist philosophy and his admiration for Mahatma Gandhi's work helped him tie the problems of economics to the set of values that he calls "meta-economic".

According to The London Times, "Small is beautiful: Economics as if people mattered" ranks among the hundred most influential books published since the Second World War. Published in 1973, this ground-breaking book quickly became an international best seller. Written in a charming and simple style, the book looks beyond the basic assumptions of modern economics and proposes new ways of looking at our contemporary economic life.

Natural Capital

The author starts off by defining the central premise of the book in terms of economics: that the illusion of unlimited power, nourished by astonishing scientific and technological achievements, has produced the concurrent illusion of having solved the problem of production. According to the author, the assumption that the problem has been solved is incorrect because of the basic economic fact that we are rapidly consuming capital that goes into our "business". Instead, we are treating this capital as income. The "natural capital" the author talks about are: the fossil fuels, the tolerance margins of the nature, and the human substance.

No one will deny that fossil fuels are not treated as capital items. If we treated them as capital items, we would be concerned about their conservation; we would minimize their current rate of use and in fact we would ensure that the money obtained from realization of these irreplaceable assets be used in the research and development of production methods and living patterns that do not depend on fossil fuels. The squandering of the second capital can be seen from the irreparable damages caused to nature by the industrial processes that are borne out of our so-called great "technological successes". Our scientists and technologists have learned to compound substances unknown to nature, against which nature has no defense. We are rapidly using up these irreplaceable assets beyond the tolerance margins of the nature. Lastly, our current methods of production are eating into the very substance of industrial man. The substance of man, according to the author, cannot be measured in terms of gross domestic product (GDP). However, the symptoms of loss of substance can be gauged from the statistics involving crime, drug addiction, vandalism, mental breakdown, etc. Towards solving this central problem, the author proposes that we evolve a new life-style, with new methods of production and patterns of consumption - a life-style designed for permanence.

Economics

According to conventional economics, any activity that is "economical" is considered acceptable regardless of whether it is immoral or ugly, soul-destroying or degrading, perilous to the peace of the world or to the well being of future generations. Moreover, any activity is considered economical as long as it earns adequate profit in terms of money. Hence the author dismisses conventional economics by saying that it is centered on one theme - whether an activity yields monetary profit to those who undertake it. Another shortcoming of conventional economics is that "economic" judgments are necessarily narrow: they give vastly more weight to the short term than to the long term. And these judgments are based on a definition of cost, which excludes all "free goods" such as environment. Therefore, he proposes a new science - "meta-economics" consisting of two parts - one dealing with the human being and the other with the environment.

The author contrasts conventional economics to the Buddhist economics and draws various points of distinction; e.g. unlike modern economics that views "work" as that which should be "compensated", the Buddhist takes the function of work to be threefold: to give an individual a chance to utilize and develop his faculties; to enable him overcome his ego-centeredness by joining other people in common tasks; and to bring forth the goods and services needed for modest existence. According to the author, modern economics considers goods as more important than people and consumption more important than creativity. In short, Buddhist economics tries to maximize human satisfaction by the optimal pattern of consumption, while modern economics tries to maximize consumption by the optimal pattern of productive effort. The author next focuses on the various important resources – viz. education and land - that go into building a civilization.

Education

Emphasizing that education is the most vital of the resources, the author feels that the key to economic

development lies in the ideas spawned in the mind. And such ideas are nurtured and strengthened only through education. The essence of education, then, is transmission of ideas: of values of what to do with our lives and of principles that enable a man to choose one thing instead of another. When people ask for education, they normally expect something more than mere training, something more than mere knowledge of facts. What they are looking for is ideas that would make the world intelligible to them. When something is intelligible, people feel the sense of participation; without this would exist the feeling of estrangement, which could breed loneliness, despair, and cynicism.

The greatest ideas of sciences and humanities are nothing more than working hypotheses, just a "know-how", but completely inapplicable to conduct of our lives or interpretation of the world. The author quotes Etienne Gilson who correctly observes that, "the growing interest taken by men in the practical results of science was in itself natural and legitimate, but it helped them to forget that science is knowledge and the practical results are just by-products…which also lead to ignorance of metaphysics and ethics…" Hence, education cannot help us as long as it accords no place to metaphysics. Education can help us only if it produces "whole men." The truly educated man is not one who knows a bit of everything, but one who is truly aware of the metaphysics and ethics of all subjects. A truly educated person is never in doubt about his basic convictions, about his views on the meaning and purpose of his life.

Land and agriculture

Schumacher feels that the greatest material resource of a society is its land, and claims that by studying how a society uses its land and all the creatures living on it, its future can be reliably gauged. Today's society fails to distinguish between means-to-end and ends - is the land merely a means of production or is it more? Farmers are simply considered producers who must cut cists and raise the efficiency in every possible way - even if it means destroying the health of the soil. The end effect is the depopulation of land and overcrowding of cities. According to the author, the fundamental "principle" of agriculture is that it deals with life, with living beings, whereas that of the modern industry is that it deals with human-devised processes and non-living materials. The ideal of industry is the elimination of living substances. However, human life at the level of civilization demands the balance of two principles - a balance that is destroyed when people fail to appreciate the difference between agriculture and industry.

Land and creatures are factors of production, that is means-to-end, but this is their secondary and not their primary nature. Before everything else they are ends-in-themselves - they are meta-economic. Man has not made them, and it is irrational for him to treat things that he has not made and cannot make and cannot recreate once he has spoilt them, in the same manner and spirit as he is entitled to treat things of his making.

For man to put himself in the wrongful relationship with animals has always, in all traditions, been considered a horrible and infinitely dangerous thing to do. It is interesting to note that the modern man is being told, in the name of science, that he is really nothing but a naked ape or even an accidental collocation of atoms. And as modern man thinks so "humbly" of himself, he thinks even more "humbly" of the animals which service his needs and treats them as if they were machines. What applies to animals upon the land applies equally to the land itself. Criticizing the large scale mechanization, heavy chemicalization, industrialization and, in general, the depersonalization of agriculture, the author says that man's management of land must be primarily oriented towards three goals - health, beauty, and permanence; productivity will then be attained as a by-product.

Development

Discussing development in the third-world countries, the author points out the presence of dual economy, which unless consciously counteracted, produces what the author calls a "process of mutual poisoning," whereby successful industrial development in cities destroys the economic structure of the hinterland, and the hinterland takes its revenge by mass migration into the cities, making the vicious cycle utterly unmanageable. The challenge of development is to bring economic health to the small towns and villages, which contain 80-90% of the total population. Schumacher suggests that the key to the solution to this problem is decentralization-of industry and power. By the decentralization of the industry, the author means creating millions of new workplaces in rural areas that are cheap, require less capital and employ simpler production methods so the demands for high skills and requirements of raw material are minimized. Finally the author calls for decentralization of power, so that people in rural areas

small is beautiful

are given authority regarding decisions that affect them.

Small is beautiful

To evolve a new life-style, the author says that what we really require from scientists and technologists are methods and equipment that are cheap and accessible to everyone; suitable for small-scale applications and compatible with one's need for creativity - a method that he calls "intermediate technology." To prove the second requirement of scale, the author quotes Professor Leopold Kohr, "small scale operations, no matter how numerous, are always less likely to be harmful to the natural environment than large-scale ones, simply because their individual force is small in relation to the recuperative forces of nature. The greatest danger invariably arises from the ruthless application, on vast-scale, of partial knowledge."

book review

The author says that the idea of unlimited economic growth until everybody is saturated with wealth, needs to be seriously questioned on at least two counts: the availability of basic resources and the capacity of the environment to cope with the degree of interference implied. He says that an entirely new system of thought is needed, a system based on attention to people and not goods - a system of "production by masses, rather than mass production".

The author argues against the widely held beliefs that "bigger the better" and the theory of economies of scale. He emphasizes on the duality of the human requirements: freedom, which is represented by decentralization and which is more likely in smaller organizations and, also order (or centralization), which the large organization gives. What probably we really need is not either-or but the-one-and-the-other-at-the-same-time. The key, then, is to achieve smallness within large organization. To create such a large organization with smallness, the author proposes five principles:

The Principle of Subsidiary Function: "It is an injustice to assign to a greater and higher association what lesser and subordinate organizations can do." Simply put, this means that the higher level must not absorb the functions of the lower one, on the assumption that being higher, it will automatically be wiser and fulfill them more efficiently. This structure could be achieved, the author asserts, if the organization consists of many semi-autonomous units, which he calls "quasi-firms." Each of these will have a large amount of freedom to give the greatest possible chance of creativity and entrepreneurship. The author explains the idea with an example of a person holding large number of balloons - each balloon has its own buoyancy and lift and the person just holds the strings in his hands. Every balloon is not only an administrative but also an entrepreneurial unit. The man holding the strings does not lord it over the balloons but stands beneath them, yet, holding all the strings firmly.

The Principle of Vindication: "Except for exceptional cases, the subsidiary unit (quasi-firms) must be defended against reproach." Good government is always government by exception and this principle makes the central control more meaningful and effective. The exception, though, should be clearly defined and acted upon.

The Principle of Identification: "Each quasi-firm must have a separate profit and loss statement and balance sheet." Without this, the unit's profit or losses flow into the totality of organization's account and disappear and the unit enters the new year with zero balance, which takes away individual identity.

The Principle of Motivation: "People act in accordance with their motives." For a large organization, with its bureaucracies, abstract rules and relative incomprehensibility, motivation is the central problem and must be addressed.

The Principle of Middle Axiom: Top management of any organization has a difficult task of maintaining order while still allowing for individual freedom. Acquiescence to one at the cost of other is never beneficial for the organization. Hence what is required is something in between- a middle axiom. One example of middle axiom is impact statistics, which instead of providing more information to the collector makes supplier of the statistic aware of certain facts, which he might otherwise overlook.

Summary: Essentially, this is an economics classic. Schumacher exposes the shortcomings of conventional economics and proposes a holistic approach that takes into account the human being and the environment surrounding him. The author criticizes large scale mechanization and industrialization, and suggests simple solutions for today's organization - be it a private enterprise or a local government. Several of Schumacher's ideas are particularly relevant to contemporary economic life. Perhaps the foremost among these is the idea of decentralization, where he proposed the idea of "smallness within bigness"; in other words, for a large organization to work, it must behave like a related group of small organizations.

natural farming

This article profiles two pioneers in ecological or holistic farming, from two different generations and two different parts of the world. While the techniques applied on these two systems may not be replicable, the underlying philosophies are universal.

Masanobu Fukuoka (born 1913) calls his scheme of farming natural agriculture. He took 30 years to develop this style of farming and it involves complete harmony with nature. He also calls this style of agriculture as "do-nothing" farming as there is no tilling, ploughing, weeding or the use of organic or inorganic fertilizers. He maintains a complete ecosystem and believes that nature provides the ultimate balance and will take care of the weeds, predators etc. The fruit orchards are not pruned for easy hand picking but are allowed to grow into their natural shapes. Vegetables and herbs are grown in a random mix on the orchard slopes with a minimal soil preparation. Weeds are cut back only in the initial stages of the plant growth but thereupon allowed to grow unhindered. This forces the vegetables and the herbs to become hardier to compete with the weeds and after a few generations the vegetable plants revert to the strong growing habits of their natural wild predecessors. Japan enjoys a humid climate with dependable rain which allows such plantation sequences- this methodology might not work in other regions. Fukuoka does not have a problem with bugs and other pests- these are kept under check by the natural ecosystem in his farms. While these bugs destroy other crops surrounding his farm, his farm is never affected due the presence of the natural predators of the bugs.

Fukuoka grows two crops annually- rice in the summer and barley and rye in the winter. He sows barley, rye, rice and white clover together on the same fields and covers them with rice straw. The rice seeds are pelleted in soil to protect against birds and rodents and to ensure that the seeds germinate only in ideal conditions. The seeds are distributed in the season that they would have naturally fallen. There is no ploughing of the soil - the seeds are just distributed on the land, which in turn has been sufficiently loosened by nature's agents such as earthworms, and then covered with rice straw. After the broadcasting of seeds, barley, rye and clover sprout right away as the winter crops while the rice stays dormant until spring. Clover helps discourage weed growth. At the beginning of spring, the rye and barley are harvested and allowed to dry on the field. They are eventually threshed and stored while the straw from those crops is scattered unshredded on the field as organic nutrients. This is how it would have occurred in nature. Next, water is held in the fields for a little while to weaken the clover and weeds to give rice a chance to sprout up, and once the fields are drained the clover recovers to spread beneath the rice plants. From then on, Fukuoka does not interfere much with his fields, a time that organic and industrial agriculturists would have to put in their maximum effort. In October, the rice is harvested, dried and threshed.

The quality of his products and his yields compare favorably to industrial agriculture systems, but in Fukuoka's farms, the fertility of the top soil, its structure and ability to hold water is constantly increasing. This is not achieved in organic or industrial farming and implies that Fukuoka would never have to resort to using fertilizers and compost to improve yields. Weeds also play a role in Fukuoka's farms- since they are never pried out, their organic content gives the soil its natural fertility and ability to retain water. Once nature's conditions have been tilted to his favor, he rarely intervenes. In Fukuoka's words "I ultimately reached the conclusion that there was no need to plow, no need to make prepared compost, no need to apply chemical fertilizer or pesticide. And so my farming has become this very simple way. It's really no more than tossing out seeds and spreading straw, but it has taken me more than thirty years to achieve this simplicity."

Another person who has carved out his own niche in natural farming practices is Joel Salatin, a livestock farmer in the Shenandoah Valley in Virginia. Salatin has adopted a similar style of farming, where he has created conditions for animals to do most of the digging and spreading of manure. In his Polyface Farm (started in 1960s), he raises cattle, pigs, chickens, turkeys, rabbits and sheep in a community of interdependence. Salatin believes that all the animals should have a chance to express their "physiological distinctiveness". In his farm, he exploits the natural inclinations of animals - be it their natural inclination to peck for seeds, to hunt for corn, to nibble grass. This is similar to Fukuoka's approach - observe nature and then harness those findings for your benefit.

In nature, birds usually graze along with herbivores such as cows, and Salatin uses a similar model. The cows are initially allowed to graze the pastures and once they are herded out, chickens and hens are let into those pastures. These chickens and hens eat the insect larvae in the cow scat and also eat the short grass not eaten

natural farming

by the cows. As they eat their food, the spread the cow manure across the field thereby fertilizing the field and also eliminating harmful parasites from the cowdung. Once the chicken and hens are grown and taken out, sheep are moved into the pastures and they eat the weed species that the cattle and chicken don't consume. In the winter, the cows are kept inside a barn and their manure is layered with straw, with some corn and wood chips thrown in. This mix anaerobically ferments over winter and by March the compost cake is dug into by pigs which are after the corn buried at the bottom with the straw. This three feet compost cake is hence mixed well and aerated by the pigs, and the resulting final compost is spread on the pastures to grow grass.

green pioneers

Salatin also has vineyards in his properties, where the trees coexist with turkeys. The vineyards are divided into four sections and turkeys are allowed to graze under the vines and moved from section to section every week. The turkeys mow the grass, debug the soil and fertilize the plants in return for shade and weather protection from the vines. After four weeks, when the turkeys are tall enough to reach the vines, they are moved to a pasture, leaving behind a nicely carpeted vineyard since turkeys, unlike chickens, do not peck the soil in search of worms. Hence, the same portion of land produces turkeys and grapes, thereby increasing productivity without increasing inputs. In addition to this interdependent web, Salatin has other ecologically sound features in his farm such as ponds which not only increase the number of species and their numbers, but also capture all rainwater run off, thereby reducing any fertilizer pollution. As with Fukuoka, the land Salatin uses is constantly improved by the ecological dance of plants and animals. Joel Salatin currently makes a healthy $200,000 annually from his farm and believes that many principles of his farm can be replicated elsewhere.

Masanobu Fukuoka and Joel Salatin have both blazed unique trails in two different lands, in two different cultures using the same philosophy of being in harmony with nature. Their solutions required patience, understanding, diligence, intelligence and a strong belief in nature. For these reasons, their practice of farming should be a model for the rest of the world, but for the very same reasons natural farming is unlikely to be adopted widely. A simpler system, however flawed, is preferred in these days of industrial agriculture, rather than a system that requires constant innovation, patience and time. What Fukuoka and Salatin have shown the world is that it is possible to balance human requirements with nature in a manner that benefits both. Examples of the farming stratagems adopted by Fukuoka and Salatin were retold from their books "The Straw Revolution" and "You can Farm" respectively. The portions described here are highly simplified and give only a flavor of the kind of farming practiced by them. Portions of Salatin's farm description were also adapted from Michael Pollan's talk in Ames, Iowa.

serenity

(Continued from Page 7)

as the traditional houses are built using mud bricks and have chimneys. With feedback, they learned that the Smokeless Chula was really a wonderful thing for North India, especially in places like Ladakh where cooking fuel resources need to be conserved. It makes sense there. With feedback, they learned that due to other circumstances, the Smokeless Chula was not very popular. With feedback, we can learn what went wrong and why, as well as what works and why. That in turn makes us more efficient going forward on our path to sustainability.

As we go forward, we might want to delve more deeply into some areas. Perhaps we want to look more deeply at how the whole village functions in decision making. Perhaps we want to introduce a recycling program. Perhaps we want to come up with ways to teach that women are not merely subservient beautiful objects in saris, concerned only with the latest nail polish colors, nor are they the Bollywood vixens as shown in most films. In sustainable thinking, the possibilities are endless.

Now we've seen some examples of what things can (and are) happening as we move on a path towards a sustainable India. I've given some tips, tricks and ideas. The work is not overly simple, and it will take some coordination, but it's also not overly difficult either. In sustainable thinking, everything is equally important and everything is connected. I have written this article and now you have read it. So….where will you go from here?