Echoes of Eco

APRIL. 2009 Vivekananda Kendra- nardeo Newsletter Vol:1 No:2

Eco-Views

Retreat of Glaciers and water wars: *This is taken from a research paper by ISRO scientists that appeared in "Current Science" issue of January 2007.Global warming is destroying the glaciers at an alarming rate. This can destabilize entire South Asian region and trigger catastrophic water wars.*

In this issue:

- Echo-Views
- Construction Technology
- Water Management
- Holistic Health
- Sustainable Agriculture
- Renewable energy
- Inner sustainability
- New Publication
- Visions of Wisdom

Global warming could be twice as bad as forecast: Reuters: 2009

The effects of Global warming this century could be twice as extreme as estimated just six years ago, scientists reported. Earth's median surface temperature could rise 9.3 degrees F (5.2 degrees C) by 2100, the scientists at the Massachusetts Institute of Technology found, compared to a 2003 study that projected a median temperature increase of 4.3 degrees F (2.4 degrees C).

The new study, published in the American Meteorological Society's Journal of Climate, said the difference in projection was due to improved economic modeling and newer economic data than in previous scenarios. To reach their conclusions, the MIT team used computer simulations that took world economic activity as well as climate processes into account, they said in a statement. These projections indicate that "without rapid and massive action," this dramatic warming will take place this century, the statement said.

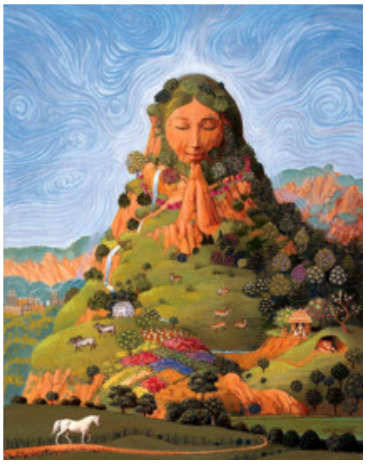
Powering our way out of poverty Sustainable development for poor

Up to 50% of households in India still have no access to modern lighting. Millions of street vendors, whether in the hi-tech city of Bangalore, India, or Kampala, Uganda, still resort to kerosene or candles to sell their meagre wares. Today, one of the greatest threats to the environment is poverty. Can we go and tell a poor woman in a rural part of a developing country not to cut wood or stop using kerosene for her lighting because it leads to global warming? Does she have a choice?...

Much attention has gone in to reducing the cost of the technology, but much less on the details of supply chains and financing. This would make technologies like solar, bio-gas and small-hydro affordable today, not tomorrow, to the poor. Solutions are simple and do-able, but require approaches that are focused on the poor.....It's high time that the poor become central to energy policies and not just recipients or "project beneficiaries". Only then will sustainable energy be their ticket out of poverty, as well as a vital way to address climate change.

[Excerpt from Harish Hande's article in Green Room of BBC]

To Mother Earth



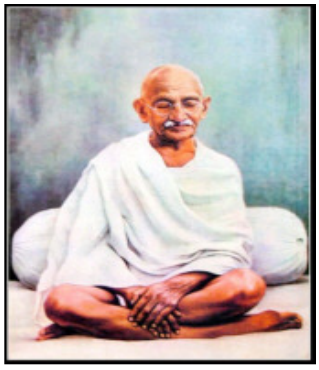
O Mother Earth!
Sacred are Thy hills, snowy mountains, and deep forests. Be kind to us and bestow upon us happiness. May you be fertile arable and nourisher of all humanity! May you continue supporting peoples of all societies and nations!

Hymn to Earth Mother
-Atharva Veda-

I think I'm subconsciously often strongly influenced by nature...they look good and beautiful and are infinitely more elegant than straight lines of steel and concrete. – Laurie Baker

Cost-Effective Construction Technology

The Vision



The building technology should be self-reliant. All construction should use materials available within 8 km radius.

-Mahatma Gandhi

The Action

VK-NARDEP promotes many specific technologies for cost-effective eco-friendly construction. Some of these technologies are given below:

- Arch Foundation – Economical and Strong
- Rat trap bond – Best Masonry work for walls
- Compressed Earth Blocks – Best substitute for bricks
- Flyash bricks : Recycling waste to wealth
- Cost effective filler slab roofs
- Ferro-cement channels for roofing
- Arches and Corbels
- Vaults and Domes
- Ferro-cement door and window shutters
- Brick Jalis and ventilators.

VK-NARDEP has trained scores of women masons and SHG members in these technologies.

Cost-Effective Construction and Carbon Credits

By adopting the cost-effective technologies, a reduction of 20% can be achieved in the cost of construction without compromising on the safety, durability and aesthetic aspect of the buildings....If we consider that each house will be of a bare minimum area of 20 sq. m according to the standards of different government schemes, the total area of construction per year will be 40 million sq. m. If cost-effective construction technologies like rat-trap bond and filler slab are adopted, India alone can contribute to a reduction of 16.80 mt of CO_2 per year and at the same time can save

Rs 24,000 million (20% cost reduction over 40 million sq. m of construction @ Rs 3000 per sq. m), which will go to the state exchequer as the schemes are funded by the Government. The reduction in CO_2 emission in monetary terms is equivalent to a CER of nearly Rs 1200 million.

Excerpted from:
Nilanjan Sengupta, *Use of cost-effective construction technologies in India to mitigate climate change*, CURRENT SCIENCE, VOL. 94, NO. 1, 10 JANUARY 2008

No	Building material required by conventional method	Reduction by using cost-effective construction technology (rat-trap bond wall, brick arch and filler slab)	Reduction in CO_2 emission in kg.
1.	Brick – 20,000 nos	20%, i.e. 4000 nos	1440
2.	Cement – 60 bags or 3.0 t	20%, i.e. 0.6 t	540
3.	Steel – 500 kg or 0.5 t	25%, i.e. 0.125 t	375
	Total reduction in Carbon-di-oxide emission		2355 (say 2.4 t)

Table Source: Niranjan Sengupta: 2008

Rain produces good food, and is itself food. – Thirukural [2:2]

Water Management

(Courtesy: www.adsoftheworld.com)

Virtual Water: Future determinant of food prices?

Virtual water (also known as embedded water, embodied water, or hidden water) refers, in the context of trade, to the water used in the production of a good or service. It is the amount of water that is embedded in food or other products needed for its production. Trade in virtual water allows water scarce countries to import high water consuming products while exporting low water consuming products and in this way making water available for other purposes [World Water Council].

The virtual water content for agricultural crops (in m^3/ton):

Product	Virtual Water
Rice	2700
Wheat	1200
Maize	900
Soybean	2300
Broiler poultry	2800
Eggs	4700
Pork	5900
Beef	**16000**

Industrial Water Footprints

The global average virtual water content of industrial products is 80 litres per dollar. In the USA, industrial products take nearly 100 litres per dollar. In Germany and the Netherlands, average virtual water content of industrial products is about 50 litres per dollar. Industrial products from Japan, Australia and Canada take only 10-15 litres per dollar. In world's largest developing nations, China and India, the average virtual water content of industrial products is 20-25 litres per dollar.

Source: Water footprints of nations Vol-I UNESCO-Institute for Water Education, 2004, p.43:

Our Programme

Workshop on "Roof Top Rain Water Harvesting"

The workshop on roof water harvesting was conducted at Technology Resource Center of VK-NARDEP at Kalluvillai, Kanyakumari from 20th to 22nd April.

The number of participants: 20. The resource persons included Sri.G.Vasudeo, Er. Ramakrishnan and Shri.Varadharaj. The session provided participants an in-depth knowledge of the subject and its various dimensions

The workshop was sponsored by CAPART, Hyderabad.

Roof top rainwater harvesting workshop: Demos, Hands-on training, multi-media sessions. Participants had a holistic exposure to the concept and technology.

Sustainable agriculture

Sustainable agriculture refers to the ability of a farm to produce food indefinitely, without causing severe or irreversible damage to ecosystem health. Two key issues are biophysical (the long-term effects of various practices on soil properties and processes essential for crop productivity) and socio-economic (the long-term ability of farmers to obtain inputs and manage resources such as labor).

An important aspect of sustainable agriculture is the use of local resources to control pest. Here the important thing to notice is that we do not want to eliminate any insect but only control it – or rather integrate it with the natural cycles so that the pest will become part of the cycle and will not breed in excess to cause devastation. In this newsletter we share some of the easily preparable bio-formulations that can be made from locally available plants

Bio-Formulations

Papaya Formulation:

Take 1 kilo of pappaya leaves and soak it in water to such an extent that the entire leaves are submerged and let it remain for the night. Then take it and grind it. Now mix this is in a litre of water and spray it for 1 cent. (Note: Spraying quantity can vary from crop to crop, region to region and season to season.)

Bio-Formulations (contd.)

Pungamia formulations: (Note: Spraying quantity can vary from crop to crop, region to region and season to season.)

Method-I Take 1 kilo of Pungamia and soak it in water for a night and then grind it and add 5 litres of water and use it as spray for 2 cents.

Method-II Take 50 grams Pungamia seeds with seed cover removed and grind it and soak it in water. Add 1 litre water per cent and spray it.

Method-III: 100 gram Pungamia oil cake can be soaked in water and can be added to 1 litre water and sprayed per cent of a crop

Method-IV : 1 litre water and 30 ml of Pungamia oil : Emulsify and spray it per one cent land [immediate application after production]

Method-V: Pungamia oil cake 1 kilo, Neem oil cake : 1 kilo , Aloe vera juice 1/2 litre Cow-Urine 3 litres : all these have to be mixed and soaked in 15 litre of water for a whole night. THen this should be filtered and 60 litre water should be added and sprayed for an acre

Our Programme

Workshop on Azolla cultivation was held at Technology Resource Center of VK-NARDEP on 25th. .The resource person for the camps was Smt.Premlatha.7 farmers attended the workshops.

Extension material

Another important part of the work is dissemination of these low-cost eco-technologies (often forgotten indigenous technology) to the farming community through vernacular languages booklets which are lucid and attractive.

A sad page from history…

In 1833 British banned all indigenous medical schools. At least two medical universities teaching indigenous medicines were closed by the British: one at Kasi and another at Taxila. The British policy for greater part of the nineteenth century was to "push out the Indian medicine and patronize the European system. Modern researchers of medical history of India opine that the biggest impact of British colonialism on indigenous medical system was the closing of institutions of indigenous medical sciences in India This arrested the indigenous medical research. The consequences are felt to this day: it is possible that many modern health problems such as various cancers and acquired immune deficiency syndrome (AIDS) could have been cured by indigenous medical remedies, but this would require modern research conducted within a holistic paradigm.

Farah M Shroff in *Indigenous Knowledges in Global Contexts: Multiple Readings of Our World*, Budd L. Hall, George Jerry Sefa Dei, Dorothy Goldin Rosenberg,University of Toronto Press, 2000, p.220

Programmes this month

VK-NARDEP programmes are aimed to revive this indigenous medical system which is de-centralized and diverse. Varma ~ is one such indigenous knowledge which is highly efficient and cost-effective therapeutic system prevalent in Kanyakumari district which is conserved by Vivekananda Kendra.

Green Health Home which was open for 8 days treated 221 patients.

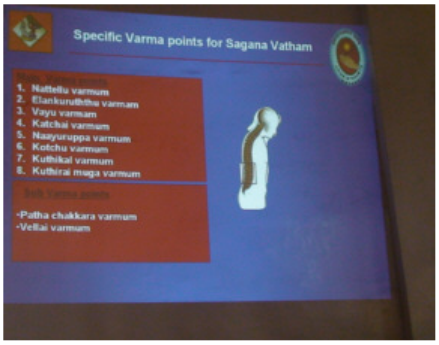
On 28th April **seminar on "Varma Points for treatment"** was conducted at Vivekanandapuram in which 179 traditional physicians and Siddha students interested in Varma therapy participated.

Dr. V. Ganapathy and a team of traditional Varma practioners provided the training as well as demonstration.

Inauguration by the lighting of ceremonial lamp by Siddha association president and participants.

Women SHG members market the Siddha medicinal products produced by them.

A section of participants



Scientific exposition of Varma points

Varma - Demonstration

An equation for me has no meaning, unless it represents the thought of God. - Albert Einstein

Renewable Energy Revolution

Energy scenario for India shows that large-scale investments in energy efficiency measures could limit the increase in energy demand to just one-third above the current level by 2050, rather than see it triple, according to conventional wisdom. By mid-century, 60 per cent of India's electricity could be produced from renewable sources keeping India's CO_2 emissions at the level of 2010 levels, instead of trebling as they do under the IEA projections.

Instead of simply countering the protectionist lobbies in the west, India should adopt a leadership role in demanding technology and finance from developed world to fully harness its green energy capacity and reduce its carbon emissions well below the requirement of Kyoto protocol. India should use Doha round to seek commitments for financial and technological assistance because that will not only help in fighting climate change but help in alleviating rural poverty, creating an inclusive society and bridge regional disparities. Effective governance of climate security not only will make India achieve its social, economic and environment goals it also holds the key to India's leadership of the world polity.

Excerpted from "India needs a Renewable Energy Revolution to Command Global Leadership" by Dr. Madhav Mehra, founder President of World Council for Corporate Governance, UK

Programmes this month

- A Shakthi Surabhi plant was commissioned for Shri. Narayanan, Costal and Rural Development Trust, Kovalam, Kancheepuram Dist.
- *Shakthi Surabhi* biogas training camp was held at Technology Resource Center of VK-NARDEP on 24th of April The resource persons were Er.Ramakrishnan and Sri. Muneeswaran. Five persons underwent training.
- As part of a pilot project to encourage livestock-owning farmers in southern Tamil Nadu to convert animal waste into biogas to meet their energy needs and use the residue to increase soil fertility, a biogas plant was started at Madurai.

Biogas plant gets shaped

Biogas + slurry use: individual case

Name of the Farmer: Sri Gomathi Nayagam

Village: Puliangudi Thirunelveli district

Livestock owned: 20 cows and one stud bull

Number of biogas plants: 2

Model: Deenbandhu plants

Capacity: 4 cu.m

Duration: Last 12 years

Slurry usage as manure in: 8 acres of land

Crops nourished: 250 coconuts lemon and Calopogonium

Fresh biogas slurry is let into the irrigation channel

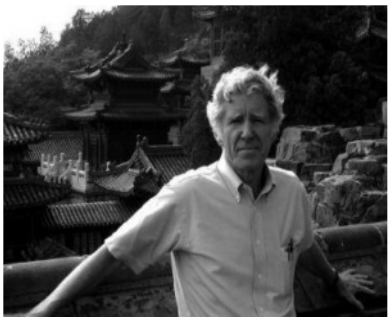
Farmer statement:
"No need for external ingredients to manage the nutrient health of the soil. The soil treated by biogas slurry has sufficient number of earthworms - which is a good indicator of soil health."

When learning is purposeful, creativity blossoms; when the creativity blossoms, thinking emanates; when thinking emanates, knowledge is fully lit; when knowledge is lit, the society is enriched. – APJ Abdul Kalam

Out of the Box thinking…

We desperately need a new way of thinking, a new mindset. The thinking that got us into this bind will not get us out. When Elizabeth Kolbert, a writer for the New Yorker, asked energy guru Amory Lovins about thinking outside the box, Lovins responded: "There is no box." There is no box. That is the mind-set we need if human civilization is to survive.

-Lester R Brown



Lester Brown the founder of Worldwatch Institute (1974) is considered by many as the guru of the environment movement.

Programmes this month

Motivation workshop for Cooptex staff

- Third workshop was conducted from 15th April to 19th April and was attended by 23 staff members. The resource persons were:

- Shri.G.Vasudeo
- Shri.Hanumantha Rao
- Shri.V.Ramakrishnan

The training caters to the needs of the body, mind, intellect, emotional well being and spirit.

Algorithm for India's Ethical development

A nation has to have ethics in all its tasks for sustained economic prosperity and peace.

↑

If a nation is to have ethics, society has to promote ethics and value systems.

↑

If society is to have ethics and value systems, families should adhere to ethics and value systems.

↑

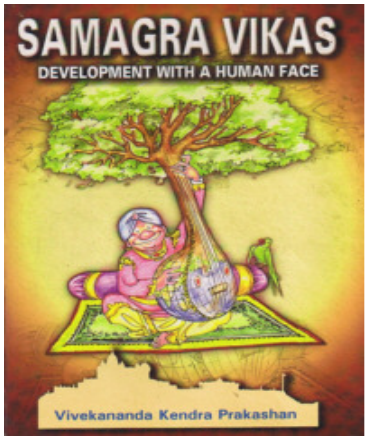
If families should have to evolve with ethics and value systems, parenthood should have inbuilt ethics.

↑

Parental ethics come from great learning, value-based education and creation of clean environment that leads to righteousness in the heart.

- Dr. APJ Abdul Kalam
(The Family and the Nation, p.191)

From Our Publications

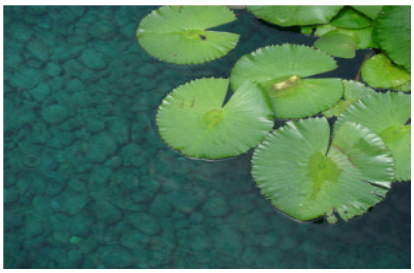


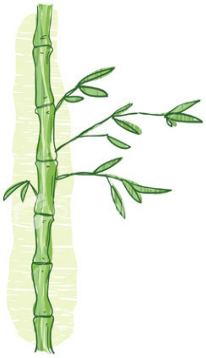
In his first chapter of Tao of Physics, author-physicist Fritjof Capra speaks about the transformation happening in new physics as changing the discipline with human heart. If Physics can undergo such a transformation then what about development, which is the confluence of technology, society, environment and economics?

This volume tries to answer that profound question. Can we have a development with a human face?

There are seven sections in the book. The section-I deals with education. It contains articles of eminent thinkers like Dharampal, Capra, Kamala Chowdry, Jeffrey Kottler among others. Kottler states that the self is the center of experience,. The second section is on heath which sees development as a conscious step to simplicity, ease, health, happiness and freedom. The section 3 deals with industry and environment. In this section Vandana Shiva reflects on the cultural roots and consequences of technology for the pluralist planet. The fourth section on Man-Machine and employment tries to define work in a holistic manner as "loving creative productive and physical" which provides "joy and pleasure" and meaningfully engage people for a health and just society. Section five focuses on energy. The section relates energy with equity. Section 6 deals on population and habitat thus: "The question who breeds , who practices birth control is of course to be seen in the context of who exploits and plunders nature and who conserves and who makes judicious use of resources." Section 7 which deals with ecology sociology and sustainability drives home the message of "Vasudha eva Kutumbakam" (Earth as one Family)

Samagra Vikas : Development with human Face
Vivekananda Kendra Prakashan
Price: Rs 200/-
Pages:: 356





True education is to realize at every step now our training and knowledge have organic connection with our surroundings – Rabindranath Tagore

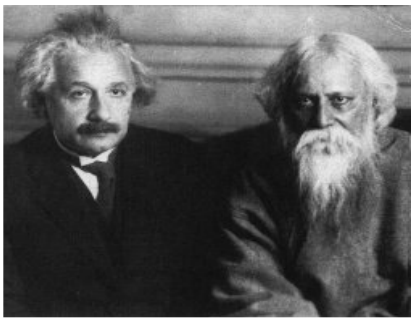
A conversation

EINSTEIN: Do you believe in the divine isolated from the world?

TAGORE: Not isolated. The infinite personality of man comprehends the universe. There cannot be anything that cannot be subsumed by the human personality, and this proves that the truth of the universe is human truth.

EINSTEIN: There are two different conceptions about the nature of the universe - the world as a unity dependent on humanity, and the world as reality independent of the human factor.

TAGORE: When our universe is in harmony with man, the eternal, we know it as truth, we feel it as beauty.



The moment of Discovery

Within Indian tradition, much emphasis is placed on the moment of discovery. Such insights need not be earth-shaking. They could be something quite trivial or small, but nonetheless they involve discovery. And when you discover something new, several powerful things happen. One is that you experience great joy. At that particular moment, there is nothing wanting, nothing you don't possess. Second, the discovery is something radically new.

Humans have not been here before, but now this piece of knowledge has been uncovered for the first time. Finally, and somewhat paradoxically, at this very moment, you also see that this discovery is not something new, but in fact is something very familiar. There is no sense of strangeness in discovery, only a sense of belonging; it is as if you were returning to your point of departure. The cyclical nature of the world, as well as what you are in your own true nature, is uncovered in the moment of discovery.

– George Sudarshan

Our common Home

We live in dark times: we are destroying Mother Earth and many people have lost hope. So it is important to highlight all that is being done to heal our planet. More and more of us are protesting the magnitude of the insults perpetrated against people, animals, and environment, the selfish squandering of our children's future all in the name of economic progress. Thousands are joining together to tackle problems of poverty, the unsustainable life styles of the elite and the destruction of the environment.

Through programs such as the provision of small loans for the poor, empowerment of women, organic farms, farmers markets, the purchase of farmland and wilderness to prevent development, and alternative energy technologies, the quality of life can be improved and people can better live in harmony with nature. And nature is very resilient. Most importantly, we are realizing that we as individuals truly make a difference and are thinking more carefully about the effect of our actions.

– Jane Goodall